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A Thrifty North and An Impecunious South: Nigeria's External Debt and the Tyranny of Political Economy

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A THRIFTY NORTH AND AN IMPECUNIOUS SOUTH: Nigeria's External
Debt and the Tyranny of Political Economy.

81ST INAUGURAL LECTURE

BY

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DEDICATION

To the Glory of Jehovah God

A THRIFTY NORTH AND AN IMPECUNIOUS SOUTH: Nigeria's External Debt and the Tyranny of Political Economy.

“An excessive focus on the role of vested interests can easily divert us from the critical contribution that policy analysis and political entrepreneurship can make. The possibilities of economic change are limited not just by the realities of political power, but also by the poverty of our ideas”.

Dani Rodrik, 2013:1.

Africa enters the 21st century as the poorest, the most technologically backward, the most debt-distressed and the most marginalized region in the world.

ECA 2001:27

Preamble

Does money matter? Some would agree that it plays no direct important role in the economies of nations and among this set of humans are mainstream economists (classical economic theory). However, in the sphere of economic thought, one of the schools, called monetarism, maintains that money supply (the total amount of money in an economy) is the major determinant of the nominal Gross Domestic Product (GDP) in the short run and the price level over longer periods (Omotor, 2010, Jahan and Papageorgiou, 2014).

In macroeconomic management, one of the tools the government uses through the central bank or currency board to control the overall performance of the economy is monetary policy (monetarism). Central banks' instruments of control are either by adjusting the supply of money or targeting of short-term interest rates (the cost of short-term borrowing), often aimed at low and stable inflation and general trust in the currency. This amplifies two fronts, in part, the central bank's views that (i) “inflation is ultimately a monetary phenomenon” and (ii) “price stability enhances the potential for economic growth” (ECB, 2011 cited in Hall, Swamy and Tavlas, 2012: 153).

The prognosis by Milton Friedman on inflation (which was and still a crunching plague of Nigeria's economic system before and today) being always and everywhere a monetary phenomenon, aroused my graduate interest (Omotor, 1990, 2005) and some of my major postgraduate publications (Omotor 2003, 2007 a,b, 2008, a,b, 2009, 2010 a,b,c,d,e, 2011 a,b)

toward monetarism. The conclusion from these empirical works falls appropriately in the enclave of John Maynard Keynes (1883-1946), the most famous economist of the twentieth century; who eulogized that 'money is a real phenomenon, money matters in the long and short run; that is, money is never neutral'. There was no doubt that monetarism gained much prominence and followership in the 1970s into the late 1980s.

At this instant, Mr. Vice Chancellor, permit me the license to partly reverse my exposition over the years rather than by novelty and sophistication, that at self-esteem and in my current concern about money, 'there is no money in money', but there is money in the black political economy of sovereign debt! I take solace in the ambience of the Nobel laureate John R. Hicks and I quote him:

'Money' is defined by its functions ... money is what money does'. While economists have spilled more printers' ink over the topic of money than any other, confusion over the meaning and nature of money continues to plague the economics profession. A clear, unambiguous taxonomy is essential for good scientific inquiry. All useful classification schemes in science require the scientist to categorize entities by their essential functions and properties. For example, even though a whale looks like a fish, swims like a fish, and will die (like a fish) if it is out of water too long, biologists classify whales as mammals not fish because whales suckle their young. Even though the uninstructed person may think a whale is more similar to a fish than to his/her own mammalian self, biologists classify whales according to an essential property and not to similarity in looks (John R. Hicks, 1967, p. 1).

A whale or a fish? My concern in recent times has been the dialectics that the empirical manifestation of my previous works, though in tandem to a large extent with the axioms of such a giant in economic science as John Maynard Keynes, in the midst of other Hercules of economic thought, were unable to resolve the puzzle of Africa's underdevelopment despite her much resource endowments. The inability to resolve the predicament that situates economies and spaces where people of black decent live, and particularly the Nigerian state, worries me more and here rest the limitations of all my research in economic science. Mr. Vice-Chancellor, my scholarly works in the discipline of economic science were thus, near 'misadventures'. But why?

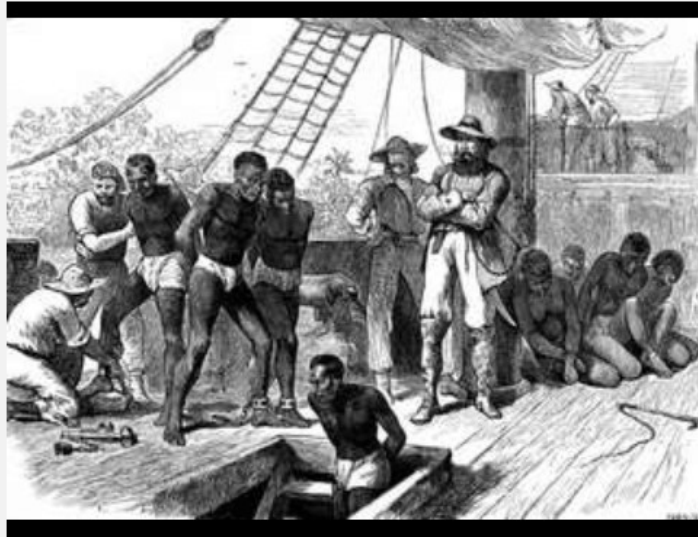
One cut out reason is theological- who are the descendants of Ham, the son of Noah in the Old Testament of the Bible? Noah's sons who came out of the ark were Shem, Ham and Japheth (Genesis 9:18). Ham beget four sons, Mizraim (Egypt), Cush (Sudan, Ethiopia), Put (Lybia) and Canaan (Hivites, Jebusites, Arvadites, Girgashites, Amorites, Arkites, Sinites, Hittites, Sidonians, Perizzites, Zemarites, Gen. 10, 15-18). In Genesis 9:18, Ham was described as "the father of Canaan". Canaan was cursed by Noah after the latter woke up from his wine and learned what his youngest son (Canaan), not Ham (Gen. 9:25, "...cursed be Canaan...lowest slave to his brothers") had done to him. The Canaanites were once slaves of the Hebrew people (descendants from the line of Shem) and were also at one time ruled by their brothers, the Egyptians (Ranganathan, 2014).

There seems to be no account that Canaan still exists as a nation today and this is a matter of further research for anthropologists, theologians and theological historians. The other three nations exist- Egypt, Ethiopia and Lybia. So where is Canaan? According to biblical account, the families of the Canaanites were scattered; and the boundary of the Canaanites stretched from Sidon as far as Sodom, Gomorrah, Adamah and Zeboiim, near Lasha (Gen. 10:19). In addition, as for nations which descended from Ham, first on the list and being the darkest (black), was Cush or Ethiopia (Genesis 10:6). Like the Ethiopians, the Canaanites, spoke Semitic. Where then is the black race from? If the Canaanites spoke Semitic like the Ethiopians, and Ethiopia is the blackest (darkest), then, by transitivity of implication, the Canaanites are equally black!

Although slavery existed for almost all recorded history, a substantial scholarship and historical documentation and evidence revealed that by 1480s, Portuguese ships were already transporting black Africans for use as slaves on the sugar plantations in the eastern Atlantic. Spanish took black African slaves to the Caribbean after 1502, the Portuguese merchants operated from the Congo-Angola area along the west coast of Africa. In the 1600s, the Dutch traded on African slaves, and in the century that followed, English and French merchants controlled about half of the transatlantic slave trade, taking human cargo from the region of West Africa between the Sénégal and Niger rivers. Transatlantic slave trade from the 16th to the 19th century transported between 10 million and 12 million enslaved black Africans across the Atlantic Ocean to the Americas alone, (Lewis,2005). There is no doubt that the sale of black Africans for over five centuries during the

slave trade had devastating effects on Africa; but we sometimes take consolation in the fact that “A curse lasts three to four generations...” (Exodus 20:5). But how many generations have passed since the days of Canaan?

Figure 1. Transatlantic Slave Trade



Source: Lewis, Thomas (2005). <https://www.britannica.com/contributor/Thomas-Lewis/9680979>

A second exposition is the well celebrated case of Dred Scott a man of colour on April 3, 1854 in St. Louis is evocative. This was the first time the right of a black person to be a citizen of the United States was questioned in the law court. The case which was shielded in mysteries was held in various courts; Missouri courts, Missouri Supreme court, Circuit Court of St. Louis County, U.S. Federal courts, and the Federal Supreme Court of the United States among others (Missouri State Archives, n.d.).

The case began on April 6, 1846, when Dred and Harriet Scott led petitions in the Missouri Circuit Court in St. Louis requesting permission to sue Irene Emerson to establish their right to freedom based on their residence on free soil. On July 1, 1847, Dred Scott' counsels Alexander P. Field and David N. Hall initiated a new case, naming John Sanford, Irene Emerson, and Samuel Russell as defendants. Before the court convened, Mrs. Emerson relinquished direct control over Dred Scott. Consequently, on March 17, 1848, the sheriff of St. Louis County was asked to take direct custody of Dred Scott with the order to hire him out pending the determination of the case. All

payments made to the sheriff, were to be accounted for to the party that won the suit at the termination of the litigation.

The decision by one of the courts on April 25, 1854 observed that if free black slaves have no right to sue, it also meant that neither could they be sued, and thus, will enjoy a very substantial privilege and immunity that free white citizens did not possess. To circumvent this, the Court held that every person born in the United States and capable of holding property was a citizen and has a right to sue in the United States courts and could as well be sued. *If Scott was free, he had the right to sue.* Based on his residence in free territory, Dred Scott's trial went on. In a blatantly racist opinion read in the court, the judge pronounced that black men are "***beings of an inferior order with no rights which white men were bound to respect***". Dred Scott did not get his freedom that day.

The jury at one time instructed that Congress could not prohibit slavery nor pass any law depriving a citizen of the United States of his property (the black slave). Therefore, Dred Scott was not a citizen both because he was black and a slave and did not have the right to sue in federal courts. However, one mystery that coloured Dred Scott's cases was that, they always had 'new' owner even when their original or previous owners appeared to have no interest in owning slaves.

The conclusion of the story is that after the litigation, Taylor Blow, the son of Scott's original owner, obtained ownership of the Scott family from their new owners and before the Circuit Court, Mr. Blow formally entered emancipation of Dred Scott, his wife, Harriet, and the children, Eliza and Lizzie. The judiciary holding an unbalanced scale, opened her eyes, slaughtered the black slave and on a platter delivered justice to the Whiteman!

The puzzle: The further south one travels in Egypt you find the black skin. Second, the ancient black Indians, known as "Dravidians", in ancient times were Ethiopians. From the records, there were known to be two types of Ethiopians, Western Ethiopians, in Africa, (were black with woolly hair and fine features) and their brethren, the Eastern Ethiopians of India, also were black (Ranganathan, 2014). Third, majority inhabitants of the Caribbean islands today are ethnically African who were black skin slaves. In South American countries, mostly Mexico, Colombia and Brazil, are a high percentage of people from black skin African descent. Fourth, "In North America

there was comparable little intermarriage between Africans and Europeans (and virtually none with Native Americans), leading to much more distinctive sense of racial identity and being “African American”—something most South Americans, even if they may have some African ethnicity in their ancestry, don’t feel” (Mullen, 2014). What is indisputable in this marking is that black Americans were once slaves. Fifth, recall that the Canaanites (the black skin) were scattered. Anyway, Ranganathan (2014) provided an excellent, scholarly, well-documented, and highly acknowledged anti-thesis of these insinuations.

The posers: Why is there perpetual poverty wherever the black skin lives? Why did Africa enter the 21st century as the poorest, the most technologically backward, the most debt-distressed and the most marginalized region in the world? No economic postulations may be able to salvage the wellbeing of the black skin, it may probably be left to politicians and bureaucrats.

The second reason which is still predominant today is because economists of black decent (EBD) steered clear of politics, the essential property that drives development. EBD rather, are more concerned about affirming and rejecting phenomena of money, inflation, general equilibrium analysis, Say’s Law, the axioms of an ergodic economic world and gross substitution, among others. Describing how economies work, when they fail, and how well-designed policies can enhance efficiency. Economists of black decent (EBD) spend their brilliant time analyzing trade-offs between competing objectives and probably, prescribed some of the best policies to meet desired economic outcomes, fair redistribution of wealth by following laid down procedures. Yet, their sovereign economies are worse-off; rentier political leaders of black decent are unable to comprehend their behavior of primitive material acquisition in Africa and this is even shoddier in Nigeria.

Globally, wherever the black man lives, there is a glaring precarious pain of poverty, staring deprivation and special human problems. Could this be in our stars as a heavenly debt? Not sure, as it can be argued that the failures of economic postulations in the enclave of the black race may not necessarily be in our stars, probably in our inability to comprehend them; maybe in our stars and such may require a heavenly concern. If not in our stars, then it is either because the adaptation of the philosophies, doctrines and theories are faulty and foreign, and do not reflect

our aspiration as a people; or because African leaders make choices from a *quandary* of alternative policy prescriptions by the EBD for implementation. This quandary according to Madison (1787, in Schofield, 2008), is a choice situation where all possible options appear extremely unpleasant, and laden with risk and uncertainty. Alternatively, the failures of these policies may have been caused by the primitive insatiable acquisition of African leaders to uncontrollably misallocate everything that comes their way, provided it leaves their fellow country people and future generations perpetually in debt? If it is the latter, then it is up to Africa politicians as irrational *agents of underdevelopment*, whose interest are harvest of failures, economic depressions, international financial crises, and wars (or civil unrest). Leaders of the black race have a choice to take the economists' advice (or not), and the bureaucrats to implement or be accomplice (Rodrik, 2013; Acemoglu, and Robinson, 2005); for here lies the tyranny of black political economy.

Mr. Vice Chancellor, Economics as a distinctive discipline and a science of alternative policy choices, allocates proportionate consequences (resources or returns) for all wrong policy preferences and the choices we make. Because choices range over every imaginable aspect of human experience, so does Economics. Choices arise because virtually everything is scarce, including the air we breathe. Economists have investigated the nature of family life, the arts, education, crime, medicine, sports, law—the list is virtually endless because so much of our lives involves making choices. It is in espousing the broadness of Economics in this respect as a universal science, that with shock of recognition, not of surprise, that I quote Robert Heilbroner's tribute to this "expanding domain":

ECONOMICS HAS BECOME the imperial social science. It is the only branch of social inquiry that enjoys a Nobel prize. It has been celebrated in a massive four-volume, 4 million word "dictionary", through which there runs, like an Ariadne's thread, the assumption that economics has finally escaped the parochial boundaries of its former kingdom of production and distribution, and can now lay claim to a realm that extends from family affairs to sports, from anthropology to political science (*sic* from medicine to law). More to the point, economics has earned the flattery of imitation

by its sister social sciences. Its formal mode of argument, mathematical apparatus, spare language, and rigorous logic have made it the model for the “softer” social sciences. (Robert Heilbroner, 1991: 457).

The tribute of Jack Hirshleifer (1985) to the “expanding domain” of Economics is, however, more palliative:

It is ultimately impossible to carve off a distinct territory for economics, bordering on, but not separated from other social discipline. Economics interpenetrates them all, and is reciprocally penetrated by them. ***There is only one social science.*** What gives economics its imperialist invasive power is that our analytical categories- scarcity, cost, preferences, opportunities, etc.- are truly universal in application.

Mr. Vice Chancellor, my concerns in this lecture are to reflect on the presumption that our need to borrow funds, particularly from external sources and subsequent suspension or repudiation of payments result from willful misallocation of resources and the indulgence to undertake roundtrip of such borrowed funds. Second, to show that debt and lack of growth are interrelated. It seems incontestable that excessive stock of external debt is retarding the growth and socioeconomic development of our dear country. At this instance, the lecture investigates the burden of public debt in the form of Solow growth model. The goal is to quantify the crowding out of physical capital by public debt and the related loss in long-run output. The disposition is that the debt burden in neoclassical growth sense, crowd-out physical capital and a related loss of long-run output. To further accomplish this task, an econometric analysis using a simulation approach is invoked to investigate external debt cum economic growth impact.

The third concern which emanates from the second, conjures that if repudiation on external debt ever occurs, it would result more from the political actions of the government as agent of underdevelopment due to excessive politicization of economic policies. A further empirical submission is that over-expansionary fiscal policy burden financed by external borrowing, increases inflationary pressure and this makes the impecunious south prostrate if it is saddled

with debt servicing and capital payments that require a sizable transfer of resources to the thrifty north (capital flight).

II

Mr. Vice-Chancellor, in keeping with the hallowed tradition of inaugural lectures as instituted by universities for the conservation, regeneration and reassertion of their vows to the understanding of humanity in all ramifications, permit me to amplify the shared view of Dr. Bright U. Ekuerhare on Inaugural Lectures. Dr. Ekuerhare, a Professor of Economics and one of Nigeria's foremost economists had the singular honour to deliver the premier Inaugural Lecture of the Delta State University, Abraka two decades and two years ago. In that lecture, Ekuerhare had adumbrated and I quote him:

..., Inaugural Lectures constitute attempts by Scholars of Professorial Status to highlight special human problems in the idiom, jargon and language of discourse for which their academic discipline are distinguished. In highlighting the special human problems of the human condition for which his academic discipline is distinguished, the Scholar hopes to share some of his concerns with the other Scholars, and secondly with the wider society. (Ekuerhare, 1997:1).

In my conception of some economic problems which afflict developing countries of Sub Saharan African are poverty, insecurity, unemployment and absence of wellbeing and happiness. These socioeconomic sins are well articulated in theories of economic growth and the anchor handles of fiscal policy, institutions and debt management. Researchers of economic science in the last six decades have addressed the active ingredients of economic growth and public debt. The seminal work of Solow (1956) on growth theory, referred to in this lecture as the Solow growth model, builds on the accepted Cobb-Douglas production function which incorporates labour, capital and technology (a shifter of the production function, but does not explain the pace and direction of technical progress). In its simple framework, the model contends that the proximate causes and the mechanics of economic growth and cross-country income differences result from

two paths: differences in total factor productivity (state of technology and workers' efficiency) and difference in quality of capital per worker across countries.

The model among other assumptions hypothesizes that savings is exogenously determined, and technology is free; publicly available as a non-excludable, non-rival good, and that technological state is labour augmenting or Harrod-neutral. Solow-style neoclassical growth model states that a country can be on a sustainable growth path by investing in research and development (R&D), and education. The Solow growth model focuses on how higher saving and investment affect long-run economic growth. In the short-run, higher saving and investment increase the rate of growth of national income. However, in contrast, higher saving and investment have no effect on the rate of growth in the long run (Georgiev, 2012).

III

The Basic Solow Growth Model

At the center of the Solow growth model is the neoclassical aggregate production function. The model focusses on four variables: output (Y), capital (K), labour (L), and "knowledge" or the "effective labour" (A). Solow assumes full employment of capital and labor. Given assumptions about population growth, saving, technology, and works out what happens as time passes. At any time, the economy has some amounts of capital, labour and knowledge, and these are combined to produce output. Consequently, the Solow growth model is (Romer, 2012) based on a production function that takes the form:

$$Y(t) = F(K(t), A(t)L(t)) \quad 1$$

where t denotes time

A look at Equation (1) shows that time does not enter the production function directly, but through K , L , and A . This implies that output changes over time only if the inputs to production change. If amount of output rises over time from given quantities of capital and labour, then, there is technological progress resulting from amount of increase in knowledge. Second, A and L

enter the equation in form of multiplication. AL is referred to as *effective labour*, and technological progress known in this case as *labour-augmenting* or *Harrod-neutral*.

In terms of empirical application of the Equation (1), we are more interested in the proximate determinants of growth, and indeed, establish by how much growth increases due to various factors of production, and how much of the changes result from other forces (e.g. debt, budget deficits, political factors, quality of institutions, etc.) which could be exogenous. The *growth accounting* framework pioneered by Abramovitz (1956) and Solow (1957) provides the collaring for this phenomenon.

From the production function related in Equation (1), the growth accounting implies:

$$\dot{Y}(t) = \frac{\delta Y(t)}{\delta K(t)} \dot{K}(t) + \frac{\delta Y(t)}{\delta L(t)} \dot{L}(t) + \frac{\delta Y(t)}{\delta A(t)} \dot{A}(t) \quad 2$$

where $\frac{\delta Y}{\delta L}$ and $\frac{\delta Y}{\delta A}$ denote $\left[\frac{\delta Y}{\delta(AL)} \right] A$ and $\left[\frac{\delta Y}{\delta(AL)} \right] L$, correspondingly. Dividing both sides of Equation (2) by $Y(t)$ produces

$$\begin{aligned} \frac{\dot{Y}(t)}{Y(t)} &= \frac{K(t)}{Y(t)} \frac{\delta Y(t)}{\delta K(t)} \frac{\dot{K}(t)}{K(t)} + \frac{L(t)}{Y(t)} \frac{\delta Y(t)}{\delta L(t)} \frac{\dot{L}(t)}{L(t)} + \frac{A(t)}{Y(t)} \frac{\delta Y(t)}{\delta A(t)} \frac{\dot{A}(t)}{A(t)} \\ &\equiv \alpha_k(t) \frac{\dot{K}(t)}{K(t)} + \alpha_L(t) \frac{\dot{L}(t)}{L(t)} + R(t) \end{aligned} \quad 3$$

where $\alpha_L(t)$ is the elasticity of output with respect to labour at time t , $\alpha_K(t)$ is the elasticity of output with respect to capital, and $R(t) \equiv \left[\frac{A(t)}{Y(t)} \right] \left[\frac{\delta Y(t)}{\delta A(t)} \right] \left[\frac{\dot{A}(t)}{A(t)} \right]$. Subtracting $\frac{\dot{L}(t)}{L(t)}$ from both sides and applying the fact that $\alpha_L(t) + \alpha_K(t) = 1$ produces an expression for the growth rate of output per worker:

$$\frac{\dot{Y}(t)}{Y(t)} - \frac{\dot{L}(t)}{L(t)} = \alpha_K(t) \left[\frac{\dot{K}(t)}{K(t)} - \frac{\dot{L}(t)}{L(t)} \right] + R(t) \quad 4$$

From Equation (4), we can easily measure the growth rates of Y , K and L . For instance, if capital earns its marginal product, α_k can be calculated using data on the share of income that goes to capital. $R(t)$ can thus, be invariably measured as the residual in Equation (4). Therefore, Equation (4) provides a system of decomposing the growth of output per worker into the contribution of

growth of capital per worker and a remaining a term, the *Solow residual*. The **Solow residual** is the portion of an economy's output growth that cannot be attributed to the accumulation of capital and labor, the factors of production. As the derivation shows, it is not only a measure of technological progress, it echoes in a way, all sources of growth other than the contribution of capital accumulation (Romer, 2012).

Growth Accounting has been used to extensively study many issues. For instance, it played a significant role in in the debate concerning the rapid growth that took place in East Asia. It has also been favourably argued in the literature that higher growth in those East Asia countries (four Dragons; Hong Kong, Singapore, South Korea and Taiwan) relative to rest of the globe was due to rise investment, increased labour force participation, improved labour quality in terms of quality education, and not necessarily as a result of technological progress or other forces of the Solow residual (Young, 1995). The lesson from this is that developing countries can replicate these successes by promoting capital accumulation of physical and human capital, and greater use of resources. What is omitted in this advice is that the East Asia countries that experienced rapid growth were also mostly led by benevolent dictators with vision; an argument that does not appeal to the West (Thrifty North) and Bretton Institutions.

A modest assumption of the Solow model is that the production function has constant returns to scale both in terms of capital and effective labour. Thus, doubling quantities of capital and effective labour, for instance, by doubling K and L , holding A constant, doubles the amount of output.

$$F(\varphi K, \varphi AL) = \varphi F(K, AL) \quad \text{for all } \varphi \geq 0 \quad 1a$$

The assumption of a constant return to scale provides for a nonnegative constant φ in the multiplication of the arguments that causes the amount produced to change by the same factor.

Suppose $\varphi = \frac{1}{AL}$ in Equation (1a),

$$F\left(\frac{K}{AL}, 1\right) = \frac{1}{AL} F(K, AL) \quad 1b$$

where $\frac{K}{AL}$ is the capital per unit of effective labour, and $\frac{F(K,AL)}{AL}$ is AL , output per unit of effective labour. Define $k = \frac{K}{AL}$, $y = \frac{Y}{AL}$, and $f(k) = F(k, 1)$. Equation (1b) can be rewritten as:

$$y = f(k) \tag{1c}$$

This implies that output per unit of effective labour can be written as a function of capital per unit of effective labour.

Nasa (2009), however, observes that growth is inevitably related to a country's indebtedness; just as the case of the four Asian Dragons. In an analogy of the individual and a country, Nasa relates that an individual can borrow in the early stage of his life in order to gain the necessary 'know how' i.e. human capital to enable him to earn his living in the later stage of his life and to repay the debt he incurred earlier. By the same token, a country needs resources in order to develop and grow. The country may be able to generate some domestically and may also need to look outside its borders and borrow from the international capital market. According to Nasa (2009: 8):

The Newly Industrialised Countries (NICs) or four Asian Dragons (Hong Kong, Singapore, South Korea and Taiwan) are an example of this borrowing phenomenon. These nations had huge foreign net inflows after the WWII. Taiwan and South Korea had a foreign debt-to-GDP ratio of around 9 percent during the 1970s. South Korea's indebtedness rose from \$301 million in 1965 to \$2.57 billion in 1970s. During this period, the country experienced high growth rate of its output. It is estimated that without this massive influx of foreign credit in the 1960s, Korea's output would have been two-third of what it was in 1971.

In contrast, Sub-Saharan African (SSA) countries that had similar patterns of international capital flow experienced severe debt servicing problems that made foreign debt become fungi to their growth and development. This raises the question of how and why debt helped the Asian Dragons whilst it failed in SSA countries. While the answer is a combination of economic factors; the political structure and process of SSA countries would have played more significant role.

In extensive form, one basic thrust of the Solow growth model is that every country reaches a steady state of capital accumulation depending on the level of capital stock at a specific point. The Solow model shows clearly how an economy's rate of saving and the level of investment conjointly determine its steady-state levels of capital and income, otherwise known as the golden rule of golden capital accumulation. The original Solow model is a closed-economy growth model in which exclusively, domestic saving (S) finances aggregate investment (I), ($S = I$), and in addition, the model assumes that labor-augmenting technical change is exogenous, which determines the equilibrium growth of per capita output. This makes for the ease of not incorporating the external sector into the model as the possibility of foreign investment flows into the economy is ignored. In an open economy model, a country can borrow money from abroad (external debt), as well as participate in international trade ($S \neq I$). As such, the aggregate demand equation which incorporates the external sector can be written as:

$$Y = C + I + G + (X - M) \quad 5$$

where Y is income/output, C is consumption, I is investment, G is government expenditure and $(X-M)$ is net exports. In the above relation, changes between savings and investments is represented as:

$$S = I + CA \quad 6$$

where CA is current account, and S and I as earlier defined. Rearranging the identity related in Equation (6):

$$S - I = CA \quad 7$$

The identity in Equation (7) implies that if savings are greater than Investments in the economy, a surplus in the current account is recorded. The current account is made up of trade balance (net exports, NX), factor payments (interest and dividends) and net transfer payments (foreign aids). For purposes of simplification, $CA = NX$ (Blanchard, 2009; Georgiev, 2012). From the identity of Equation (5) of an open economy:

$$\left. \begin{aligned} Y &= C + I + G + X - M \\ Y - C - G &= I + NX \\ S &= I + NX \end{aligned} \right\}$$

Solow-Swan Model

Recall the standard model from Equation (4) which assumes that labor-augmenting technical change is exogenous and determines the equilibrium growth of per capita output. Equation (4) as earlier noted is a closed economy growth model in which domestic saving finances aggregate investment (Equation 7). In the Solow-Swan Model, the production function is combined with a constant savings rate to predict long term growth, and this occurs through capital accumulation. The Solow-Swan (S-S) model shows how growth in capital stock (Km) and labour (L) affect economic growth (Y). The S-S model assumes that there is diminishing marginal returns for labour and capital considered separately as inputs and constant returns to scale when taken together (Essays, 2018).

Since the emergence of the Solow-Swan (1956) model, two major developments have surfaced. First, technical change was made partly endogenous and partly exogenous in the closed-economy model. The second development opened the model to global capital markets. The view here is that aggregate capital stock is derived as the accumulated sum of domestic saving and net external borrowing or the current account deficit (Villanueva and Mariano, 2007). It is posited here that at any moment of time, the proportionate rate of change in the external debt-capital ratio is determined by the difference between the expected marginal product of capital, net of depreciation, and the marginal cost of funds in the international capital market. It is through this process that the external debt enters the augmented S-S growth model.

Public Debt and Output in the Augmented S-S Growth Model

There are many channels through which public debt might affect economic output either positively or negatively. The most frequently cited negative effect is the crowding out of private investments and a further adverse effect is macroeconomic vulnerability (Dombi and Dedák, 2018). The positive effects are determined by the ability of expansionary fiscal policy to mitigate actual rate and the natural rate of unemployment during recessions (DeLong and Summers 2012). Consequently, understanding the complex relationship between public debt and

economic growth is very important, just as the how external debt and deficits impact on money supply and inflation.

The Extended Model Our model can be summarized as follows:

Assuming a fixed-coefficient technology (or a well-behaved neoclassical production function in a scenario of fixed real wages), the growth-cum-debt model illustrated by Solis and Zedillo (1985) and applied by Ajayi (1991) can be stated

The level of output is given by:

$$Y_t = \sigma K_t \quad 9$$

Given that

$$Y_t - Y_{t-1} = \sigma(K_t - K_{t-1})$$

or

$$\Delta Y_t = \sigma(\Delta K_t) \quad 10$$

$$K_t - K_{t-1} = I_t - \delta K_{t-1} \quad 11$$

Equation (9) becomes

$$Y_t = \sigma I_t + (1 - \delta)Y_{t-1} \quad 12$$

Given the following identities:

$$C_t + I_t + X_t - M_t = Y_t = C_t + S_t + r_t D_{t-1} \quad 13$$

and

$$d_t = M_t - X_t + r_t D_{t-1} \quad 14$$

consequently,

$$I_t = S_t + d_t \quad 15$$

Let the saving function be

$$S_t = s(Y_t - r_t D_{t-1}) \quad 16$$

Using Equation (12), investment can be expressed as

$$I_t = \left[\frac{s(1-\delta)}{1-s\sigma} \right] Y_{t-1} - \left(\frac{sr_t}{1-s\sigma} \right) D_{t-1} + \left(\frac{1}{1-s\sigma} \right) d_t \quad 17$$

$$I_t = \left[\frac{s(1-\delta)}{1-s\sigma} \right] Y_{t-1} - \left(\frac{sr_t}{1-s\sigma} \right) D_{t-1} + \left(\frac{1}{1-s\sigma} \right) dt \quad 18$$

$$I_t + \left(\frac{sr_t}{1-s\sigma}\right) D_{t-1} - \left(\frac{1}{1-s\sigma}\right) dt = \left[\frac{s(1-\delta)}{1-s\sigma}\right] Y_{t-1} \quad 19$$

Multiplying through by $\left[\frac{1-s\sigma}{s(1-\delta)}\right]$

$$Y_{t-1} = \left[\frac{1-s\sigma}{s(1-\delta)}\right] I_t + \left(\frac{sr_t}{s(1-\delta)}\right) D_{t-1} - \left(\frac{1}{s(1-\delta)}\right) dt \quad 20$$

Iterating forward by one period

$$Y_t = \left[\frac{1-s\sigma}{s(1-\delta)}\right] I_{t+1} + \left(\frac{sr_t}{s(1-\delta)}\right) D_t - \left(\frac{1}{s(1-\delta)}\right) t \quad 21$$

Equations (12) and (17) can be solved for several possible paths of D_t and r_t . The rule applied in the dynamic equation (Ajayi, 1991):

$$D_t = D_{t-1}(1+\gamma) \quad 22$$

From Equations 13 – 16, we note that Y or GDP equals domestic consumption plus domestic savings; and this equally follows that the demand for domestic investment equals domestic savings and the import balance on the current account which is financed by net borrowing from abroad ($M - X$) or net foreign borrowing. Equation 21 relates the impact of external debt on current economic growth or output.

Why does external debt tend to increase rapidly? According to Chenery and Strout (1966) two gap model, in developing countries apart from saving gap they face, there is also foreign exchange constraint (gap) required for importation of capital goods. Consequently, foreign aid or international capital is required to provide capital funds for the importations of capital goods, and this accounts for the net external borrowing in the basic transfer model.

Mathematically, the net external borrowing (BT) is measured as the difference between net capital inflow (gross capital minus amortization on the past debt) and interest payments on remaining accumulated foreign debt or simply put, it is disbursements minus amortization payments (Loser, 1977).

$$BT = (d - r)D \quad 23$$

$$(D_t - D_{t-1}) = Y_t - rD_t - C_t - I_t - G_t \quad 24$$

where $D_t - D_{t-1}$ is net change in debt from period t to period $t + 1$, G_t is Government expenditure at time t ; other variables as previously defined.

In Equation (24), debt stock in period t will reduce by increase in the country's GNP or output and a reduction in Consumption, Investment and Government expenditure. "The failure of a country to do a period-to-period flow analysis and to reach the level where the sum of GNP, consumption, domestic investment and government expenditure is less than BT (*net external borrowing*) will lead to a debt crisis" (Adegbite, et.al. 2008:292):

$$C_t + I_t + G_t - Y_t < dD_t - rD_t \quad 25$$

Note that $dD_t - rD_t = (d - r)D_t = BT_t$

External Debt-Growth Dynamics

The regression models analyzed in this lecture take the form of the Solow- neoclassical growth model. Models of external debt-growth dynamics, which analyzed two variants: a simple macroeconomic debt growth model and an investment-debt model as employed by Ajayi (1996), lyoha, (1996) and Were (2001) were adopted with some modifications.

$$RGDP_t = \delta_0 + \delta_1 DBS_t + \delta_2 DER_t + \delta_3 INF_t + \delta_4 INTR_t + \delta_5 PRINV_t + \delta_6 TRDOPN_t + \varepsilon_t \quad 26$$

where $RGDP_t$ is real gross domestic product, DER_t is the ratio of external debt stock to GDP and DBS_t is the ratio of external debt servicing to exports. INF_t is inflation rate, while $INTR_t$ is interest rate and $PRINV_t$ is private investment. $TRDOPN_t$ is a measure of trade openness (computed as the sum of imports and exports ratio to GDP), $\delta_1, \delta_2, \delta_3, \delta_4, \delta_5, \delta_6$ represents coefficients; ε_t = the error term; and t represents time period.

Debt overhang, crowding-out and simulation

The debt growth model can also analyze the impact of sovereign debt indicators on output growth (debt overhang effect) and crowding-out effect of debt on private investment.

$$GDP_{gwth} = \sigma_0 + \sigma_1 L_B + \sigma_2 PCI + \varepsilon_t \quad 27$$

$$PCI = \theta_0 + \theta_1 INT + \theta_2 GDP_{gwth} + \theta_3 EXDR + \theta_4 EDS + \mu_t \quad 28$$

where ε_t and μ_t are stochastic error terms. In the system of equations, there are two endogenous variables, the log of GDP and the log of per capita investment. The other exogenous variables include the log of labour, interest rate, stock of external debt and external debt service. If there is debt overhang, we expect the external debt burden indicators included in the model to be negative.

To appropriately make an explicit allowance for interaction between external debt and economic growth, simultaneous equations model that holds output equation and investment demand function are considered as a system of simultaneous equations (Iyoha, 1999). Arising from this, policy simulations (using alternative debt stock reduction scenarios) will be analyzed.

Laffer curve

The debt-growth model in the course of capturing the overhang effect, it also accounts for nonlinearity impact of debt (Laffer curve). An existence of an established ‘Laffer curve’ explores relationship of how debt contributes to economic growth up to a certain point (maximal threshold), and then starts to have negative effect on growth afterward (Megersa, 2014).

In considering the typical debt-growth dynamics as adopted in Equation (26), the model can be further augmented to reflect the non-linearity impact of debt and other control variables:

$$RGDP_t = \alpha + \gamma DER_t + \phi f DER_t + \tau z_t + \varepsilon_t \quad 29$$

Following an augmented modified stipulation of Equation (26), $RGDP_t$ and DER_t are as earlier defined, z represents a set of control variables (ratio of external debt servicing to exports, inflation rate, interest rate and private investment, and trade openness). Based on the γ and ϕ parameters, function f formulates Equation (29) as a bell-shaped relationship that can be applied to estimate the Laffer curve.

Net external borrowing, money stock and inflation

In the absence of a monetary policy intervention by the Central Bank (which makes monetary decisions independently) as illustrated in Equation 8, G must be obtained through government borrowing, or debt. According to the literature, increased government borrowing that reduces

net exports (generated by borrowing from foreign sources) represents an expansion of the short-term money supply, as money is brought into the economy at the expense of future stock of money (as foreign borrowing is repaid). Such a fiscal expansion on the one hand, increases the quantity of money demanded, which drives up interest rates or cost of borrowing (Congressional Research Service, 2019) and on the other hand, inflation through a second Equation (30) illustrates this:

$$\dot{M}_2 = f\left(\dot{M}_2^e, \frac{FD}{Y_t}\right) \quad 30$$

where \dot{M}_2 = rate of change of money supply in the current period, \dot{M}_2^e = rate of change of expected money supply in the current period, FD = nominal fiscal deficit in the current period, and Y_t = nominal GDP in the current period. From Equation 30, the growth rate of money stock is assumed to depend on the growth rate of the expected money stock as predicted by lagged variables which affect the behavior of monetary authorities and government fiscal deficit (Kolluri, Bharat & Demetrios, 1987). Based on some theoretical premise, it is assumed that the monetary authorities or the central bank can respond to increase in external debt through sterilization.

Macroeconomic Approach to External Debt Estimation

In the last two decades, new endogenous growth models have extended the Solow's neoclassical growth model which exhibit diminishing returns to capital and labor separately and constant returns to both factors jointly, and that left technological progress as a residual (Öztürkler and Bozgeyik, 2014). The new wave of notable contributions to economic growth theory was stimulated by Romer (1986) and Lucas (1988). Their works following Uzawa (1965), rely on Arrow's (1962) contrivance of learning-by-doing. Specifically, in Romer (1986)'s analysis, knowledge through investment in research and development, technological advancement and education lead to increasing marginal productivity so that per capita income can continue to grow and return to capital may continue to increase. Romer adopts the idea of endogenous growth of the economy on an effective sustainable long-term growth path. This implies that economic advancement can occur from within the economy without external influence.

Lucas (1988) augmented the neoclassical Solow's model by adding human capital to capture the effect of education and acquired skills on productivity. Lucas considered and compared three patterns of growth against the evidence: a model that emphasized physical capital accumulation and technological change, a second model which highlights human capital accumulation through schooling, and a model that underscored specialized human capital accumulation through learning-by-doing. Lucas argues that there are two types of capital: physical capital in the form of machines, buildings and resources and human capital in form of highly skilled and educated workers.

Since the inclusion of human capital to the growth model, series of empirical studies have been carried out and notable among these are Romer, Mankiw and Weil (1992), Stiglitz and Hoff (2000); Faruqee, H. (2003); Eberhardt and Presbitero (2015); Dombi and Dedák (2018); and de Mauro and Turne (2018). Mankiw, Romer and Weil (1992) augmented the Solow model by including accumulation of human capital as well as physical capital. The findings show that not only did the augmented model fits better with the data, accumulation of human capital is correlated with saving and population growth. Hoff and Stiglitz (2000) extended the Solow model by incorporating other key determinants of economic growth by focusing on institutions, culture, government, rule of law, and non – market institutions among others. They posit that these factors are important in influencing economic output and that the key role of governments be strongly emphasized particularly in their ability to manage debt.

Dombi and Dedák (2018) quantified the crowding-out effect of public debt and the related loss in long-run output in neoclassical growth sense. The results show that public debt reduces long-run output in the Solow model, although to some extent as the crowding-out effect of physical capital is marginal. A second finding of Dombi and Dedák is that the burden of public debt is country-specific depending crucially on the saving rate and the population growth rate. However, does capital necessarily flow to the impecunious south as the external debt seem to portend?

Capital Flows and Investments

A long-standing debate in the literature that has dominated financial economics is the pattern of international capital flows. While it is trite that scarcity creates value and as such, scarce

resources should ordinarily attract higher rates of return (or marginal product), where it is rarer, Lucas (1990) wondered why capital does not flow from North (developed countries) to South (developing countries) where it is scarcer (Wang, Wen, Xhu, 2012).

The standard neoclassical model had rather argued that capital normally flows from countries that have relatively high capital-to-labor ratios, to countries that have relatively low ratios or low household saving. Consequently, it is expected that savings should flow from rich to poor countries. Lucas (1990), however, contended that at no time has the flow of savings from developed countries to developing countries come close to the levels predicted by neoclassical theory. Why? The reason is because in underdeveloped credit markets, rate of returns to fixed capital (portfolio investment) can be abnormally high, but rate of returns to financial capital is excessively low.

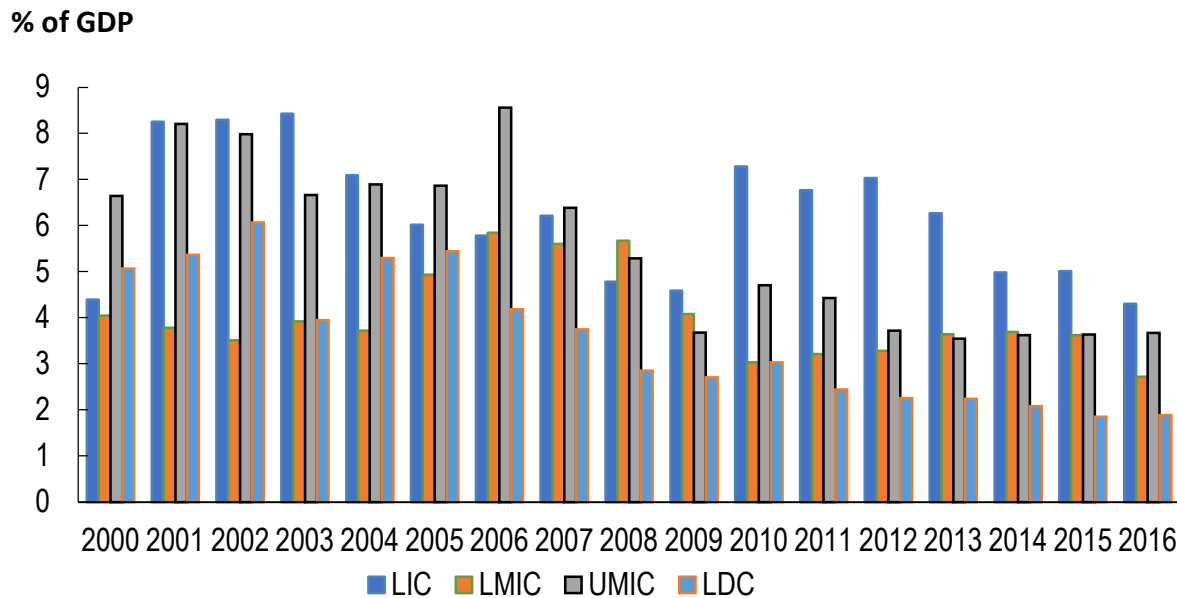
Mainstream economics on the “reversed capital flow” puzzle, instead, posits that the rate of return to capital in developing economies is lower (rather than higher) because of a savings glut (Bernanke, 2005). Hence, capital moves in the reversed direction from South to North. While the debate is inconclusive and on-going, most African countries still depend on official finance in form of bilateral and multilateral creditors as they have little or no access to international private capital to finance their development objectives.

In the mid-decades of 2000, precisely up till 2005, increased private investment flows to developing countries (see Figure 2) was recorded. The relative increase was largely accounted for by declining foreign direct investment and to some extent, long-term debt (Figure 3). The private sector provided the bulk of the external finance, however, with the decline in foreign direct investment above 11 % over 2015-2016 as shown in Figure 3, the contribution of remittances to gross cross border financing started taking a leading contribution on a year on year basis, though not proportionately. Increased remittance inflows have economic implications for developing countries; first, it reflects their tedious access to international markets; second, increased private remittances at the individual and family levels, provide economic life line; third, remittances are more stable than both private debt and portfolio equity flows, and several times larger than

international development aid (OECD, Global Outlook on Financing for Sustainable Development, 2019).

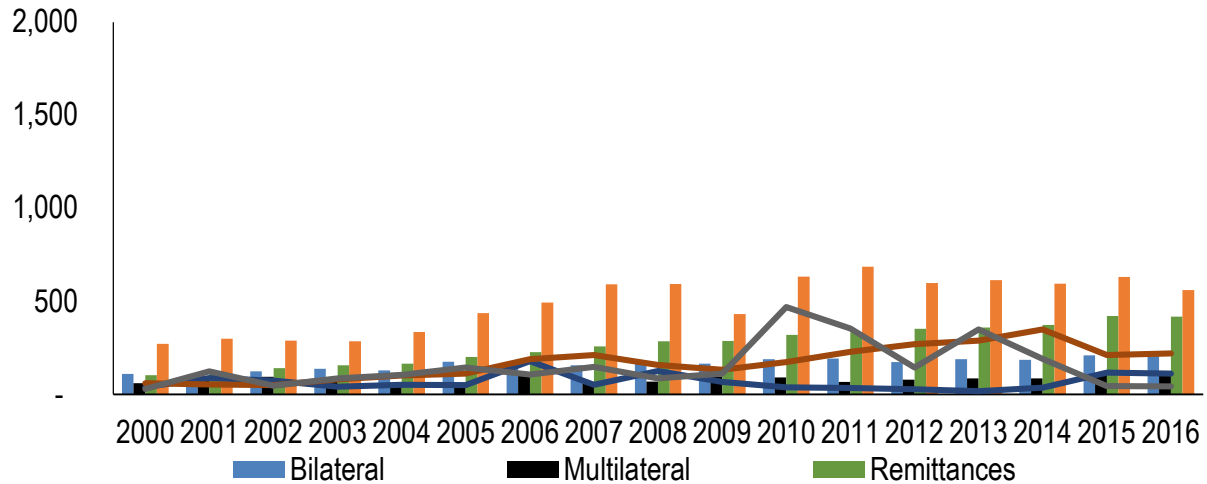
Relative to global declines, the trend of declines in FDI inflows by group of economies is not different, although the narratives and magnitude are. In Africa, specific determinants of FDI vary from country to country, however, availability of natural resources remains a significant determinant of FDI (Obwona, 2004). Global FDI flows declined by 23 per cent in 2017 to \$1.43 trillion from a revised \$1.87 trillion in 2016, while African economies experienced a significant reduction by 21 per cent (\$42 billion in 2017 from \$53 billion in 2016) in their FDI inflows (Figure 4). Very worrisome is the depiction that developing economies, excluding Africa, accounted for 36 per cent and 47 per cent share of global FDI inflows in 2016 and 2017 respectively (UNCTAD, 2019).

Figure 2 Private investment inflows as a share of GDP in developing countries



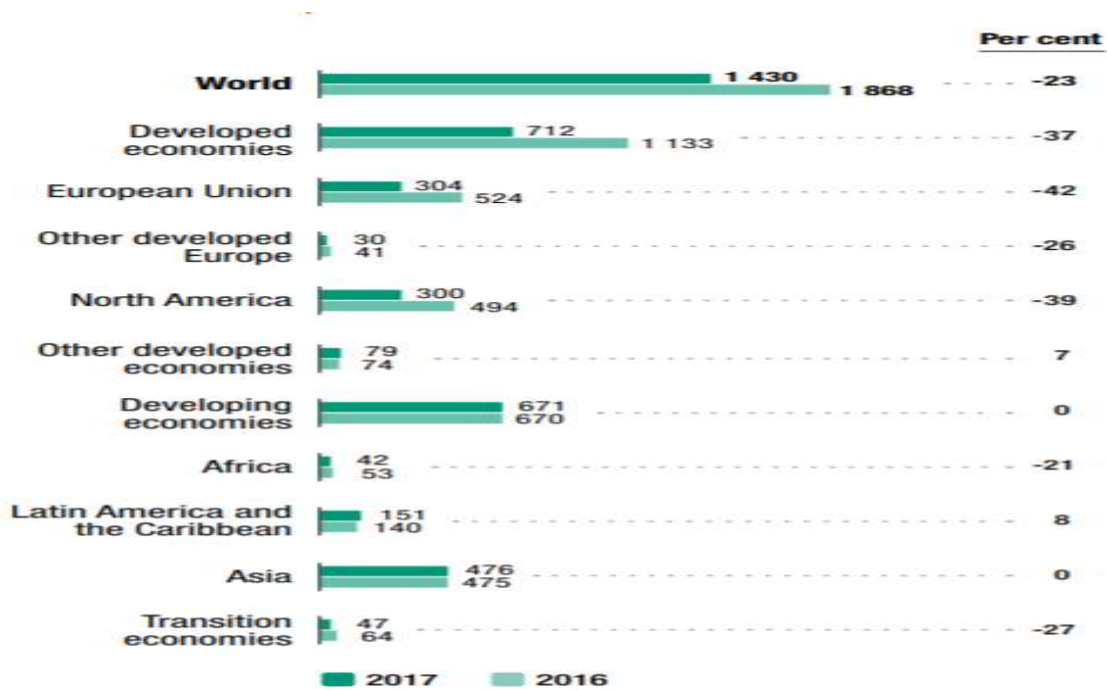
Source: IMF (2017), Balance of Payments database, <http://www.imf.org/external/datamapper/datasets/BOP>; IMF (2018), World Economic Outlook database, <https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/index.aspx>.
LIC = Low-Income-Countries; LMIC = Low-and Middle-Income-Countries; UMIC = Upper-Middle-Income Countries; LDC = Least-Developed-Countries

Figure 3. Cross-border (External) finance to developing countries, 2000-16 2016 USD billions, constant prices



Source: OECD calculations based on OECD (2018), Creditor Reporting System (database), <https://stats.oecd.org/Index.aspx?DataSetCode=crs1>; World Bank (2018), Remittances Data <http://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/migration-remittances-data>; IMF (2017), Balance of Payments database, <http://www.imf.org/external/datamapper/datasets/BOP>

Figure 4. FDI inflows by Region, 2016 -2017 (billions of dollars and percent)



Source: UNCTAD, FDI/MNE database (www.unctad.org/fdistatistics).

The data on FDI inward rates of return in the region from 2012 through 2017 as presented in Table 1 show that global rate of return on inward FDI declined steadily to 6.7 per cent in 2017 from 8.1 per cent recorded in 2012. As for developed economies, the rates of return trended

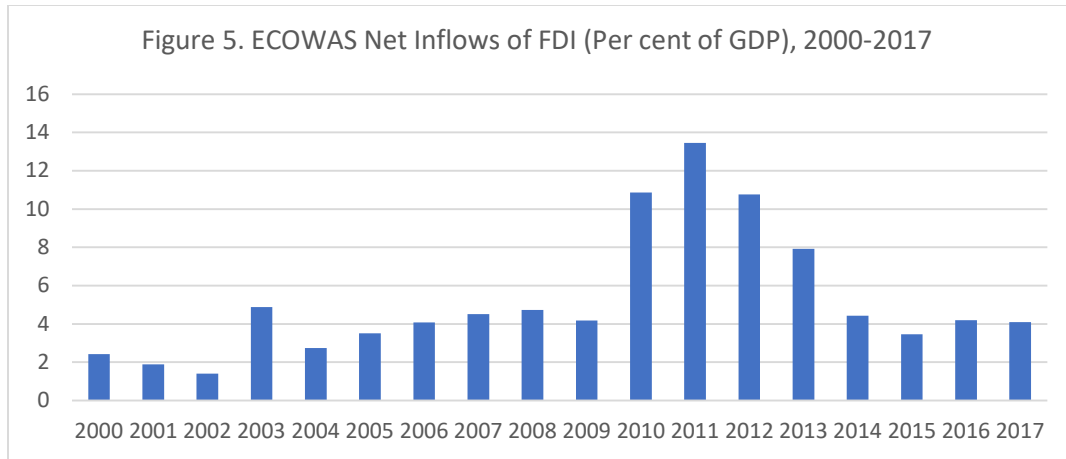
downward over the period albeit marginally, then stabilized at some points, while the rates in transition economies remained higher on the average. However, for Africa, the return on investment declined significantly from 12.3 per cent in 2012 to 6.3 per cent in 2017, reaching a low level of 5.4 per cent in 2016. One reason adduced for the relatively sharp decline was partly the fall in commodity prices during the period, which suggests that structural factors, in the form of fiscal deficits, labour cost, arbitrage opportunities in international operations, may have been at work (World Investment Report, 2018: 3). For West African economies as Figure 5 depicts, net inflows of FDI have been on a steady decline since 2012. The reason for the deterioration may not necessarily have been because of the low ratio of capital to labour, nor low household savings, but probably because there was a global decline in the flow of capital or a loss in relative attractiveness. The loss in relative attractiveness would have been engendered by weak and epileptic infrastructure, illicit financial outflows, coupled with corruption and unimpressive performance of the economy, as seen in sluggish economic growth rates. For instance, earlier this year (2019), the Nigeria Extractive Industries Transparency Initiative (NEITI) and Trust Africa reported that Nigeria loses between \$15b billion and \$18b yearly to illicit financial flow, and over 92 per cent of the crime is reportedly committed in the oil and gas sector, aided by the elites, government officials, multinational companies and modern technologies (Jeremiah, 2019).

Table 1. Inward FDI Rates of Return, 2012-2017 (Per cent)

Region	2012	2013	2014	2015	2016	2017
World	8.1	7.8	7.9	6.8	7.0	6.7
Developed economies	6.7	6.3	6.6	5.7	6.2	5.7
Developing economies	10.0	9.8	9.5	8.5	8.1	8.0
Africa	12.3	12.4	10.6	7.1	5.4	6.3
Asia	10.5	10.8	10.6	9.9	9.5	9.1
East and South-East Asia	11.5	11.8	11.7	11.0	10.3	10.1
South Asia	7.2	6.7	6.1	5.5	6.4	5.7
West Asia	5.5	5.4	4.9	4.6	4.6	3.4
Latin America and the Caribbean	7.9	6.7	6.6	5.2	5.3	5.6
Transition economies	14.4	13.9	14.6	10.2	11.1	11.8

Source: UNCTAD based on data from IMF Balance of Payments database.

Note: Annual rates of return are measured as annual FDI income for year t divided by the average of the end-of-year FDI positions for years t and $t - 1$ at book values.



Highlights of the 2019 publication based on research for the year 2015 using the Direction of Trade Statistics dataset from the IMF show that the top quintile (30) of countries, ranked by dollar value of illicit outflows, are resource rich countries such as South Africa (\$10.2 billion) and Nigeria (\$8.3 billion). Among European and Latin American countries, the following countries reported illicit dollar outflows: Turkey (\$8.4 billion), Hungary (\$6.5 billion) and Poland (\$3.1 billion), Mexico (\$42.9 billion), Brazil (\$12.2 billion), Colombia (\$7.4 billion) and Chile (\$4.1 billion). Accordingly, the high leakages associated with IFFs from developing resource rich countries, cannot be downplayed in the political economy of these economies.

Copley (2018) noted that nearly \$50 billion a year are estimated to leave African continent illicitly. It is further estimated that the illicit outflows from two West African countries, namely, Togo and Liberia, respectively stood roughly at equivalent of 94 percent and 83 percent of their total trade over the period 2005 to 2014.

If the estimated annual \$50 billion illegal outflows from the continent annually is compared to FDI inflows of 2016 and 2017 as represented in Figure 4, for instance, then the Lucas (1990) contention that nowhere does the flow of savings from developed countries to developing countries near the levels predicted by neoclassical theory, is thus, affirmed. Consequently, behind the illicit financial outflows that partly necessitate the pains to carelessly borrow internally and externally, is a red herring of structural factors that engender outflows of household savings (financial capital) from developing countries (South), which culminates into scarcity of domestic capital for development in the face of declining FDI inflows.

To promote FDI inflows to Africa and particularly, the ECOWAS region and Nigeria, there is need for a comprehensive policy coordination of a wide range of policy choices. In this connection, it is imperative that the region addresses the issues of insecurity, policy inconsistency, infrastructural deficits (human and physical), corruption, shallow financial markets and systems as well as promote ICT development to aid information flow among others. In addition, there is need to put in place functional contractual legal frameworks and to initiate policies that promote competition.

External Debt and Economic Development in Nigeria

Since Nigeria gained political independence from the British on 1st October 1960 and on becoming a Republic in 1963, the history of its economic growth has always been a checkered one. The period from independence in 1960 to 1974, was when the country's economic growth was most rapid. GDP grew at an average of 5.90 per cent despite the two coup d'états of 1966 (which began on 15 January 1966) and the civil war of 1967-70 (which ended 15 January 1970). A cursory look at the data reveal that the unfortunate incidences of the coups and civil war pushed the economy into a depression in 1966 (-4.25 per cent) and 1967 (-15.74 per cent). The Nigerian economy, however, grew at unprecedented rates of approximately 24.2 percent in 1969, 25 percent and 14.2 percent in 1970 and 1971 respectively (The World Bank, 2019) and external debt was not an issue.

A consideration of the commonly used debt burden indicators in Table 1 shows that external debt service ratio (debt service, percent of exports of goods, services and primary income) in the 1970s up to 1980 was very low (single digit) to provoke any concern when contrasted with other African countries whose debt average was 10 percent in 1972 (Were, 2001).

Table 2 illustrates five key indicators and which four have critical values (the numbers in parentheses) reported: debt-to-GNI ratio (50 percent), debt-to-exports ratio (275 per cent), debt-service ratio (30 percent) and interest-to-export ratio (20 percent). Since 1988 till date, the reported ratios show that they are below the critical points, except in 2005, when the export-to-GNI ratio has a ratio above the critical value. The debt-to-export ratio was above the critical value in 1998, while debt service-to-export showed that it was only for the period 1984 to 1986 was

the ratio above its critical value of 30 percent. The interest-to-exports ratio also fell below its critical value of 20 percent all through but for the year 1988.

Generally, the indicators show that since 2005, the country's debt burden indicators have been declining, probably due to the debt cancellation, however, GDP growth rate has remained below a double digit, most often under 7 percent, just as the huge transfers have been alarming. The inference from this is that resources that could have been deployed to develop human capital (education, skills and health) and technological widening (innovation and R & D) are rather transferred abroad. This has implications for investment and economic growth.

On the revenue side, the oil price shocks of 1973-74 and 1979 created unexpected and unplanned wealth for Nigeria and this caused a shift in the composition in the structure of the country's Balance of Payments. Oil became a catalyst of the economy and this resulted in increased public expenditure, as well as access to international capital markets. The agricultural sector which contributed about 64 percent of GDP at independence declined sharply to an all-time low of about 17 percent in 1982. Nigeria turned into a perennial net importer as evidence of "Dutch disease" emerged. Following the collapse of oil prices in 1982, and the rise in real interest rates, government resulted to heavy borrowing. Domestic absorption exceeded GDP and national disposable income. This reflected in current account deficits which arose in 1976-78 and 1981-83 (Pinto, 1987; Ajayi, 1991; Adedipe, 2004; Omotor, 2004; Omotor 2007; Omotor, Orubu and Inoni, 2009). External reserves collapsed, fiscal deficits mounted, and external borrowing ensued with the "jumbo loans" taken in 1979. The external debt grew by 64.5 per cent in 1973 from the previous year and to 135.2 per cent in 1977 (Table 3). The growth rate decelerated to -5.76 per cent in 1978 as the economy slid into recession.

Although it has been argued in some quarters that the transient nature of the oil boom in Nigeria was unforeseen during the first episode of 1973-74, and hence the government indulged in expenditure spree. The economy did not fare better with the second sharp oil price increases experienced in 1979-80. The oil revenues provided the basis for the significant increases in government expenditure designed to expand infrastructure and indeed, increased productive capacity of non-oil sector. According to Bienen (1983:2), the oil revenues

“not only provided government with financial resources to undertake new programmes and projects, but they affected the very institutions which were to make policy and the nature of centralization of authority and decision making in Nigeria”.

Some of the projects undertaken by the government were without adequate attention in terms of economic viability just as the government lacked the executive capacity to handle them (Tallroth, 1987; Ajayi, 2003).

On sectoral composition, Nigeria’s manufacturing development strategy depended profoundly on external sector by way of capital-intensive technology and assembly-type industries that depended more on imported inputs. Agriculture was neglected as the sector’s exports fell, the country’s currency, the naira, appreciated. In attempt by the government to curb inflation, imported consumer goods became relatively cheaper in domestic markets, and with the heavy dependence on oil export, Nigeria assiduously became (and still is) a monoprodukt economy (Ajayi, 1991; Omotor, 2009; Omotor, 2010).

In 1979, there was a new political order with a new constitutional system that ushered in a civilian regime. Unfortunately, the petro-dollar was short-lived in the 1980s and earnings from oil declined sharply. Some of the macroeconomic policy formulated by the government, coupled with a tariff protection and import licensing were not the right mix as the policies combined austerity with adjustment. Between 1981 and 1983, the Nigerian economy, again slid into a recession and external debt grew by over 50 per cent between 1985 and 1987 (see Tables 2 and 3). At the international loans markets, there was increase in interest rates which raised debt service charges. Consequently, there was a decrease in net transfers on debt, being negative in 1982, 1984 and 1985, and this continued from 1989 to 2006 (see Table 2). Capital outflows (capital transfers) to foreign creditors have serious implications on the economy. This includes sell off its assets to pay its creditors and debt repudiation.

It was argued that the occurrence of capital flight severely constrained the development of the economy that was already burdened by debt and poor economic performance. The Nigerian government did not believe the genuineness of the debts as it suspected serious accounting

problems with some of the debt transactions. In its 1986 budget statement for instance, the government observed thus:

In respect of the external debt management, Government affirms its readiness to honour its obligations to clearly established creditors, consistent with available foreign exchange resources accruing to the country and with the dictates of national survival. In this respect, Government has decided that no more than 30 percent of such resources will be taken up in 1986 for external servicing. We believe that this is the realistic estimate considering recent revelations in the JMB affair and the foreign exchange scandals with the implication that not all purported external debts would eventually be certified (Federal Republic of Nigeria, 1986, p. xi).

The obvious is that there was also loss of capital through mis-invoicing of trade documents that ballooned the debt size, interest payments and net capital transfers. Not ruled out is the likelihood of *round-tripping transactions* which is at worst disingenuous and a possibility of *quid pro quo*. Most of the borrowed funds either never arrived or did not remain in the shores of Nigeria for the purposes they were meant for, and this was buttressed by Ajayi (1992:3):

Traditionally, capital flows from developing to developed countries apart from those necessitated by normal business transactions are considered perverse and economically unsound. The resurgence of interest in capital flight in recent times is dictated by the exigencies of the period which is related to the paradoxical situation of high accumulation of external debt by developing countries on the one hand and the acquisition of foreign assets by the citizens of the heavily indebted developing countries on the other.

To further confirm this position of round-tripping of the borrowed funds and the culpability of the thrifty north, Gulati (1988: 1) opined:

It comes in false-bottomed suitcases or in electronic funds transfers from private banking services that cater to "high-net worth individuals". It may take the form of Kruggerrands stashed inside hollowed-out sculptures or moved via fake invoices approved by corrupt customs officers. Its destinations range from banks in Zurich, Miami or the Cayman Islands to co-op apartments in New York or condos in San Diego.

It is flight capital, “the great unspoken issue” in discussions of third world debt... Indeed, the cascade of capital that has flowed from developing countries is a key element in keeping third world debt lingering crisis. The economic and, political hazards will hang like the sword of Damocles....

Further corroborating the *round tripping transaction* nature of the Nigerian debts and indeed Sub-Saharan African countries’ debt, far back in 1996, Richard Akinjide *CJN*, a onetime Judge of the International Court in the Hague, wrote in the weekly *Newswatch*:

The efforts undertaken by the Bretton Woods institutions to justify their policy towards developing countries have failed. The arrogance with which these failed policies were defended constitute an insult to us and shows the level of their contempt ... The tragedy is that many countries in sub-Saharan Africa are yet to be free. Most of the countries depend on international aid like Ghana which is economically dependent. A dependent economy is an economy in chains and can only serve donors.

...Nigeria paid more than ten billion dollars on capital borrowing and interest, each payment lost in an ocean of recycled and rescheduled interests (cited in Chevillard, 2001).

In 1996 the Federal Government ordered an appraisal study of all the projects financed with external loans taken by Federal and State Governments. The report of the appraisal showed that most of the supposed target projects were non-functional; some were either never started or were abandoned before completion. Several of the completed projects were shut down after a short period of operation or were being operated with government subsidies. Few of the projects that were reasonably functional, faced operational problems related to lack of working capital, foreign spare parts, and competition from cheap imports. About 65 percent of the projects which accounted for approximately 76 percent of the funds loaned to the governments had failed, due to a variety of reasons. Six projects, ranging in value from \$6 million to \$70 million were fraudulent (Okonjo-Iweala, 2003 see Figure 6 and Table 4).

In the days of the oil boom, utilization of the receipts earmarked for funding some laudable public projects in Nigeria was characterized by political corruption and a paradox of high accumulation of debt by Nigeria on the one hand, and acquisition of foreign assets by a very few public office

holders. Loans were contracted without paying enough regard to the economic viability of the projects or repayment capacity. Notably, there were overly expansionary fiscal measures, lack of fiscal discipline and extra budgetary expenditure (Musa, 2019; Omotor and Musa, 2019). A flagrant display of political tyranny over economic wisdom.

Figure 6. Status of Projects Financed by Foreign Loans in 1996

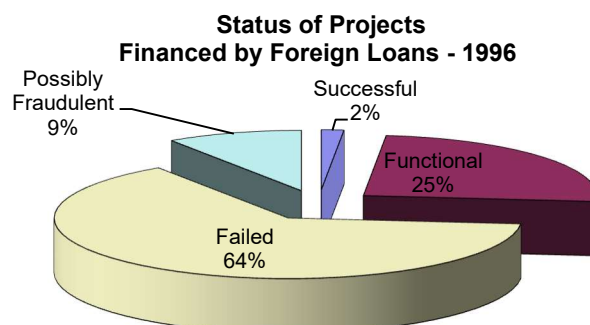


Table 2 Nigeria's Debt Burden and Real GDP Growth Rate (per cent)

Year	EDT/GNI	EDT/XGS	TDS/XGS	INT/GNI	INT/XGS	GDP growth rate
1977	8.82	23.68	1.04	0.15	0.39	6.02
1978	13.99	43.86	1.28	0.18	0.57	-5.76
1979	13.30	34.65	2.17	0.55	1.43	6.76
1980	14.63	32.20	4.15	1.49	3.27	4.20
1981	19.23	58.78	9.20	1.94	5.93	-13.13
1982	23.83	93.09	16.23	2.48	9.69	-6.80
1983	50.54	161.77	23.61	4.05	12.98	-10.92
1984	64.16	144.03	32.94	6.99	15.70	-1.12
1985	66.98	138.08	32.78	6.18	12.74	5.91
1986	115.12	412.07	38.04	4.18	14.97	0.06
1987	133.77	370.70	14.13	2.98	8.27	3.20
1988	130.15	406.95	30.37	6.67	20.86	7.33
1989	136.02	351.26	24.69	6.82	17.61	1.92
1990	120.05	226.66	22.60	7.73	14.60	11.78
1991	134.45	251.12	22.06	8.35	15.60	0.36
1992	110.12	223.23	18.57	7.10	14.39	4.63
1993	228.37	275.82	13.40	6.78	8.19	-2.04
1994	210.33	334.99	18.95	7.15	11.39	-1.81
1995	129.51	274.01	14.73	3.47	7.35	-0.07
1996	95.90	185.18	13.14	3.33	6.43	4.20
1997	84.76	175.16	8.71	1.72	3.55	2.94
1998	103.89	297.55	13.07	1.91	5.48	2.58

1999	84.59	206.42	7.61	1.36	3.31	0.58
2000	80.46	152.83	8.76	1.90	3.60	5.02
2001	78.46	158.33	12.72	2.02	4.08	5.92
2002	59.94	173.46	8.06	0.62	1.79	15.33
2003	61.19	133.35	5.93	0.69	1.50	7.35
2004	51.16	104.28	4.47	0.70	1.43	9.25
2005	26.05	45.07	15.41	5.00	8.65	6.44
2006	6.83	15.74	10.98	0.19	0.44	6.06
2007	7.86	17.33	1.44	0.06	0.14	6.59
2008	6.81	14.53	0.76	0.05	0.10	6.76
2009	10.29	26.87	1.28	0.06	0.15	8.04
2010	4.43	18.50	1.50	0.02	0.08	8.01
2011	4.54	17.09	0.51	0.03	0.10	5.31
2012	4.13	18.22	1.34	0.03	0.15	4.23
2013	4.32	21.08	0.49	0.06	0.27	6.67
2014	4.50	28.97	5.32	0.05	0.31	6.31
2015	6.18	56.39	2.85	0.08	0.69	2.65
2016	7.87	78.54	6.31	0.17	1.68	-1.62
2017	11.05	76.90	6.83	0.23	1.62	0.81

Source: Authors' calculations based on data from Global Development Finance, World bank (2019).

Table 3 Nigeria's External Debt Stock, Debt Service and Net Transfers on Debt (million US\$)

Year	External debt	Debt service	Net transfers on	Interest arrears, long-	Concessional	Growth in
			debt	term debt	debt/total debt	debt
			(in million US\$)	(in percent)		
1970	836.7	95.6	254.5	0.6	15.6	
1971	960.4	94.5	73.1	0.3	19.3	14.8
1972	1,081.8	95.3	94.5	1.9	20.9	12.6
1973	1,779.0	228.7	87.8	1.2	14.1	64.5
1974	1,880.7	192.0	(49.9)	0.8	15.4	5.7
1975	1,687.2	269.8	(199.7)	0.7	19.0	-10.3
1976	1,337.8	400.3	(386.1)	0.6	24.7	-20.7
1977	3,146.4	138.1	1,733.2	0.2	11.2	135.2
1978	5,091.2	148.9	1,845.4	0.5	7.5	61.8
1979	6,244.6	391.8	873.0	-	6.5	22.7
1980	8,938.2	1,150.8	1,888.5	0.1	4.9	43.1
1981	11,445.5	1,790.6	1,528.7	3.2	3.4	28.1
1982	11,992.5	2,090.3	(570.2)	15.7	2.9	4.8
1983	17,577.0	2,565.4	4,742.5	9.9	2.2	46.6
1984	17,783.3	4,067.5	(1,059.8)	56.4	1.9	1.2
1985	18,655.4	4,428.7	(2,141.7)	78.5	1.9	4.9
1986	22,215.8	2,050.8	604.2	28.2	1.8	19.1
1987	29,024.9	1,106.4	2,285.3	669.8	1.5	30.6
1988	29,624.1	2,210.4	118.5	887.9	1.5	2.1
1989	30,122.0	2,117.5	(944.9)	220.5	1.5	1.7
1990	33,458.5	3,335.6	(2,189.8)	1,040.4	1.6	11.1
1991	33,526.9	2,944.8	(2,244.0)	481.7	2.9	0.2
1992	29,018.7	2,414.6	(1,244.5)	1,197.3	3.3	-13.4
1993	30,699.3	1,491.0	(440.4)	2,438.3	3.6	5.8

1994	33,092.3	1,871.7	(1,785.2)	3,819.5	3.9	7.8
1995	34,094.4	1,832.9	(1,471.6)	4,717.3	4.0	3.0
1996	31,414.8	2,228.6	(2,138.5)	4,966.7	4.3	-7.9
1997	28,467.5	1,415.9	(1,233.3)	4,956.6	4.7	-9.4
1998	30,313.7	1,332.0	(832.1)	5,774.1	5.3	6.5
1999	29,095.6	1,072.1	(843.2)	5,411.9	6.0	-4.0
2000	32,374.1	1,854.8	(668.2)	43.5	4.6	11.3
2001	31,418.2	2,524.3	(2,940.0)	415.2	4.3	-3.0
2002	31,780.1	1,476.9	(920.8)	1,475.5	4.7	1.2
2003	36,711.6	1,631.3	(792.5)	2,608.0	42.3	15.5
2004	39,898.1	1,710.3	(796.9)	3,895.0	44.0	8.7
2005	25,754.6	8,807.1	(6,358.2)	3.1	41.9	-35.4
2006	9,617.4	6,710.1	(5,660.3)	-	21.0	-62.7
2007	12,144.5	1,010.5	2,251.3	-	21.0	26.3
2008	13,128.9	686.1	682.5	-	22.7	8.1
2009	15,942.1	757.2	196.3	-	22.0	21.4
2010	15,484.2	1,256.9	(139.7)	-	28.0	-2.9
2011	17,663.3	525.2	2,155.5	0.0	29.5	14.1
2012	18,127.3	1,337.2	248.5	-	33.1	2.6
2013	21,143.7	495.7	2,779.3	0.5	33.2	16.6
2014	24,756.0	4,546.1	3,886.6	0.2	31.9	17.1
2015	28,943.0	1,463.9	4,203.2	0.2	30.7	16.9
2016	31,151.5	2,502.8	1,929.6	0.2	31.3	7.6
2017	40,238.5	3,572.7	7,595.8	-	28.4	29.2

Source: Global Development Finance, World Bank (2019)

Size and Magnitude of Nigeria's External Debt

Table 3 displays the size of Nigeria's stock of external debt, debt service payments, growth in debt and some other features of external debt for the period 1970-2017. The total nominal stock of external debt rose from US\$ 836.7 million in 1970 to US\$ 33,458.5 million in 1990 and \$US\$ 40,238.5 million in 2017, while debt service payments rose from US\$ 95.6 million in 1970 to US\$ 3,335.6 million in 1990 and US\$ 3,572.7 million in 2017. The increase in stock of debt and debt service payments between 1990 and 2017 when compared in absolute terms seems to marginal as against the relative paltry amount in 1970. As Table 2 further relates, the growth in external debt stock shows some declines in the 1990s and till 2003, while a significant rise in Nigeria's indebtedness was recorded during the period 1977-1981, 1983, 1987, 2003, 2007, 2013-2015 and 2017. To explain what happened during the periods of the sharp increases, one need to recall some of the developments that took place within the Nigerian economy.

The country had one of the most successful growth in the 1970s, precisely from the oil windfall of 1973-74 when the price of oil quadrupled. Over the period 1972-1974, the country's exports grew by 94 percent and 138 percent in 1973-1974. Imports also grew at an annual average of 35

percent during the period 1970-80 but there was a glut in the international oil market in 1978 which caused a squeeze in Nigeria's exports to fall by almost 13 percent. Given the good credit rating of the country then and its sustainable status, it was not difficult to obtain external credit to finance the burgeoning imports that eventually increased by about 64 percent.

Between 1980 and 1983, Nigeria's exports fell by an average of almost 27 percent. While share of private borrowing rose 85 percent in 1980-82. Total external debt grew by 46.6 percent in 1983, as concessional debt to total debt remained in a margin below 2 percent between 1984 and 1990 (Table 3). Although the growth rate of external debt was marginal the mid-1980s and 1990 era, the move to rescheduled Nigeria's debt was already on the table as the country's debt stock was on the increasing. According to Chevillard (2001); the first rescheduling of bilateral debt was signed on 6 December 1986.

It concerned a significant amount -US\$ 2898 million – but offered only limited respite to Nigeria: 6 years with 2 years of grace. The cut-off date was fixed at 1 October 1985... Nigeria would have to sign agreements with the IMF before restructuring any debt owed to them. The creditors relied on the IMF to ensure that Nigeria respected its agreements with them. Two other rescheduling agreements were negotiated from this perspective as follows:

- 📅 The first on 3 March 1989 for US\$4747 million (to be consolidated in 16 months); this amount was rescheduled for 9 years, with 4 years of grace.
- 📅 The second on 18 January 1991 for US\$3023 million (to be consolidated in 15 months); depending on the category of the loan, the amount was rescheduled for 19 years, with 9 years of grace, or 14 years, with 7 years of grace.

Although Nigeria was in the category of the poorest and most indebted countries during the 1980s, this should have enabled the country to obtain some consideration for her debts (the Toronto conditions and those of Naples with regards to the Paris Club). However, the fact that Nigeria is a major producer and exporter of crude oil was an argument always put forward by her creditors not to grant Nigeria any such favourable concessions.

With almost \$40 billion owed in external debt in 2004, over 100 million people living on less than a dollar a day, and a green-honed democratic government attempting reforms that came to power in 1999, Nigeria was a strong candidate for debt relief, but this did not happen. In

2004, a group, led by Todd Moss in the Centre for Global Development (CGD, a nonpartisan research institution in Washington, USA), staged a campaign for Nigeria's debt relief. "In October 2005, Nigeria and the Paris Club announced a final agreement for debt relief worth \$18 billion and an overall reduction of Nigeria's debt stock by \$30 billion. The deal was completed on April 21, 2006, when Nigeria made its final payment and its books were cleared of any Paris Club debt" (CGD, 2005).

The Nigeria's debt relief deal was historic expected to have meaningful future impact on the citizenry. The long-term challenge then, was how far and for how long Nigeria was going to consolidate the gains from the debt deal by pushing forward economic reforms and ensuring that the benefits from debt relief truly impacted on its shared growth. Behold, this was not to be!

Between 2007 and 2009, Nigeria recorded an increase of over 55 percent in her external debt amounting to US\$ 15,942 million in 2009 and as at 2017, Nigeria's external debt has risen to over US\$ 40,238 million. Although, Nigeria's long-term interest arrears on external debt since the 2005 debt relief has been nil or as low as 0.2 percent, the dramatic build-up of the nation's external debt calls for concerns.

For African countries generally, the current debt trends in recent time may impair the United Nations 2030 Agenda for Sustainable Development Goals. Since 2013, it has been reported that the median government debt of low-income countries has risen by 20 percent points. Private and non-concessionary windows have been the major sources of this increasing public debt, and interest payments on these loans have been a major source of government revenue leakages (Musa, 2019).

The Debt Sustainability Analysis for Poverty Reduction and Growth Trust (PRGT) Countries and Nigeria as at July 31, 2019, it was reported that of the 40 African countries or so, that received debt relief under the HIPC initiative (1996 – 2006), 8 of the countries are already in **debt distress**, 11 countries including Ghana are in **high** risk of debt distress. In addition, 17 of the countries, among them, Nigeria, are in risk of **moderate** debt distress, with most on the borderline facing eroding safety margin. Only 6 countries are at low risk of debt distress.

Mr. Chairman, was there really a debt relief if the previous loans were mere *round tripping transactions*? No, may be, but this is a matter for another lecture. By obligation and in the spirit of global financial stability, Nigeria is culpable, thus, must honour and not repudiate payment, even though the wine dealer knows that this customer may have been drunk from birth, suffering probably from a “generational curse” by virtue of the race.

Structure, Type and Composition of External Debt

Generally, external debts can be classified based on a donor’s status (official and private debts) or in terms of maturity structure (short-term and long-term). Official debts are those obtained from national governments or their agencies or from international agencies like the IMF and World Bank, while private debts are financial obligations owed to private creditors Eurobonds, loans from nonresidents private commercial banks, etc. (Ajayi, 1991). Short-term instruments are those with an original maturity of one year or less), while long-term debt is defined as debt that has an original or extended maturity of more than one year and that is owed to nonresidents and repayable in currency, goods, or services. Long-term debt has three components: public, publicly guaranteed, and private nonguaranteed debt (IndexMundi, 2019).

Like most developing economies, a greater proportion of Nigeria’s external debt in the 1970s were made up of official debts. From 1970 to 1972, Nigeria’s external debt from official sources was approximately 69 percent, while private sources accounted for the balance of almost 31 percent. Between 1980 and 1988, public and publicly guaranteed debt accounted for almost 99 percent of Nigeria’s long-term debt, while the share of private nonguaranteed long-term debt declined from a range of 20.7 percent in 1980 to 1.2 percent in 1988 (see Table 4 of Ajayi, 1991).

Nigeria’s total debt stock was US\$ 13,315 .6 million in 2009. Of this total, official public and publicly guaranteed external debt accounted for 31.7 percent (US\$ 4,221.3 million), while private nonguaranteed made up the difference of 68.3 percent (US\$ 9,094.3). As Table 5 further relays, from 2010 to 2013, the share of official public and publicly guaranteed debt in total of the country’s external debt increased from 36.35 percent in 2010 to 44.95 percent in 2017. In 2017, the percentage share of private nonguaranteed component of Nigeria’s outstanding external debt declined to 50.47 percent. From the foregoing, long-term debt constituted a major

proportion of total debt outstanding, while short-term has been relatively low over the years. Table 6 presents a comprehensive historical external debt profile of Nigeria (1970-March 2019). The currency composition of Nigeria's external debt has varied over the years as shown in Table 7. The Table presents the percentage of external long-term public and publicly guaranteed debt for the period 2005-2017. In 1970, multiple currencies with a share of 39 percent dominated the currency composition of Nigerian debt and was followed by the pound sterling. With a share of 30 percent (Ajayi, 2003). Since 1980, the United States dollars have been dominating Nigeria's currency composition of Long-term debt. Precisely in 1980, the dollar had a share of 55 percent in long-term debt, followed by the Deutsche mark (see Table 5, Ajayi, 2003). Although, the dollar share declined to 32.6 percent and 31.3 percent in 1993 and 1998 respectively, in 2005, the dollar share declined to second place with a share of 27.28 percent, whereas, the Euro accounted for 36.21 percent. Since 2006, when the share of the dollar rose to 59.38 percent from its 2006 place, the share of US dollars in the composition of Nigeria's long-term currency has been increasing steadily. The dollar's share in 2011 was 76.97 percent, while SDR's share followed with a share of 13.19 percent and by 2017, the sum of shares of the Euro, Japanese yen and the SDR was less than 5 percent (see Table 7) as dollar accounted for over 83 percent of Nigeria's long-term publicly guaranteed debt. This has implication for demand of more US dollar in relation to other currencies including the Chinese Yuan. Figure 7 illustrates the Nigeria's regime type and the debt spiral, while Figure 8 illustrates the trend Nigeria's debt has assumed since 1970. Comparatively, the governments of President Mohammadu Buhari seems to have more passion for external borrowing than other administration.

Figure 7 Nigeria's Regime Type and the Debt Spiral (1970-March 2019)

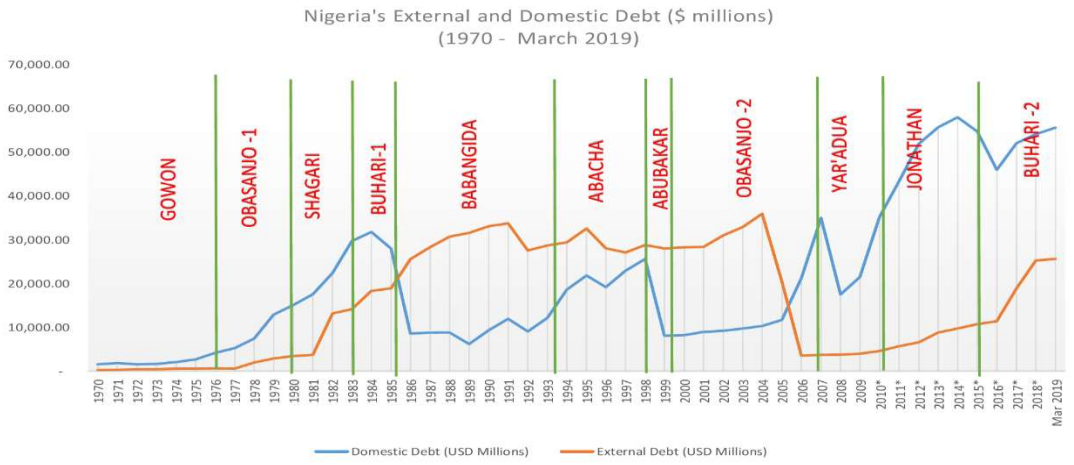


Figure 8. Nigeria's External Debt 1970 – March 2019

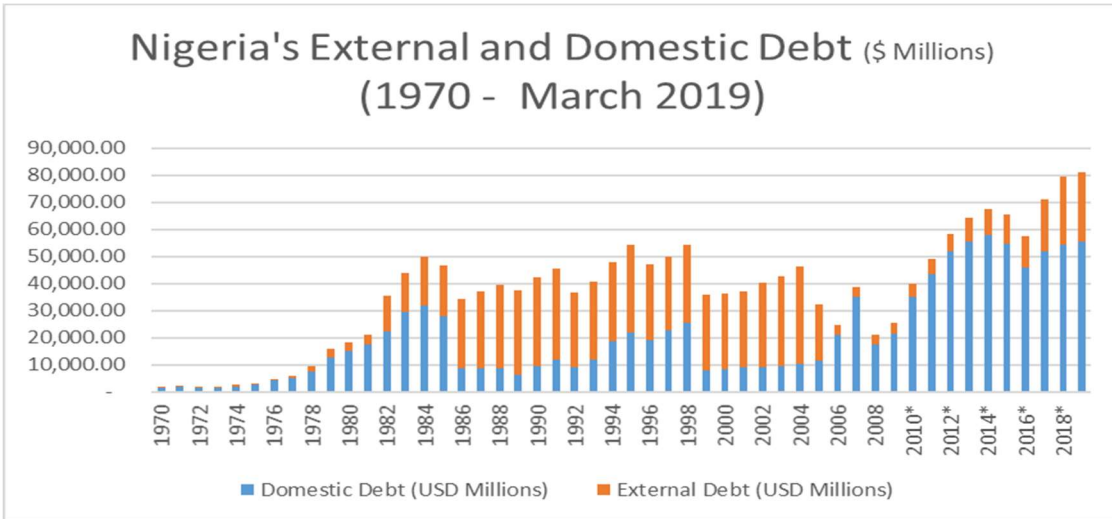


TABLE 5 NIGERIA'S EXTERNAL DEBT OUTSTANDING (1990-2017) US\$ MILLION

CREDITOR CATEGORY	1990	2000	2009	2010	2011	2012	2013	2014	2015	2016	2017
Debt outstanding and disbursed	33,099.00	28,273.68	13,315.60	12,904.10	15,091.20	15,552.40	18,563.10	22,328.40	26,621.10	28,899.00	37,852.30
<i>A. Public and publicly guaranteed</i>	22,688.00	24,783.77	4,221.30	4,691.00	5,936.60	6,680.00	8,286.30	9,133.40	10,546.40	11,411.90	18,749.90
Official creditors	17,171.00	21,180.00	4,134.80	4,691.00	5,436.60	6,180.00	7,286.30	8,133.40	9,546.40	10,411.90	12,949.90
Multilateral	3,842.00	3,460.00	3,520.90	4,309.90	4,799.20	5,357.00	6,239.70	6,733.80	7,693.30	8,061.50	10,228.30
Bilateral	1,675.00	143.77	613.90	381.10	637.50	823.00	1,046.60	1,399.60	1,853.10	2,350.40	2,721.60
<i>B. Private nonguaranteed</i>	10,411.00	3,489.91	9,094.30	8,213.10	9,154.50	8,872.40	10,276.80	13,195.00	16,074.70	17,487.10	19,102.40
Bonds or Promissory Notes	4,550.00	1,446.70	0	0	500	850	2,125.00	4,475.00	5,275.00	5,942.30	6,942.30
Commercial banks and other	5,861.00	2043.21	9,094.30	8,213.10	8,654.50	8,022.40	8,151.80	8,720.00	10,799.70	11,544.70	12,160.10
<i>Percentage Share of Official</i>	68.55	87.66	31.70	36.35	39.34	42.95	44.64	40.90	39.62	39.49	49.53
<i>Percentage Share of Private</i>	31.45	12.34	68.30	63.65	60.66	57.05	55.36	59.10	60.38	60.51	50.47

Table 6. Nigeria's Total External Debt 1970 – March 2019

CREDITOR CATEGORY	Paris Club	Multilateral	Other Bilateral & (Non-Paris Club)	London Club (Prom Notes + Banks)	Total External Debt
	(\$ Millions)	(\$ Millions)	(\$ Millions)	(\$ Millions)	(\$ Millions)
1970	190.4	53.1	1.5	0.0	245.0
1971	209.5	57.6	4.3	0.0	271.3
1972	240.3	155.2	8.2	0.0	403.7
1973	229.2	162.8	28.9	0.0	420.9
1974	290.5	198.0	34.7	0.0	523.2
1975	320.2	201.1	37.0	0.0	558.3
1976	348.9	206.6	38.4	0.0	593.8
1977	335.4	214.2	10.9	0.0	560.5
1978	1,294.2	238.3	401.2	0.0	1,933.7
1979	2,557.9	292.4	24.8	0.0	2,875.1
1980	2,895.3	328.9	204.2	0.0	3,428.5
1981	3,102.4	282.0	275.9	0.0	3,660.2
1982	8,168.3	791.4	1,242.8	2,956.9	13,159.4
1983	5,390.00	884.00	1,526.00	9,965.0	17,765.00
1984	5,811.00	1,097.00	1,318.00	9,121.0	17,347.00
1985	7,888.00	1,317.00	1,939.00	7,815.0	18,959.00
1986	10,228.00	1,887.00	2,873.00	10,586.0	25,574.00
1987	12,589.00	2,985.00	2,032.00	10,710.0	28,316.00
1988	14,400.00	2,838.00	2,685.00	10,770.0	30,693.00
1989	15,891.00	3,171.00	2,311.00	10,233.0	31,606.00
1990	17,171.00	3,842.00	1,675.00	10,411.0	33,099.00
1991	17,793.00	4,016.00	1,454.00	10,467.0	33,730.00
1992	16,454.70	4,518.00	1,226.10	5,366.0	27,564.80
1993	18,160.50	3,694.70	1,647.30	5,215.7	28,718.20
1994	18,334.32	4,402.27	1,456.31	5,236.0	29,428.86
1995	21,669.60	4,411.00	1,311.20	5,193.0	32,584.80
1996	19,091.00	4,665.00	121.00	4,183.0	28,060.00
1997	18,980.39	4,372.68	79.19	3,655.5	27,087.80
1998	20,829.93	4,237.00	65.77	3,640.8	28,773.54
1999	20,507.33	3,933.23	69.34	3,529.3	28,039.21
2000	21,180.01	3,460.00	143.77	3,489.9	28,273.69
2001	22,092.93	2,797.87	121.21	3,335.0	28,347.00
2002	25,380.75	2,960.59	55.55	2,595.0	30,991.87
2003	27,469.92	3,042.08	51.63	2,353.2	32,916.81
2004	30,847.81	2,824.32	47.50	2,225.0	35,944.66
2005	15,412.40	2,512.19	461.79	2,091.6	20,477.97
2006	-	2,608.30	427.18	509.0	3,544.49
2007	-	3,080.91	573.35	0.0	3,654.26
2008	-	3,172.87	547.49	0.0	3,720.36
2009	-	3,504.51	442.79	0.0	3,947.30
2010	-	4,217.76	361.01	0.0	4,578.77
2011	-	4,568.92	597.66	500.0	5,666.58
2012	-	5,267.42	703.03	556.6	6,527.08
2013	-	6,275.20	1,025.70	1,521.0	8,821.90
2014	-	6,799.36	1,412.08	1,500.0	9,711.44
2015	-	7,560.43	1,658.00	1,500.0	10,718.43
2016	-	7,988.22	1,918.05	1,500.0	11,406.27
2017	-	10,241.44	2,372.00	6,300.0	18,913.44
2018	-	11,014.34	3,091.68	11,168.4	25,274.37
2019 March	-	11,248.54	3,192.73	11,168.4	25,609.62
Sources:	CBN Statistical Bulletin various issues				
	CBN Annual Reports 2011 - 2017,				
	DMO Annual report 2017 and DMO Website				
	World Bank Development Indicators 2018				

Table 7. The percentage of external long-term public and publicly guaranteed debt contracted (percent)

S/N	Indicator Name	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	All other currencies (percent)	3.39	15.74	16.13	13.32	10.68	8.55	6.44	6.69	8.82	8.03	11.92	10.67	11.21
2	Euro (percent)	36.27	4.67	3.89	3.48	5.32	3.86	2.59	1.98	1.36	0.94	0.69	0.58	0.37
3	Japanese yen (percent)	9.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.29	0.27
4	Multiple currencies (percent)	3.65	14.36	10.99	5.87	3.13	1.50	0.67	0.48	0.38	0.44	0.39	0.36	0.23
5	Pound sterling (percent)	17.18	0.25	0.23	0.18	0.14	0.10	0.06	0.04	0.01	0.00	0.00	0.00	0.00
6	SDR (percent)	0.42	5.60	9.20	12.13	14.75	15.89	13.28	13.19	11.29	9.66	7.73	6.76	4.24
7	U.S. dollars (percent)	27.28	59.38	59.56	65.02	65.97	70.10	76.97	77.63	78.13	80.92	79.19	81.34	83.68
	Grand Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

IV

Theoretical Perspectives of Debt and Overview of Some Existentialisms

In the development literature, one important discourse that has resonated over time is the growth-debt nexus. The interrogation has been whether large public debt burden contributed to the weak economic performance of heavily indebted poor countries (HIPC), particularly those in SSA. Two competing hypotheses posited to explain this relationship are the 'debt overhang hypothesis' and the 'liquidity constraint hypothesis'. The debt overhang hypothesis as reiterated by Claessens, Detragiache, Kanbur and Wickham (1996:17):

... is based on the premise that, if debt will exceed the country's repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country's output level. Thus, some of the returns from investing in the domestic economy are effectively "taxed away" by existing foreign creditors, and investment by domestic and new foreign investors is discouraged.

What the debt overhang hypothesis implies is that reducing the face value of future debt obligations will increase investment and repayment capacity of the debtor since the distortion due to the implicit tax is reduced. When this effect is strong, the debtor is said to be on the 'wrong side' of the Laffer curve, thus, suggesting that there is a limit at which debt accumulation stimulates economic growth (Elbadawi, Ndulu and Ndung'u, 1997). The Laffer-type relationship establishes a non-linear relationship between the stock of external debt and growth.

The liquidity constraint stresses the fact that external debt has a negative effect on growth in that it reduces funds available for investment and growth – crowding-out effect. Large external transfers also affect economic performance as they could also constrain access to international financial markets and impose a general level of uncertainty in the economy (Were, 2001).

Some studies, however, have estimated investment functions and found no evidence for a debt-induced contraction of investment, rather, what has been suggested is that the observed decline in investment in the wake of the debt crisis particularly in 1982 can be attributed to the adverse economic shocks that caused the global recession (Warner, 1992).

Over the years, some empirical studies have assessed the dampening effects of high debt stocks on economic growth (debt overhang) and effects of debt service on private investment (crowding-out effects) its non-linearity (Laffer curve). These studies justify the inclusion of some standard set of policy variables and other explanatory variables among the primary determinants. Pattillo and others (2002) applied a growth accounting framework to a group of 61 developing countries in sub-Saharan Africa, Asia, Latin America, and the Middle East over the period 1969–98. Their results suggest that on average, doubling debt reduces both growth in per capita physical capital and growth in total factor productivity by almost 1 percentage point. According to Easterly (2002) and Arslanalp and Henry (2004, 2006), inherent unfavourable socioeconomic characteristics which include patrimonial governance structures, interest group polarization and political instability, that prevail in debtor countries, result in strong preference for high public expenditures that are financed through debt expansion (Knoll, 2013).

Empirical studies that have found that debt overhang had an adverse effect on private investment include Borensztein (1990) for the Philippines; Elbadawi et al. (1996), for SSA, Latin America, Asia and Middle East. Elbadawi, Ndulu, and Ndung'u (1997), for example, find a statistically significant relationship between debt service (as a share of exports) and growth in Sub-Saharan Africa Mbanga and Sikod (2001), for Cameroon, found that there exist a debt overhang and crowding-out effects on private and public investments, respectively as did Iyoha (1996) for SSA countries. Using time series data for the period 1970-95, the empirical results by Were (2001), show that external debt accumulation has a negative impact on economic growth and private investment. Thus, confirming the existence of a debt overhang problem in Kenya. Chauvin and Kraay (2005) tested the debt investment and debt-growth relationship by estimating the growth and the investment enhancing effects of sovereign debt relief. The results did not find evidence that debt relief positively affects aggregate investment and economic growth, thus, partly confirming earlier findings by Cohen (1997). Other recent studies which showed that debt flows lead to decline in economic growth are Udejaja and Okeke (2005), Osinabi and Olaleru (2006); Ayadi and Ayadi (2008); Adegbite, Ayadi and Ayadi (2008); Adesola (2009); Ekpo and Udo (2013); Saleh (2015).

Some other studies, which, however, estimated investment functions and finds no evidence for a debt-induced contraction of investment are Warner (1992), who rather suggest that the observed decline in investment in the wake of the debt crisis in 1982 can be attributed to the adverse economic shocks that caused the global recession. Fosu (1999) also finds no such relationship for countries of West Africa. Knoll (2013) using a quasi-experimental research design to compare the performance of investment and growth between LICs that have benefited from HIPC and MDRI and those that have not. Knoll assessed whether the two programs yielded the expected effects. The results indicate that while debt relief programmes led to higher private-sector investment in beneficiary countries, they did not have any effect on public sector investment and growth. Traum and Yang (2010) estimated the crowding out effects of government debt for the U.S. economy using a New Keynesian model. The result of the estimates revealed that whether private investment is crowded in or out in the short term depends on the fiscal shock that triggers debt accumulation. Other studies which did not establish the existence of the debt overhang hypothesis, include Essien, Agboegbulem, Mba and Onumonu (2016); Aminu, Aminu and Salihu (2013);

In the 1980s and the 1990s, countries that requested aid and debt forgiveness grants were conditioned to implement certain predetermined reforms. This approach was, however, found to be largely inefficient. However, with the introduction of the HIPC Initiative, bilateral and multilateral donors re-directed their debt relief efforts toward countries that already have better institutions and policies in place (Nanda 2006, Presbitero 2009). Consequently, studies have also been undertaken to determine the extent to which quality of governance and public sector efficiency had positive effect on economic growth in the presence of external debt.

The policy environment, thus, also affects the debt-growth relationship as earlier findings have shown that domestic policies played an important role in the debt burden and other economic problems which afflict Nigeria (Ajayi, 1991). The empirical studies on the debt-growth nexus are thus, not entirely conclusive. As a result, more work is needed to explore the actual channels through which debt affects growth and in the presence of other exogenous factors. This lecture attempts to fill this gap in the empirical literature with special attention paid to the effects of external debt service on public investment. Policy simulations impact of alternative debt stock

reduction scenarios (effective after 2006 after the debt cancellation) on investment and output will also be performed. The lecture will as well estimate the debt “Laffer curve” and the crowding-out effect of private capital. Conclusions will be drawn on this basis.

V

Framework and Consummate

The basic proposition of this lecture is that macroeconomic objectives are aimed at ensuring sustainable development and this can be achieved through investments in soft and hard infrastructure. However, countries, principally developing economies, opt for external financing of these investments as against domestic borrowing notably because of the savings deficit in domestic capital markets, and this has economic consequences, especially when such borrowings become insolvent and unsustainable.

Following the developments so far, it is now trite to state that external debt can affect the economic performance of a country. There is also a large amount of literature and models on the linkages between external debt and the state of economic accomplishments as we have shown in Section 2 following the Solow-Swan neoclassical growth models. From the growth models, the theoretical framework and channels through which the impact of external debt burden touch on economic performance is through the investment cum growth (Ajayi, 2003). Empirical studies incorporate series of exogenous variables amongst them debt variables in explaining the determinants of growth vis-à-vis investment. Most of the studies find significant and negative relationship between growth and investment. Such findings depict the *debt-overhang hypothesis* which hinges on anticipated foreign tax on current and future income. Consequent upon this, variants of debt-growth models which explore output and debt burden (indicators) dynamics for Nigeria, is analyzed based on the following equation:

Model 1.

$$RGDP_t = \delta_0 + \delta_1 DBS_t + \delta_2 DER_t + \delta_3 INF_t + \delta_4 INTR_t + \delta_5 PRINV_t + \delta_6 TRDOPN_t + \varepsilon_t \quad 26$$

In revisiting the debt-growth dynamics, it has mostly been undertaken through its impact on domestic investment directly or indirectly. However, the effect of external debt on economic growth may occur through some other channels other than the level of investment (Cohen, 1995; Iyoha, 1996; Elbadawi, Ndulu, and Ndung, 1997; Rais and Anwar, 2012; Gohar and Butt, 2012, amongst others). Specifically, the channels through which heavy debt burden can affect economic growth are mainly discussed under the debt overhang, liquidity constraint, and uncertainty effects, among others. The **'debt overhang'** argument is a key concept in the debate based on debt relief programmes for highly indebted poor countries in the 1990s and 2000s (Kim, Ha & Kim, 2017). In the direct channel, debt accumulation expressed as a ratio of debt to GDP stimulates debt initially, while past debt accumulation (debt overhang) impacts negatively on growth. These two channels produce the **debt-Laffer-curve**, which shows that there is a limit at which debt accumulation stimulates growth (Ajayi, 2003:136).

The next line of argument is that external debt service payments can potentially influence economic growth by creating a 'liquidity constraint' which is captured as a **'crowding out'** effect (Cohen, 1993; Claessens et al., 1996; Fosu, 1996; Patillo et al., 2002; Arnone et al., 2005).

Debt overhang, crowding-out and simulation

The debt-growth model when used to analyze the impact of sovereign debt indicators on output growth (debt overhang effect) and crowding-out effect of debt on private investment, appropriate and explicit allowance can also be made for their interactions. In this sense, simultaneous equations model that holds output equation and investment demand function, considered as a system of simultaneous equations (Iyoha, 1999) can be analyzed and policy scenarios simulated. Arising from this, policy simulations using alternative debt stock reduction scenarios is undertaken to analyze the effect of debt on investment and output in Nigeria between 2007 and 2017 (after the period of its debt forgiveness). The basic model consists of two stochastic equations explaining output and investment:

Model 2

$$GDP_{gwth} = \sigma_0 + \sigma_1 L_B + \sigma_2 PCI + \varepsilon_t \quad 27$$

$$PCI = \theta_0 + \theta_1 INT + \theta_2 GDP_{gwth} + \theta_3 EXDR + \theta_4 EDS + \mu_t \quad 28$$

where ε_t and μ_t are stochastic error terms. In the system of equations, there are two endogenous variables, the log of GDP and the log of per capita investment. The other exogenous variables include the log of labour, interest rate, stock of external debt and external debt service.

The simultaneous equation model is estimated by the Generalized Method of Moments (GMM) estimation technique. The Generalized Method of Moments (GMM) not only allows for correlation between the right-hand side variables and errors, but also allow for correlation across the residuals, autocorrelation in the residuals and heteroscedasticity. In this method, all exogenous variables and the predetermined variables are used as instrumental variables together with the constant. The instruments used in the system are the exogenous variables in their current period and one-period lagged value of the endogenous variables expressed in logarithmic form. The policy simulations are undertaken, and this involves assessing the impact of alternative debt stock reduction scenarios on investment and output in the recent years, thus leading to various policy recommendations inter alia.

Laffer curve

The debt-growth model in the course of capturing the debt overhang effect, also accounts for nonlinearity impact of debt (Laffer curve). An existence of an established ‘Laffer curve’ produces an inverted U-shaped curve and explores the relationship of how debt contributes to economic growth up to a certain point (maximal threshold), and afterward retards growth (Megersa, 2014).

In considering the typical debt-growth dynamics as adopted in Equation (26), the analyzed model for Nigeria is further augmented to reflect the non-linearity impact of debt in the midst of other controlled variables:

Model 3

$$RGDP_t = \alpha + \gamma DER_t + \phi fDER_t + \tau z_t + \varepsilon_t \quad 29$$

Following an augmented modified stipulation of Equation (26), $RGDP_t$ and DER_t are as earlier defined, z represents a set of control variables (ratio of external debt servicing to exports. Inflation rate, interest rate and private investment, and trade openness). Based on the γ and ϕ

parameters, function f formulates Equation (29) as a bell-shaped relationship that can be applied to estimate the Laffer curve. But why do large levels of accumulated debt stocks lead to lower growth?

First, political economy considerations may lead to over borrowing and low growth (tragedy), often accompanied by capital flight, if the costs of high taxes to service the debt are not internalized (Alesina and Tabellini, 1989, Tornell and Velasco, 1992). Second and most well-known, debt overhang theories posit that if there is some likelihood that in the future debt will be larger than the country's repayment ability, then expected debt service will be an increasing function of the country's output level. The returns from investing in the country therefore face a high marginal tax by the external creditors, and new domestic and foreign investment is discouraged (Krugman, 1988; Sachs, 1989).

The estimated models adopt the growth of real GDP and the growth of GDP as explained variation alongside with ratios of external debt to GNI, external debt service to exports and other control variables (human capital variables and institutional variables). EXD_{gni} = $RGDP_{gwth}$ = growth of real GDP (percent), GDP_{gwth} is growth of GDP (percent), External debt ratio (percent of GNI), while $EXDs$ captures External debt service (percent of exports). Labour participation rate (percent of total population) is represented as L ; K denotes gross capita formation (percent of GDP); LEB symbolizes Life expectancy (human capital component), and TOT represents terms of trade. INF denotes Inflation rate (percent, annual CPI); $Voacc$ measures Voice and Accountability; $Regqly$ is Regulatory Quality; while $Rulaw$ captures the Rule of Law. The nonlinearity relationship between growth and external debt is examined by forcing a quadratic specification incorporated in the analysis by squaring the ratio of external debt to GNI (External debt ratio, percent of GNI).

Monetary Component in External Debt Analysis

Achieving overall macroeconomic stability calls for harmonization of monetary and fiscal policies, otherwise, the inconsistent behavior of some of the macroeconomic variables would have negative impact not only on other variables but also on the overall economy. In recent times, most developing countries have experienced growth in money supply and rapid increase in the price level. The monetarists argue that the problem is mainly due to widening government

deficits, which result in increased money supply, and in turn causes inflation. This is evident in the work of Aigbokhan (1991), Orubu (1995) and Omotor (2005 and 2008).

According to Friedman (1971), monetary authorities can control inflation especially in the long run, by controlling the growth of money supply. Accordingly, deficits lead to inflation, but only to the extent that they are monetized. In tandem, Miller (1983) argued that government deficits are generally inflationary in nature, irrespective of whether the deficits are monetized or not. The relation between debts and inflation can be explained from the Keynesian view or a monetarist approach. Deficits, through changes in public spending or in taxes have a direct effect on aggregate demand. Simultaneously, the increase of public debt, due to large indebtedness of the general government, causes wealth increase (Blanchard, 1985). The increased wealth suggests that when the public holds more financial asset in their portfolio, it will generate higher levels of consumption, more aggregate demand and an increase in the price level, all things being equal.

In the seminal works of Sargent and Wallace (1981) known as the unpleasant monetarist arithmetic', they opined that financing budget deficits via debts may in the long run produce more inflation than financing deficit through sustained monetary growth. The fact that the government ultimately will have to issue money, when the public has no more ability to absorb new debt, under the risk of making debt-to-GDP ratio unsustainable, appears therefore unpleasant to monetarist theories.

In analyzing the possible effects of budget deficits on monetary policy, the money growth function is specified thus, as;

$$\dot{M}_2 = f\left(\dot{M}_2^e, \frac{FD}{Y_t}\right) \quad 30$$

where \dot{M}_2 = rate of change of money supply in the current period, \dot{M}_2^e = rate of change of expected money supply in the current period, FD = nominal fiscal deficit in the current period, and Y_t = nominal GDP in the current period.

The growth rate of money stock is assumed to depend on the growth rate of the expected money stock as predicted by lagged variables which affect the behavior of monetary authorities and

government fiscal deficit (Kolluri, Bharat and Demetrios, 1987). The lagged fiscal deficit variable forms an explanatory variable with respect to the growth of money stock basically for two important reasons. First, some lag effects of the money supply response to government deficit may occur because interest rates may take some time to adjust as demand for loanable fund increases. Secondly, adopting the lagged deficit variable, the misspecification of the timing of deficits and growth of money stock issues as fostered by Hamburger and Zwick (1982) is avoided. Theoretically, the actual form of the function depends on the hypothesis describing M_2^e . Assuming linearity and treating the expected growth of money stock as a function of lag period values of money stock growth, we obtain:

$$\dot{M}_2 = \alpha_0 + \alpha_1 \dot{M}_{2(t-1)} + \alpha_2 \dot{M}_{2(t-2)} + \alpha_3 FD_{gdp(t-1)} + \varepsilon_t \quad 31$$

Here, $FD_{gdp(t-1)}$ represents the level of government fiscal deficit as a percentage of GDP lagged by one period and ε_t as the stochastic term. The specification enables one to access the impact of government fiscal deficit on money supply. Equations (31) and (32) represent Barro (1978) specification as the modified variant in Hamburger and Zwick (1981) stipulated as:

$$\dot{M}_2 = \beta_0 + \beta_1 \dot{M}_{2(t-1)} + \beta_2 \dot{M}_{2(t-2)} + \alpha_3 FD_{nom(t-1)} + \alpha_4 GNP_{(t-1)} + \varepsilon_t \quad 32$$

$GNP_{(t-1)}$ = rate of change in real GDP in the previous period which is already deflated $FD_{nom(t-1)}$ = nominal fiscal deficit deflated by GDP deflator multiplied by the real GDP lagged one period.

In analyzing the effects of government deficit on inflation, the following monetarist price change equation is assumed;

$$\dot{P} = \phi_0 + \phi_1 \dot{M}_2 + \phi_2 \dot{M}_{2(t-1)} + \phi_3 \dot{M}_{2(t-2)} + \mu_t \quad 33$$

here, \dot{P} refers to the rate of change in GDP deflator. Accordingly, the current period inflation depends on the current and lagged rates of money growth. Thus, this model is modified to consider the possible direct response of inflation to deficits;

$$\dot{P} = \phi_0 + \phi_1 \dot{M}_2 + \phi_2 \dot{M}_{2(t-1)} + \phi_3 \dot{M}_{2(t-2)} + \phi_4 FD_{gdp(t-1)} + \mu_t \quad 34$$

In which $FD_{gdp(t-1)}$ is known as government fiscal deficit in the current period as a percentage of GDP in the previous period. This response may occur from the demand side and/or through its impact on inflationary expectations, rather than through variations in money supply. Our inflation Equation (35) can be considered as a close approximation of the following equation specified by Niskanen (1978);

$$P = \phi_0 + \phi_1 \dot{M}_{2(t-1)} + \phi_2 \dot{M}_{2(t-2)} + \phi_3 FD_{gdp(t-1)} + \phi_4 \dot{P}_{(t-1)} + \mu_t \quad 35$$

Monetarist propositions can be tested using the money and price equations (that is Equations 33 and 35). The slope coefficients as implied by the stated propositions are expected to be positive. Unlike the case of highly developed economies, most of the less developed nations have recently been plagued by huge external debt. Based on theoretical premise, it is assumed that the monetary authorities or the central bank, as a response to an increase in external debt, intervenes through sterilization in order to prevent the appreciation of local currency and inflation spiral. Thus, the effect of external debt on money supply and/or inflation is considered positive.

In analyzing the direct and indirect effects of external debt on inflation, the basic money and price functions in Equations (33) and (35) are replaced with external debt stock ($EXTD$) and analysed using Nigerian data as stipulated in Model 4:

Model 4

$$\dot{P} = \phi_0 + \phi_1 \dot{M}_2 + \phi_2 \dot{M}_{2(t-1)} + \phi_2 \dot{M}_{2(t-2)} + \mu_t \quad 36$$

$$P = \phi_0 + \phi_1 \dot{M}_{2(t-1)} + \phi_2 \dot{M}_{2(t-2)} + \phi_3 FD_{gdp(t-1)} + \phi_4 \dot{P}_{(t-1)} + \mu_t \quad 37$$

VI

How the Data Fits Model

The time series data used in the estimation covers the period 1981 to 2017 and were sourced from the World Development Database. In examining the debt-growth dynamics of Model 1, two

variants of the models are analyzed; one, a simple macroeconomic debt growth model and the other an investment-debt model as employed by Ajayi (1996), Iyoha, (1996), Maureen (2001) and Mbah, Agu and Umunna (2016) with some modifications. The model critically investigates the linear relationship between growth and external debt indicators with the inclusion of other relevant control variables as highlighted in the literature.

Stationarity Results

Since time series data are vulnerable to unit root problems, the conventional Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root tests are employed on the series to test for their stationarity. The tests show that only DBS is stationary (integrated of order zero) at 5 percent level of significance. The rest of the variables- IRGDP, DER, INF, INTR, PRINV, REER and TRDOPN were found to be stationary after differencing them once. The variables can thus, be said to be integrated of order one ($I \sim I(1)$). The results of the unit root tests in levels are presented in Table 8.

Table 8: Results of Unit root tests

Augmented Dickey-Fuller Unit Root Test			
Variable	At level (prob.)	First difference (prob.)	Decision
DBs	-4.35 (0.01)**	-4.55 (0.00)**	I(1)
DER (percent of GNI)	-2.53 (0.31)	-4.73 (0.00)**	I(1)
Inflation rate	-3.54 (0.05)**	-5.49 (0.00)**	I(1)
Interest rate	-2.12 (0.52)	-5.48 (0.00)**	I(1)
Prinv	-1.69 (0.73)	-6.29 (0.00)**	I(1)
REER	-1.93 (0.62)	-4.09 (0.01)**	I(1)
RGDP	-1.52 (0.80)	-6.90 (0.00)**	I(1)
TRDOPN	-2.12 (0.51)	-7.49 (0.00)**	I(1)
Phillips-Perron Unit Root Test			
	At level (prob.)	First difference (prob.)	Decision
DBs	-4.42 (0.01)**	-8.30 (0.00)**	I(1)
DER (percent of GNI)	-2.427 (0.36)	-6.372 (0.00)**	I(1)
Inflation rate	-2.870 (0.18)	-10.59 (0.00)**	I(1)
Interest rate	-2.06 (0.55)	-6.86(0.00)**	I(1)
Prinv	-1.45 (0.83)	-13.65 (0.00)**	I(1)
REER	-2.24 (0.45)	-4.81 (0.00)**	I(1)
RGDP	-1.54 (0.80)	-6.67 (0.00)**	I(1)
TRDOPN	-2.01 (0.57)	-11.05 (0.00)**	I(1)

Source: Author's Computation (using E-views 10)

N.B: ** indicates significant at the 0.05 level, *** indicates significant at the 0.1 level

Autoregressive Distributed Lag (ARDL)

This Lecture adopts the Autoregressive Distributed Lag (ARDL) bound testing methodology (Pesaran and Shin 1995 and 1999, Pesaran *et. al* 1996, Pesaran, 1997) to estimate the long run relationship among the variables. The ARDL has three advantages when compared with other previous and traditional cointegration methods like the Johansen (1998) and Johansen and Juselius (1990). The first is that the ARDL does not need all the variables under study to be integrated of the same order and as such, it can be applied when the under-lying variables are integrated of any order (order one, order zero or fractionally integrated). The second advantage is that the ARDL test is relatively more efficient in the case of small and finite sample data sizes (Omotor, 2008). Third advantage is that when the ARDL technique is applied, unbiased estimates of the long-run model can be extracted (Harris and Sollis, 2003).

The ARDL model following Pesaran *et.al* (2001), is expressed as follows:

$$\begin{aligned} \Delta RGDP_t = & \delta_0 + \delta_1 \Delta DER_t + \delta_2 \Delta DBS_t + \delta_3 \Delta INF_t + \delta_4 \Delta INTR_t + \delta_5 \Delta PRINV_t + \delta_6 \Delta TRDOPN_t + \\ & + \delta_7 (RGDP_{t-1}) + \delta_8 \Delta (DER_{t-1}) + \delta_9 \Delta (DBS_{t-1}) + \delta_{10} \Delta (INF_{t-1}) + \delta_{11} \Delta (INTR_{t-1}) \\ & + \delta_{12} \Delta (PRINV_{t-1}) + \delta_{13} \Delta (TRDOPN_{t-1}) + \varepsilon ct_{t-1} \end{aligned} \quad 38$$

To obtain optimal number of lags for each variable, the lag length test is conducted by estimating the single equation Vector Autoregression (VAR) and using the lag length criteria. This is followed by the estimation of a single equation unrestricted Error Correction model with the number of estimated lags as shown in Equation (39).

$$\begin{aligned} \Delta RGDP_t = & \delta_0 + \sum_{i=1}^d \delta_1 \Delta (DER)_{t-1} + \sum_{i=0}^d \delta_2 \Delta (DBS)_{t-1} + \sum_{i=0}^d \delta_3 \Delta (INF)_{t-1} + \sum_{i=0}^d \delta_4 \Delta (INTR)_{t-1} \\ & + \sum_{i=0}^d \delta_5 \Delta (PRINV)_{t-1} + \sum_{i=0}^d \delta_6 \Delta (TRDOPN)_{t-1} + \delta_7 (RGDP)_{t-1} + \delta_8 (DER)_{t-1} \\ & + \delta_9 (DBS)_{t-1} + \delta_{10} (INF)_{t-1} + \delta_{11} (INTR)_{t-1} + \delta_{12} (PRINV)_{t-1} + \delta_{13} (TRDOPN)_{t-1} + \nu_t \end{aligned} \quad 39$$

From Equation (39), Δ is the first difference operator, d is the optimal lag length, and all other variables are as previously defined. Wald tests are conducted on the coefficients of the unrestricted error correction variables to obtain the F-statistics, which are used to test the existence of a long run association. The F-statistics are compared with the Pesaran's critical values at 5 percent level of significance. The test involves asymptotic critical value bounds depending on whether the variables are I(0) or I(1) or a mixture of both. The upper bound and

lower bound critical values are derived from the I(1) and I(0) series respectively. When an F-statistics is above the upper bound, we reject the null hypothesis of no cointegration among the other variables and therefore conclude that there is no evidence of a long run relationship. If it falls below the lower bound, we do not reject the null hypothesis of no cointegration, and if it lies between the bounds, the result is inconclusive. In the advent that the variables are cointegrated, the short-run dynamics is derived by estimating the Error Correction Term with the specified lags as shown in Equation (40)

$$\Delta RGDP_t = \delta_0 + \sum_{i=1}^d \delta_1 \Delta(DER)_{t-1} + \sum_{i=0}^d \delta_2 \Delta(DBS)_{t-1} + \sum_{i=0}^d \delta_3 \Delta(INF)_{t-1} + \sum_{i=0}^d \delta_4 \Delta(INTR)_{t-1} + \sum_{i=0}^d \delta_5 \Delta(PRINV)_{t-1} + \sum_{i=0}^d \delta_6 \Delta(TRDOPN)_{t-1} + \delta_7 ECT_{t-1} \quad (40)$$

ECT_{t-1} is the error correction term in Equation (40)

All coefficients of the short run equation relate to the short-run dynamics of the model convergence to equilibrium, and δ_7 in Equation (40) represent the speed of adjustment.

Table 9: Summary of Results ARDL Bounds Tests

	Models	F-Statistics	t-statistics	Decision
1	$F_{RGDP}(F_{RGDP} DBS, DER, INF, INTR, PRINV, TRDOPN)$	4.336**	-3.672**	Cointegration
2	$F_{DBS}(F_{DBS} RGDP, DER, INF, INTR, PRINV, TRDOPN)$	6.410**	-6.020**	Cointegration
3	$F_{DER}(F_{DER} RGDP, DBS, INF, INTR, PRINV, TRDOPN)$	3.237**	-3.062**	Cointegration
4	$F_{INF}(F_{INF} RGDP, DBS, DER, INTR, PRINV, TRDOPN)$	-2.382***	-3.607***	Cointegration
5	$F_{INTR}(F_{INTR} RGDP, DBS, DER, INF, PRINV, TRDOPN)$	3.107***	-4.429**	Cointegration
6	$F_{PRINV}(F_{PRINV} RGDP, DBS, DER, INF, INTR, TRDOPN)$	1.467	-2.403	No Cointegration
7	$F_{TRDOPN}(F_{TRDOPN} RGDP, DBS, DER, INF, INTR, PRINV)$	2.897**	-3.769**	Cointegration

Source: Author's Computation (using E-views 10)

N.B: ** indicates significant at the 0.05 level, *** indicates significant at the 0.1 level

From Table 9, models 1-5 and model 7 exhibits long run relationship which gives precedence to conduct a long run analysis as against model 6 which only exhibits a short-run relationship.

Growth and Outcome of the Results

The diagnostic test outcomes long-run growth results are satisfactory- that is, Breusch-Godfrey for serial correlation, Breusch-Pagan-Godfrey for heteroskedasticity errors and the normality test for distribution of the residuals.

Most of the variables considered in the determination of economic growth as reported in Table 10 did not have their hypothesized signs. The coefficient of debt flows or Debt to GDP ratio was expected to be positive but it is negative. A rise in one period lagged debt flows as a ratio of GDP leads to a decline in economic growth. Specifically, debt to GDP ratio coefficient of (-0.141) suggests that a 1 percent change in past debt accumulation (debt lagged once) retards economic growth by a 0.14 percent. This confirms the existence of debt overhang problem as earlier posited by findings of similar studies (Sachs, 1989; Bulow and Rogoff, 1990; Elbadawi, et. al. 1996; Osinubi, Dauda and Olaleru, 2010; Akram, 2010; Presbitero, 2012 and Patillo, 2011, Onakoya, and Ogunade, 2017).

The lagged error correction term (ECM_{t-1}) in the model captures the dynamic long-run relationship and is correctly signed (negative) and statistically significant. In a single equation ECM_{t-1} , the coefficient on the error correction mechanism must be between -1 and 0. Otherwise the error correction term is explosive. In this case, the coefficient indicates a speed of adjustment of 86 percent from actual growth in the previous year to equilibrium rate of economic growth. The relatively high speed suggests that most errors or deviations are corrected within one year and most of the time, the economy is operating within the equilibrium.

Table 10: Summary of Error Correction Analysis

Dependent Variable: Economic Growth (RGDP)		
Variables	Coefficient	T-statistics
D(LNRGDP(-1))	0.529	2.793**
D(LNDBS(-1))	-0.036	-0.892
D(LNDER(-1))	-0.141	-1.776***
D(LNINF(-1))	-0.035	-0.776
D(LNINTR(-1))	-0.385	-1.713**
D(LNPRINV(-1))	-0.114	-0.994**
D(LNTRDOPN(-1))	0.087	0.813
ECM(-1)	-0.858	-3.349**
C	-0.013	-0.427
R-Squared	0.420	
Adjusted R-Squared	0.241	
Durbin Watson stat.	1.799	
Model Diagnostics		
Breusch-Godfrey Serial Correlation Test	0.527	0.596
Breusch-Pagan-Godfrey Heteroskedasticity Test	0.729	0.665
Normality Test	3.930	0.140

Source: Author's Computation

External Debt as Primary Determinant

The money growth equation is estimated on the premise of two different hypotheses. First, in Equation (31), rate of change in money supply equation is explained by the previous fiscal deficit relative to GDP and the lagged money supply. Equation (32) follows Barro's specification in which fiscal deficit is a determination of money supply changes, *ceteris paribus*. Contrary to theoretical premise, the estimates presented in Table 12 reveal that fiscal deficit is not statistically significant in the money growth equation represented by the coefficient value (0.043).

The inflation rate of change equation is also estimated on two hypothetical fronts. First, Equation (33) represents the traditional monetarist proposition that inflation is a function of the current and lagged money supply growth variables and fiscal deficit. Second, Niskanen's specification as shown in Equation (34) describes inflation as a function of money growth, lagged period of inflation and fiscal deficit. The results indicate that fiscal deficit is not statistically significant in explaining changes in growth of money stock, and inflation.

Just as the direct and indirect effects of deficits on money and inflation have been tested elsewhere, we seek to test the propositions that Central Banks respond to debt accumulation relative to GDP via money supply expansion (Koluri and Giannaros, 1987). As earlier stated, the basic money model is modified by replacing fiscal deficit with external debt as the basic determinant of inflation. The results presented in Table 12 indicate a strong positive relationship between external debt and money growth. The coefficient of determination indicates that about 50 percent of variation in money growth is attributed to the variation of external debt. These results imply that expansionary fiscal policy financed by excessive borrowing is bound to increase inflationary pressures.

A Simultaneous Equation Model of External Debt and Growth in Nigeria and Simulation Analysis (Debt overhang and crowding-out effect)

In this section, we first estimate a simultaneous equations model of output equation and then investment demand function to create room for interaction between external debt and economic

growth. And second, simulation exercises are undertaken (historical simulation and dynamic simulation) to allow for model validation (and evaluation) and determination of economic growth under various scenarios of the effects of external debt.

From the estimated output equation as reported in Table 13, all set of exogenous variables (one period lagged of the endogenous variable and investment per capita) are correctly signed and statistically significant except for labour which is not statistically significant at the 5 percent level. The overall goodness of fit for the equation is high, however, the estimated result is autocorrelated given the low value of the Durbin-Watson statistic. The Cochrane-Orcutt iterative technique was invoked to correct for serial correlation, by applying the first-order serial correlation of the error. The first order autoregressive is positively signed and significant different from zero. Thus, the hypothesis of a significant linear relationship between GDP and the regressors is validated.

Considering the investment equation, the preliminary GMM estimates revealed that the one period lagged value of per capita investment is positive and statistically significant in explaining changes to itself alongside the growth of GDP. The positive and significant effect of the growth of GDP reflects to some extent the 'investment accelerator' effect. The negative and significant effect of external debt stock suggest the debt overhang effect. The Durbin-Watson statics shows no evidence of first-order serial correlation. Thus, the hypothesis of a significant linear relationship between per capita investment and the explanatory variables is validated.

Table 11: Estimated coefficients for money supply equation

Eqns.	Models	C	\dot{M}_2 _(t-1)	\dot{M}_2 _(t-2)	FD_{nom} _(t-1)	FD_{gdp} _(t-1)	GNP _(t-1)	$EXTD_{gdp}$	R ²	D.W. stat.
(Equ. 2)	$\dot{M}_2 = \alpha_0 + \alpha_1 \dot{M}_2$ _(t-1) + $\alpha_2 \dot{M}_2$ _(t-2) + $\alpha_3 FD_{gdp}$ _(t-1) + ε_t	2.499 (0.884)	0.391 (2.190)**	-0.279 (-1.412)	-	-0.0005 (-0.0006)	-	-	0.157	2.081
(Equ. 3)	$\dot{M}_2 = \beta_0 + \beta_1 \dot{M}_2$ _(t-1) + $\beta_2 \dot{M}_2$ _(t-2) + $\alpha_3 FD_{nom}$ _(t-1) + $\alpha_4 GNP$ _(t-1) + ε_t	-27.969 (-0.169)	0.362 (2.024)**	-0.304 (-1.722)***	0.043 (1.397)	-	-0.268 (-0.161)	-	0.220	2.110
(Equ. 1a)	$\dot{M}_2 = \gamma_0 + \gamma_1 \dot{M}_2$ _(t-1) + $\gamma_2 \dot{M}_2$ _(t-2) + $\gamma_3 EXTD$ + ε_t	4.596 (1.116)	0.380 (2.144)**	-0.281 (-1.576)	-	-	-	-0.029 (-0.674)	0.170	2.114
	$\dot{M}_2 = \gamma_0 + \delta_1 \dot{M}_2$ _(t-1) + $\delta_2 EXTD$ + ε_t	4.135 (1.011)	0.290 (1.713)***	-	-	-	-	-0.029 (-0.664)	0.101	1.834

Source: Author's Computation using E-views 10

Table 12: Estimated coefficients for Inflation equation

Eqns.	Models	C	\dot{M}_2	\dot{M}_2 _(t-1)	\dot{M}_2 _(t-2)	FD_{gdp} _(t-1)	\dot{P} _(t-1)	$EXTD_{gdp}$	AR(1)	R ²	D.W. stat.
(Equ. 5)	$\dot{P} = \phi_0 + \phi_1 \dot{M}_2 + \phi_2 \dot{M}_2$ _(t-1) + $\phi_3 \dot{M}_2$ _(t-2) + $\phi_4 FD_{gdp}$ _(t-1) + μ_t	-93.170 (-108.08)**	-0.10 (-1.89)***	0.04 (0.69)	0.01 (0.229)	0.32 (1.18)	-	-	-	0.15	0.87
(Equ. 5)	$\dot{P} = \phi_0 + \phi_1 \dot{M}_2 + \phi_2 \dot{M}_2$ _(t-1) + $\phi_3 \dot{M}_2$ _(t-2) + $\phi_4 FD_{gdp}$ _(t-1) + μ_t	-93.47 (-46.78)**	-0.10 (-2.62)**	0.04 (1.09)	-0.03 (-0.51)	-0.13 (-0.65)	-	-	0.68 (4.76)**	0.50	1.72
(Equ. 6)	$\dot{P} = \varphi_0 + \varphi_1 \dot{M}_2$ _(t-1) + $\varphi_2 \dot{M}_2$ _(t-2) + $\varphi_3 FD_{gdp}$ _(t-1) + $\varphi_4 \dot{P}$ _(t-1) + μ_t	-33.575 (-2.19)**	-	0.06 (1.32)	-0.01 (-0.16)	0.03 (0.12)	0.64 (3.91)**	-	-	0.37	1.86
(Equ. 5a)	$\dot{P} = \theta_0 + \theta_1 \dot{M}_2 + \theta_2 \dot{M}_2$ _(t-1) + $\theta_3 \dot{M}_2$ _(t-2) + $\theta_4 EXTD$ + μ_t	-96.61 (-91.96)**	-0.08 (-1.79)***	0.04 (0.91)	-0.01 (-0.17)	-	-	0.04 (3.97)**	-	0.42	1.29
(Equ. 5a)	$\dot{P} = \theta_0 + \theta_1 \dot{M}_2 + \theta_2 \dot{M}_2$ _(t-1) + $\theta_3 \dot{M}_2$ _(t-2) + $\theta_4 EXTD$ + μ_t	-95.35 (-59.43)**	-0.10 (-2.42)**	0.04 (1.07)	-0.01 (-0.24)	-	-	0.03 (1.78)***	0.44 (2.50)**	0.51	1.83
(Equ. 5a)	$\dot{P} = \sigma_0 + \sigma_1 \dot{M}_2 + \sigma_2 \dot{M}_2$ _(t-1) + $\sigma_3 EXTD$ + ε_t	-96.62 (-97.00)**	-0.08 (-1.87)***	0.04 (0.94)	-	-	-	0.04 (4.12)**	-	0.42	1.34
(Equ. 5a)	$\dot{P} = \sigma_0 + \sigma_1 \dot{M}_2 + \sigma_2 \dot{M}_2$ _(t-1) + $\sigma_3 EXTD$ + ε_t	-95.56 (-61.30)**	-0.10 (-2.48)**	0.04 (1.03)	-	-	-	0.03 (1.78)***	0.44 (2.54)**	0.50	1.75

Source: Author's Computation using E-views 10

Table 13: Summary of GMM estimates for Output Equation

Variable	Output Equation [Dependent: GDP]				
	Ordinary Estimates		Cochrane Orcutt estimates		
	Coefficient	t-Statistics		Coefficient	t-Statistics
C	-3.314	-1.913**	C	-6.991	-4.231**
GDP(-1)	0.664	4.889**	GDP(-1)	0.798	10.385**
LB	0.167	1.357	L _B	0.440	4.154**
PCI	0.508	2.026**	PCI	0.125	1.212
			AR(1)	0.139	1.194
R-Squared = 0.923 Adj. R-Squared = 0.916 Durbin Watson stat = 1.281			R-Squared = 0.952 Adj. R-Squared = 0.946 Durbin Watson stat = 1.942		
Output Equation: $GDP = \sigma_0 + \sigma_1 L_B + \sigma_2 PCI + \varepsilon_t$					

Source: Author's Computation using E-views 10

N.B: GDP = Gross Domestic Product (\$US current), L = Labour Participation Rate (percent total population 15-64, PCI = per capita Investment (\$us current); ** represents 0.05 significance level; *** represents 0.1 significance level; variables are expressed in their logarithmic form

Table 14: Summary of GMM estimates for Investment Equation

Dependent Variable: PCI		
Variable	Coefficient	t-Statistics
C	4.387	6.770**
PCI(-1)	0.360	3.773**
INT	-0.090	-3.056**
GDP	0.187	2.408**
EXDR	-0.309	-7.363**
EDS	0.039	1.250
Adj. R-Squared = 0.903 Durbin Watson stat = 2.101		
Investment Equation: $PCI = \theta_0 + \theta_1 INT + \theta_2 GDP_{gr} + \theta_3 EXDR + \theta_4 EDS + \mu_t$		

Source: Author's Computation using E-views 10

N.B: PCI = per capita Investment (\$us current), INT = Interest rate (Commercial Bank lending rate, GDP = Domestic Product (\$US current), EXDR = External debt-export ratio, EDS = Debt service (percent of exports of goods)

** represents 0.05 significance level; *** represents 0.1 significance level

The results offer a confirmation of the debt overhang hypothesis for the Nigerian economy. The debt overhang variable, proxied by the ratio of external debt to GDP, is negative and statistically significant at 5 percent level. The elasticity of investment with respect to debt overhang variable is negatively signed and statistically significant with value (-0.309). This implies that a 10 percent increase in the debt-to-GDP ratio results in a 3.09 percent decrease in private investment; and this confirms the 'crowding out' effect external debt to GDP.

Simulations

A historical *ex post* simulation is performed across the estimation period of the macro-econometric model. We used the *ex post* simulations to test the model in the manner of examining how well it predicts historic episodes. The tests include the root mean square, the root mean squared percent error and the Theil's inequality coefficient. From the historical simulations as evident in Table 14, the Theil's inequality coefficients for growth, investment and external debt are very small, signifying a close fit between the simulated and actual series.

Table 16 shows the various debt stock reduction scenarios and their corresponding impact on growth and investment. The assumed debt reduction scenarios (5 percent, 10 percent, 20 percent and 50 percent) as represented in Table 16 for the period 2007 to 2017 capture the period after debt forgiveness by the Paris Club and other creditors.

From Table 15, a 50 percent reduction in external debt, for instance, will increase output, on the average, from about 4.64 percent) actual to 8.52 percent, while on the other hand; investment will increase from the actual (-0.36) percent to 6.43 percent. The implication of this outcome is that, if there had been a 50 percent debt stock reduction from 2007 to 2017, the average growth rate in Nigeria during this period would have been a healthy 8.52 percent instead of 4.46 percent achieved without debt reduction. Also, a 50 percent reduction in external debt stock during the period, 2007 to 2017, would have generated a healthy 6.43 percent average investment growth as against the anaemic (-0.36 percent) recorded.

Conclusively, it is therefore necessary to examine and re-examine policies regarding the debt position as it has been revealed from the Lecture that debt overhang and crowding out effect, limit output growth and investment of the Nigerian economy. This precisely, calls for implementation of debt reduction policies.

Table 15: Summary of Historical Simulation

Variables	Root Mean Square Error	Bias Proportion	Variance Proportion	Covariance Proportion	Theil's Inequality Coefficient
GDP	0.092	0.0001	0.004	0.995	0.007
PCI	0.081	0.0000	0.016	0.983	0.007
EXDR	0.366	0.0002	0.120	0.879	0.048

Source: Author's Computation; N.B: All variables expressed in logarithmic form

Table 16: Policy Simulation: Output and Investment under different debt reduction scenarios

Year	Actual output	Output under debt stock reduction scenarios				Year	Actual Investment	Investment under debt reduction scenarios			
		5 %	10 %	20 %	50 %			5 %	10 %	20 %	50 %
2007	6.6	7.0	7.1	7.3	7.6	2007	-21.9	5.3	5.4	5.5	5.6
2008	6.76	7.03	7.20	7.50	8.01	2008	-2.60	5.30	5.42	5.63	6.00
2009	8.03	7.03	7.20	7.50	8.01	2009	9.92	5.31	5.48	5.77	6.20
2010	8.00	7.25	7.54	7.99	8.51	2010	4.01	5.56	5.78	6.13	6.55
2011	5.30	7.18	7.52	8.00	8.47	2011	-8.24	5.50	5.75	6.13	6.52
2012	4.23	7.40	7.77	8.27	8.67	2012	2.55	5.47	5.76	6.15	6.49
2013	6.67	7.33	7.73	8.23	8.57	2013	7.86	5.49	5.81	6.20	6.49
2014	6.30	7.71	8.13	8.62	8.90	2014	13.4	5.80	6.14	6.53	6.77
2015	2.65	7.66	8.11	8.57	8.81	2015	0.60	5.81	6.16	6.54	6.74
2016	-1.61	7.80	8.26	8.71	8.90	2016	-6.66	5.78	6.14	6.51	6.67
2017	0.805	7.89	8.36	8.78	8.93	2017	-2.97	5.88	6.26	6.60	6.73
Avg.	4.64	7.40	7.73	8.06	8.52	Avg.	-0.36	5.56	5.82	6.15	6.43

Source: Author's Computation using E-views

Fitting the Laffer curve

The existence of a Debt *Laffer* Curve has been used as an argument that is in the creditors’ interest to forgive some of the external debt of a heavily indebted country that is on the wrong side of the curve (Classens, 1990). Like earlier studies, our findings confirm the presence of non-linearity (inverted U shape) when debt is measured relative to GDP and growth of GDP. The empirical results on the impact of doubling debt beyond the estimated threshold based on the regression slope at high debt levels suggest that the marginal effect of an increase in debt on annual per capita growth is statistically significant, averaging one third to one half of a percentage point, and this effect is systematically over-estimated in regressions that do not account for endogeneity. Nigeria does not seem to be on the wrong side, especially given the fact that the external debt stock used in the analysis did not disaggregate between the different types of debt held – commercial or multilateral and neither was the maturity structure of the debt taken into cognizance.

Table 17: Summary of Least Square results (non-log estimates)

Variable	Dependent: RGDPgrowth				Dependent: RGDP				
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4	
C	0.51 (0.37)	1.81 (1.19)	-0.63 (-0.38)	0.44 (0.27)	3.56 (2.88)**	4.46 (3.21)**	2.69 (1.82)** *	3.45 (2.32)**	
EXDgni	0.001 (0.07)	0.02 (0.94)	0.05 (1.19)	0.10 (2.34)**	0.001 (0.05)	0.01 (0.71)	0.03 (1.01)	0.08 (1.83)***	
(EXDgni) ²	-	-	-0.0002 (-1.25)	-0.0004 (-2.13)**	-	-	-0.0002 (-1.06)	-0.0003 (-1.68)	
EXDs	-	-0.18 (-1.80)***	-	-0.26 (-2.51)**	-	-0.13 (-1.36)	-	-0.18 (-1.89)***	
R ²	0.0001	0.08	0.04	0.19	0.0001	0.05	0.032	0.13	
D.W	0.75	0.87	0.79	1.07	0.94	1.00	0.99	1.16	
Inflection Point = -0.0004 < 0 Turning Point 0.000001				Inflection Point = -0.0006 < 0 Turning Point 0.000001					

Source: Author’s Computation N.B (EXDgni = External debt ratio (percent of GNI), EXDs = External debt service (percent of exports)

As seen in the columns 5 and 9 (model 4) in Table 17 and Figure 9, the coefficient of the quadratic term of external debt is significant and negative with coefficient values of (-0.0004) and (-0.0003) respectively, implying a concave down *Laffer* curve using the growth of real GDP as dependent variable. Intuitively, the results of column 5 for instance, show the existence of an inverted-U shape relationship between debt stock and growth. This relationship explains that an increase in debt stock has positive effect on economic growth until it reaches the optimal level (up to a certain level). Beyond the threshold level, an increase in stock of indebtedness is associated with a negative effect on growth. The negative effect could be related to the fact that borrowed capital has not been efficiently utilized in a manner that would spur investment and economic growth. Furthermore, too

much debt holding could squeeze investment through debt repayment and eventually results in loss of output to foreign creditors.

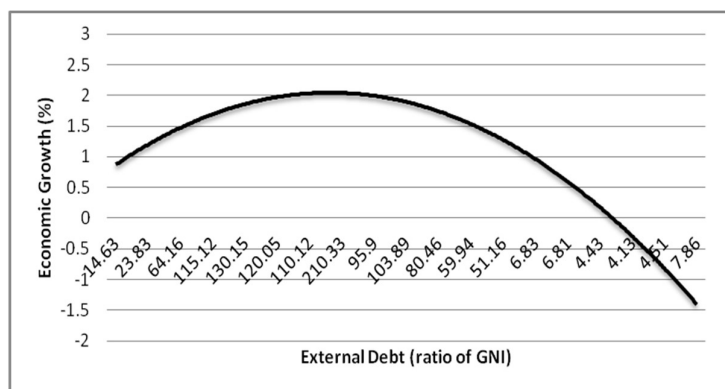


Figure 9: The Derived Debt-Laffer Curve without Controls

Political Performance of Governance, Human Capacity Development and External Debt

Foreign capital and institutional quality play important roles in the development process of developing countries. In all ramifications, developing nations fell short of funds required to spur the economic growth, just as they equally face the decline in the quality of governance (Qayyum and Haider, 2012). In the literature, there is the argument that the difference in the economic performance or per capita income across countries is due to the differences in the economic institutions (Acemoglu and Robinson, 2008; and Hall et al., 2010). It is also unequivocal that institutional equilibrium depends highly on the political environment and if there is no political will on the part of leaders, it becomes very hard to restructure economic institutions. While it is not an easy task for developing countries to efficiently utilize foreign debt due to vested interest, rent seeking behavior and state capture, it is only in the presence of good macroeconomic policies and sound state institutions that external debt impacts positively on economic growth (Qayyum and Haider, 2012).

Sequel to the above, we estimated an augmented debt-growth model with the inclusion of governance indicators (control of corruption and government effectiveness) as shown in Table 18. The square of debt to GDP could not establish a nonlinear relationship to economic growth, which implies that there is neither existence of a U-shaped curve, nor an inverted one. The ability to control corruption shows a negative but significant relationship to economic growth. This implies that government's institutions which necessitate the control of corruption are not effective in engendering the required outcome to growth. This further implies that overall, policy stance of governments in Nigeria over the period has not been efficient; such retards economic growth and

portrays possible existence of state capture. Thus, the possibilities of economic change as Rodrik (2013) reiterated, are limited by the realities of political power and elite or state capture.

From the results in Table 19, Regulatory Quality exhibits a negative and significant effect on economic growth with coefficient value of (-0.271). This implies that poor quality of regulations inhibits institutional arrangements aimed at improving growth-promoting institutions. This calls for improved regulatory quality which will necessitate and promote economic growth through creating effective and efficient incentives for private sector development.

Similarly, Rule of Law shows a negative and insignificant effect on economic growth with coefficient value (-0.014). This further confirms that the Nigerian economy has not been able to effectively implement growth-promoting institutions (in the form of protection of property rights and contractual rights by the government to make markets more effective and efficient) and this could have led the poor-growth trajectory.

Table 18: Summary of GMM results (non-log estimates) with the inclusion of Governance Indicators

Dependent Variable: RGDP								
Variable	Control of Corruption				Government Effectiveness			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
C	-0.72 (-0.05)	8.76 (0.54)	1.958 (0.104)	6.30 (0.36)	2.17 (0.15)	11.50 (0.74)	4.89 (0.28)	33.30 (4.17)**
RGDPg(-1)	0.63 (2.14)**	0.59 (2.00)**	0.63 (2.13)**	0.23 (0.53)	0.69 (2.49)**	0.64 (2.30)**	0.69 (2.56)**	0.92 (6.88)**
EXDgni	0.10 (2.42)**	-0.003 (-0.05)	0.19 (0.83)	-0.26 (-3.12)**	0.12 (2.53)**	0.001 (0.01)	0.21 (0.84)	-0.190 (-1.2)
(EXDgni) ²	-	-	-0.02 (-0.38)	0.01 (1.12)	-	-	-0.02 (-0.40)	0.01 (0.56)
EXDs	-	0.06 (1.74)	-	0.16 (10.93)**	-	0.06 (1.70)	-	0.14 (4.28)**
L	3.98 (2.76)**	4.51 (3.23)**	3.61 (1.94)***	6.206 (4.28)**	3.79 (2.57)**	4.40 (3.31)**	3.41 (1.84)***	3.89 (4.28)**
K	-0.41 (-0.91)	-0.60 (-1.34)	-0.46 (-0.95)	-0.39 (-1.73)	-0.48 (-1.13)	-0.67 (-1.61)	-0.53 (-1.15)	-0.88 (-4.52)**
LEB	-1.59 (-0.51)	-3.97 (-1.16)	-1.99 (-0.56)	-3.84 (-0.97)	-2.24 (-0.78)	-0.08 (-0.52)	-2.66 (-0.81)	-9.97 (-6.06)**
TOT	0.03 (0.21)	-0.06 (-0.39)	0.02 (0.11)	-0.07 (-0.49)	0.01 (0.09)	-0.08 (-0.521)	0.001 (0.01)	-0.24 (-3.38)**
INF	0.012 (0.21)	0.04 (0.80)	0.02 (0.34)	-0.07 (-0.76)	0.02 (0.51)	0.047 (1.004)	0.02 (0.52)	0.08 (1.58)
Concorrupt	-0.052 (-1.47)	-0.04 (-1.09)	-0.05 (-1.04)	-0.26 (-2.95)**				
Goveff					-0.04 (-0.95)	-0.021 (-0.478)	-0.02 (-0.38)	-0.04 (-0.38)
R ²	0.98	0.98	0.98	0.98	0.98	0.981	0.98	0.98
D.W	1.83	2.25	1.82	2.49	1.780	2.236	1.78	2.11
	Inflection Point = -0.018 < 0 Turning Point 0.0023				Inflection Point = -0.02 < 0 Turning Point 0.0021			

Source: Author's Computation

N.B (EXDgni = RGDPgwth = growth of real GDP (percent), GDPgwth = growth of GDP (percent), External debt ratio (percent of GNI), EXDs = External debt service (percent of exports), L = Labour participation rate (percent of total population), K = gross capita formation (percent of GDP), LEB = Life

expectancy (human capital component), TOT = terms of trade, INF = Inflation rate (percent, annual CPI), Conccorrupt = (control of corruption), Goveff = Government effectiveness

Table 19: Summary of GMM results (non-log estimates) with the inclusion of Governance Indicators

Dependent Variable: RGDP								
Variable	Regulatory Quality				Rule of Law			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
C	-8.37 (-0.57)	-0.08 (-0.01)	-7.11 (-0.37)	-0.72 (-0.15)	-6.41 (-0.45)	10.39 (0.66)	3.92 (0.21)	12.28 (0.69)**
RGDPg(-1)	0.59 (2.00)**	0.55 (1.73)***	0.60 (1.91)***	-0.08 (-0.24)	0.63 (2.27)**	0.61 (2.16)**	0.68 (2.46)**	0.62 (2.19)**
EXDgni	0.11 (2.30)**	0.01 (0.15)	0.12 (0.49)	-0.49 (-4.53)**	0.11 (2.30)**	-0.01 (-0.08)	0.21 (0.85)	0.06 (0.27)
(EXDgni) ²	-	-	-0.003 (-0.07)	0.19 (3.61)**	-	-	-0.02 (-0.43)	-0.01 (-0.32)
EXDs	-	0.05 (1.51)	-	0.19 (11.66)**	-	0.07 (1.80)***	-	0.06 (1.71)
L	4.86 (3.29)**	5.17 (3.32)**	4.82 (2.46)**	8.72 (6.11)**	4.53 (3.24)**	4.46 (3.17)**	3.46 (1.85)***	4.15 (2.45)**
K	-0.19 (-0.46)	-0.35 (-0.88)	-0.19 (-0.43)	-0.45 (-2.42)**	-0.23 (-0.55)	-0.65 (-1.49)	-0.51 (-1.06)	-0.68 (-1.45)
LEB	-0.30 (-0.10)	-2.32 (-0.72)	-0.61 (-0.16)	-2.64 (-0.83)	-0.64 (-0.23)	-4.36 (-1.33)	-2.42 (-0.71)	-4.635 (-1.30)
TOT	0.03 (0.18)	-0.05 (-0.30)	0.01 (0.08)	-0.07 (-0.51)	0.02 (0.15)	-0.07 (-0.48)	0.01 (0.04)	-0.08 (-0.47)
INF	0.03 (0.83)	0.07 (1.51)	0.03 (0.70)	-0.09 (-1.56)	0.03 (0.85)	0.04 (0.96)	0.02 (0.46)	0.05 (1.01)
Regqlty	-0.04 (-1.626)	-0.04 (-1.06)	-0.04 (-0.88)	-0.27 (-4.97)**				
Rulaw					-0.04 (-1.22)	-0.02 (-0.67)	-0.02 (-0.46)	-0.01 (-0.34)
R ²	0.979	0.98	0.98	0.98	0.98	0.98	0.98	0.98
D.W	1.807	2.10	1.80	2.35	1.84	2.26	1.80	2.22
	Inflection Point = -0.003 < 0 Turning Point 0.0001				Inflection Point = -0.02 < 0 Turning Point 0.002			

Source: Author's Computation

N.B (EXDgni = RGDPgwth = growth of real GDP (percent), GDPgwth = growth of GDP (percent), External debt ratio (percent of GNI), EXDs = External debt service (percent of exports), L = Labour participation rate (percent of total population), K = gross capita formation (percent of GDP), LEB = Life expectancy (human capital component), TOT = terms of trade, INF = Inflation rate (percent, annual CPI), Regqlty = Regulatory Quality, Rulaw = Rule of Law

The Chinese Loans and Nigeria's Economic Wellbeing.

The sharp rise in the external indebtedness of the Nigeria has raised some disquiets, given that most of the recent loans from China were accessed through non-concessional window of multilateral, bilateral and commercial creditors, and others through the international bond markets. The challenge in accessing non-concessional loans is that they are provided at a market-based interest rates with short moratorium. Such associated loans, as China's Belt and Road Initiative (BRI), which often entails lending to sovereign borrowers to fund infrastructural development, have less stringent conditions to access. They are also more associated with high risk and laced with difficult repayment terms. A major challenge is the fact that the debt relief programme provided under the HIPC initiative and the MDRI may have incongruously opened borrowing space for beneficiaries and hence the obsession for non-concessional loans at all cost by most of them. The fear is that this may result in

‘free rider problem’. Accordingly, if debt sustainability conditions and other required considerations provided in the Debt Sustainability Framework (DSF) of concessional loans not incorporated into such new lending decisions, then mismanagement concerns need be expressed. A potential consequence of such mismanagement is a rapid re-accumulation of external debt as well as increased demand for IDA grants (WB-IDA, 2019) in forthcoming years.

Although non-concessional loans like BRI (Chinese loans) have been judged to be relatively small for Nigeria, the IMF has nevertheless warned against rising debt among West Africa countries including Nigeria, particularly those that already carry heavy debt burden (Cabo Verde, The Gambia, Ghana, Mauritania and Togo). The warning has further heightened the criticism against China’s aggressive push into Africa and its “debt-trap” strategy, just as members of the US Senate bipartisan committee referred to the Chinese economic incursion in the guise of giving out ‘cheap loans’, as predatory practices. In some cases, the Chinese loans have resulted in some countries applying for bail-out loans from the IMF to repay loan arrears to China. There is no doubt that China has joined the thrifty north to further splutter the impecunious south. Many so-called Chinese financed projects to Africa are in fact loans from Chinese banks aimed at promoting exports of Chinese equipment and building materials.

In 2016, for instance, the IMF agreed to extend a \$1.5 billion bailout loan to Sri Lanka due the country’s indebtedness to China. This was after Sri Lanka granted a 99-year lease of the Hambantota Port to China arising from the country’s inability to pay over \$1 billion owed to China. Early in 2018, Bangladesh, citing incidence of alleged corruption against the state-backed Chinese Harbor Engineering Company (CHEC), terminated a plan to have CHEC (Chinese state-run firm) construct a 214-kilometer highway from Dhaka (Capital city) to its northeast (Lindberg and Lahiri, 2018). Malaysia has equally rescinded some high-profile projects such as the 688km East Coast Railway Link (ECRL) estimated to cost US\$13.4 billion and a US\$2.5 billion agreement for an arm of a Chinese energy giant to construct gas pipelines. These projects which the Malaysians cited as bad deals, were mostly to be financed by the Chinese government-owned bank (Export and Import Bank of China).

Ethiopia and Kenya are struggling to manage debt incurred from Chinese-built railways. Other examples are Djibouti, Myanmar and Montenegro as countries that received cash from China’s Belt and Road Initiative, only to find out that the Chinese investments fell short of being supportive, just as the closed bidding processes resulted in inflated contracts and influx of Chinese labour at the expense of local workers (New Straits Times, 2018). A \$600 million Chinese loan to fund the

installation of CCTV cameras across the Nigerian capital Abuja was mired in corruption and scandal (Fawehinmi, 2018).

In the reference to Table 20, Nigeria’s economic performance index was below 80 per cent from 2006 to 2018, while the country’s Misery index rose steadily from 2006 to 2018 where it stood at almost 84 per cent. The implication of this is that only 16 per cent of Nigerians are not miserable and they control the wealth and resources of the country. Income per capita which was about \$3,000.00 in 2014 declined sharply and was \$1,500.00 in 2017. These are lessons and food for thought for ECOWAS member countries particularly, Nigeria.

Table 20: Economic Performance Index; Misery Index and Discomfort Index

YEAR	EPI	MI	DI
2006	76.1	34.8	29.7
2010	68.2	30.3	34.8
2013	67.8	50.8	37.2
2014	73.8	55.08	33.4
2014	68	57.27	36.7
2016	56.4	76.7	52.3
2017	58	85.7	54.3
2018	60.2	84.5	54.7

Note: EPI = Economic Performance Index; MI = Misery Index; DI = Discomfort Index.

VII

Policy Implications and Suggestions

Mr. Chairman, we have sought from the exposition that foreign capital and institutional quality play important roles in the development process of developing economies as experience of the *Asian Tigers* (at least, Hong Kong, Singapore, South Korea and Taiwan) have shown. Debt is a double-edged sword: it is useful if in the future, the proceeds from its investment pay off the debt in its entirety, or at least, its derived social benefits outweigh its cost. If otherwise, the result is a debt cycle that is difficult to get out of.

Why Africa entered the 21st century as the poorest, the most technologically backward, the most debt-distressed and the most marginalized region in the world, is food for thought. This is most worrisome, just as attempts made to understand why wherever people of black descent live globally, are the most impoverished and penurious. Efforts at explaining the contempt at which people of black descent are universally perceived as “lesser beings”, are beyond mere academic dexterity. Although anti-thesis questions theological connotations that may imply a cursed race as mere heresy,

realities seem to point to the direction that challenges which afflict the “Blackman’s abode” globally, are innumerable, incomprehensible and irremediable. But economic science remains a science of alternative prescriptions, choices and consequences!

In lieu of the above, we estimated an augmented debt-growth model with the inclusion of governance indicators (control of corruption and government effectiveness) in an attempt to explain Nigeria’s dilemma as the largest concentration of the Blackman. The estimated results established a nonlinear inverted relationship between debt and economic growth, on the one hand, and on the other hand, an augmented money function that confirmed expansionary fiscal policy financed by excessive borrowing which fueled inflation. The findings further reveal that only 16 per cent of Nigerians (small dysfunctional group of elites and political masquerades who disguise as leaders) are not miserable, yet, they control the wealth and resources of the country.

The ability to control corruption shows a negative but significant relationship to economic growth. This implies that government’s institutions which necessitate the control of corruption are not effective enough in engendering the required outcome for growth. It further indicates that overall, policy stance of governments in Nigeria over the period has not been efficient and fair in resource redistribution; such, retards economic growth and portrays the existence of state capture, probably by a cabal. Accordingly, the possibilities of economic change are limited by the realities of political power and elite capture, just as governance mechanisms are beset by high inequality, nepotism and civic malaise, yet, we “Blame Economists for the Mess We’re In”. Here, lies the tyranny of political economy!

Mr. Vice Chancellor, my humble submission from recent developments having analyzed the records in the last three decades and simulated various scenarios, is that Nigeria’s development policy has worsened in resolving its development problems. This is same conclusion, Dr. Bright Ekuerhare, a radical Professor of Economics and one of Nigeria’s foremost in the discipline reached in the first inaugural lecture of the Delta State University, 1997.

The difference in our economic performance when compared to some of the country’s peers in 1970s (of *Asian Tigers*), is due to the differences in our economic institutions and chemistry. It is unequivocal that institutional equilibrium depends highly on the political environment. The structural weaknesses of the Nigerian economy are depressingly familiar- a *casino* economy that remains dependent on oil for 90 percent of its export earnings, its leadership style since the mid-1970s is a

fairy tale of scalawags, deeply rooted in the structural weaknesses of its economic institutions controlled by boogymen. Here lies the tyranny of black political economy!

What's more? Nigeria's economic growth is sluggish despite a rapidly growing population and one of the country's biggest economic problems is its growing public debt. The nation's debt now exceeds \$85 billion, made up of \$55.6 billion domestic debt and over \$25 billion in external debt as at March 2019. The total debt structure and its total stock is about where it was in 2005-06, just before Nigeria benefited from the massive debt relief in 2005. To have squandered the debt reduction in just fourteen years and have no tangible economic progress to show for it, is a tragedy beyond hallucination. In the course of preparing this lecture, the World Bank and Nigeria were already in talks for as much as \$2.5 billion in a new tranche of concessionary lending to fill revenue gaps, having received \$2.4 billion in 2018. Indeed, a thrifty north and an impecunious south!

In 2017 for instance, Nigeria's real GDP grew at 0.8 percent, while the total population expanded by 2.6 percent to 202,203,725. The external debt stood at \$18,913.44 million in 2017 and grew at 65.81 percent from \$11,406.27 million in 2016. What these figures suggest is that the growth rate of Nigeria's population and external debt far exceeds its real GDP growth. This indicates that each person living in Nigeria owe an external debt of \$94; translating to ₦33,840.00. However, if domestic commitments of \$52,085.82 million are added, Nigeria's total debt stock of \$70,999.26 million denotes that every individual living in Nigeria owes \$257.59 or ₦92,732.68. Mr. Chairman, what a tragedy!

Debt servicing costs make up two-thirds of retained government revenue and the country's debt profile is increasingly made up of commercial debt. The recently issued Eurobond in London, came at a relatively high yield and this makes the economy susceptible to external shocks walking on the pathway to another recession if there be a sustained drop in oil prices. While ICT revenue generation alone contributed USD 164.3 billion (7.7 percent) to India's economy in 2018, Nigeria's oil export revenue in 2018 that was a relatively paltry USD 54,513 million, contributed 92 percent of earnings. A second *Hydra* which conjoined in the total external debt stock are Chinese loans which stood at \$4,831.42 million in 2017 from \$400 million in 2010 and are not concessional in nature. Although it should be noted that China is not Africa's largest "donor". That honor still belongs to the United States (leader of the thrifty north).

While it is not an easy task for developing countries to efficiently utilize foreign debt due to vested interest, rent seeking behavior and state capture, it is only in the presence of good macroeconomic policies and sound state institutions that external debt impacts positively on economic growth. This is lacking in Nigeria. One may also argue that government should reduce borrowing as increased borrowing has not necessarily translated to poverty alleviation. That may not be, what we need is to build a strong knowledge based and dynamic economy that emphasize equality more than efficiency; and economy that is diversified from oil reliance to generate jobs and reduce unemployment rate especially among youths. Failure to tackle income inequality and youth unemployment, amid warnings is a time bomb. The problem may not be how to curtail the external debt problems; in real terms, capital does not necessarily flow from North (developed countries) to South (low-income countries). It is the disparity between rich and poor, more than poverty itself, is what generates anti-government sentiment and could certainly fuel the perceived civil unrest down the road. Unless this political tyranny is aggressively addressed, the thrifty north will perpetually and round trippingly use the resources of south to enslave impecunious south. Maybe, the south cannot administer themselves, simply because the south is perturbed by nature and black in skin! Mr. Vice-Chancellor, we may overcome by confronting the uncivil black tyrants, this is our chance!

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Table 4. EXTERNAL LOANS THAT DID NOT WORK: A FEW EXAMPLES

STATE	LOAN AMOUNT AND TERMS	CREDITOR	YEAR OF LOAN	PROJECT HISTORY AS OF MARCH 1996
ABIA/OLD IMO STATE. Financing of Several Manufacturing projects such as International Glass Industries, Aba, Modern Ceramic Ltd, Imo Concorde Hotel, Owerri, Umuahia Urban Water works	French Francs 382, 147, 250 plus Supplemental loan Swiss Francs 15,300,000	Banco del Gorthardo Germany Creafin S.A. Zurich	1982	Records do not indicate how loan was split between the projects although the supplemental loan was said to have gone as additional financing to expand capacity for the Umuahia water works. The water works was completed but only functioned partially. Many machines broke down with no spare parts. No operating capital. Regular Power supply a problem. No evidence that supplemental loan was invested in additional capacity as planned. No information in the state of the other projects.
Arochukwu-Ohafia Water Scheme	Pound Sterling 12,360,000	Lazard Brother, London	N/A	This project appears not to have been implemented and loan cannot be accounted for. Some equipment seems to have been purchased.
Abia Golden Chicken Farms Ogwe, Ukwa Local Government Area	Suppliers Credit of Deutschemarks 24,457,920. Repayment in five years with 2 years grace period.	Lohmann Export GMBH, Germany. State Government expected to contribution counterpart funds of Deutschemarks 6,112,400 equivalent to project	Oct-86	Turnkey Build Operate Transfer after six years. BCT contact with Lohmann Export for poultry farm. Project not implemented as envisaged. 140 containers of equipment and spare parts imported and lying around project site are unused. Project said to have failed due to incompetence on part of government officials and contractors and lack of follow-through by successive state administration.
Anambra Ihiala Carpet Manufacturing Project.	Pounds Sterling 10,039,370 Eurodollars \$3,100,000	Samuel Montagu U.K.		Cross Ocean Ltd. a U.K. Company and Multi Source, Ltd., a Nigeria Company were supposed to implement this project. Neither of them delivered. Instead they all alleged to have participated in diversion of the loans into the private accounts of high government officials. Some of these officials were later indicted by an investigative panel and requested to refund the monies. There is, however, no documentary evidence that the refunds were made.

ANAMBRA Specialist Hospital Abakiliki and 23 rural clinics in the then Anambra and New Enugu	Spanish Pesetas 220,011,160		N/A	Infrastructure for Hospital and Clinics built. Equipment supplied to the hospital and carted away by Director in charge to his private clinic. No supervisor or follow-through by the state Government.
AKWA IBOM Qua Steel Projects, Ltd.	Deutschmarks 73,080,000	Consortium of 13 banks led by manual Montagu Ltd., London	16-Apr-81	Daniel SPA of Italy was contracted to build the steel rolling mill financed by the loan. The factory was successfully built and started production but much below capacity due to shortage of inputs. The Aladja Steel Complex was supposed to supply the 500-metric ton of billets per month needed by Qua but could only supply 60 metric tonnes. The factory closed due to closure of Aladja.
Sunshine Batteries, Ikot Ekpene	Deutschmarks 62.33million	Kleokner Ing of Germany	1980	Loan was contracted by former Cross River State Government. Factory was built and produced at full capacity initially. But factory subsequently collapsed and closed due to incompetent management, State Government interference and closure of parent company, Sunshine of Germany which left the factory stranded for spare parts.
AKWA IBOM International Biscuit Factory Ukang, Ikot Ekpene	Austrian Shillings 86.52 million	Austria	January, 1980	Factory began operation but subsequently closed due to Federal Government ban on wheat imports its basic raw material. Factory extensively vandalized after closure
DELTA: Warri Farm Project	Pounds Sterling 9,578.151	Lazard Brothers London	Sep-93	Messrs. Rockline Ltd. Were contracted to implement large scale fish, shrimp, cassava production and build a sawmill. Product was not executed. Machinery and equipment were purchased and abandoned at the site to be looted by thieves and spoilt by weather.
ENUGU: 3 projects: Enugu Aluminum, Ohebe Dim; Sunrise Flour Mill, Emene; Enugu Building Materials Ltd., Ezzamgbo	Deutschemarks 95 million	Consortium of European Banks	N/A	Only one of the three projects is operational. Sunrise Flour Mills is commercialized. And under private sector management. The other two projects collapsed due to lack of spare parts, mismanagement, etc.
EDO: Three Road Projects 2) location in new Delta State) Ekiadolor – Okolihua, Elume-Gbimiadake etc Ughelli-Kiagbodor	Pound Sterling 27,647,470	UK Expect Credit Guarantee Agency ECGD and Eurodollor		Contractor paid 85 percent of contract amount but abandoned roads with only one third of the job done.

IMO: Imo Modern Poultry, Avutu	US\$32 Million	N/A	1981	Poultry was built and generated funds to pay \$9.6 million loan. Subsequently, poor management, government interference and shortage of operating funds led to its demise.
Paper packaging Industries Ltd. Owere-Ebeiri	French Francs 95,551,848	Banque Nationale de Paris, France	Nov-80	Project was completed and began production. It was supposed to generate enough resources to repay debt and FF47.7 million was repaid. But plant now produces at 5 percent capacity. Mismanagement and lack of working capacity are problems even under partial privatization and private sector management.
KADUNA: Purchase of 100 Buses	French Francs 60,605,315	Banque National de Paris, France	Jul-87	The 100 buses were to be purchased to boost transport network of the State. Kaduna State officials claimed no knowledge of this loan
KWARA Jebba Paper Mill (Federal Project)	US\$85 million	Arab Banking Corporation	1981	This was a federal loan to build a paper mill in Jebba. Project completed and commissioned. Plant has not been producing since 1995 due to lack of working capital.
Ilorin Feedmill	Pounds Sterling 1.27 million	N/A	N/A	Plant built but sold to private company, Panat Industries Ltd. For 8million naira (1996) to repay debt owed to Panat. This was done without knowledge of Kwara State Government
Kwara Specialist Hospitals	Danish Kroner 603.2 million	Private Bank	1983	Eight hospitals were built with extremely high import content leading to maintenance problems. Some of the hospitals have never been used. Most operate at 15 percent capacity utilization.
LAGOS: Mini-Steel Project (Lapex)	US\$37.57 million	US Exim Bank	1981	Joint venture between Lagos State and Pennsylvania Engineering Co. Equipment procured and then abandoned. Project transferred to new owners with Lagos State owing 15 percent of the equity. Joint venture between Lagos State and Pennsylvania Engineering Co. Equipment procured and then abandoned. Project transferred to new owners with Lagos State owing 15 percent of the equity.
Iwopin Paper Mill	US\$100 million from Morgan Grenfell US\$0.1 million from Credit Italia	Morgan Grenfell Credit Italiano	1981	Project built; equipment installed but operating at 5 percent capacity.

Source: Okonjo-Iweala (2003)