INCLUSIVE GROWTH IMPACTS OF RECENT FISCAL POLICY TRENDS IN NIGERIA: An Incidence Analysis

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ABSTRACT

International evidence suggests that an important instrument available to government for bringing about inclusive growth is fiscal policy, an instrument which is rarely applied in many countries. Growing concern about the rising inequality in Nigeria and other developing economies is prompting new discussions on the use of fiscal policy and instruments to foster inclusive growth. The key objective of this paper is therefore to assess whether or not, recent fiscal policy trends in Nigeria affect inclusive growth (measured as benefits and access across different quintiles). First, we conduct a decomposition of public expenditure in Nigeria so as to compare the allocation to inequality-reducing sectors (education, health, social transfers/services) with other sectors over a period of time. Second, we estimate and compare the benefit incidence of the expenditure on education for all the income quintiles. Third, we measure the incidence of the different tax revenue components in Nigeria to ascertain whether they are progressive or regressive and their redistributive impact. The findings show that the current structures of public expenditure and taxes are not progressive enough and have limited powers to reduce inequality and enhance inclusive growth.

JEL classification: E62, H22

1. Background

In traditional public finance theory, governments use fiscal policy tools to achieve three main goals: macroeconomic stabilization and growth, efficiency

in allocation of resources, and some desired distribution of income (Musgrave, 1959). In reality, the redistributive impact of fiscal policy has been achieved through a number of channels, mostly related to the expenditure/transfer side of the budget and the progressivity of the tax benefit system. Oman (2009) noted that by 2008, fiscal policy (the combined impact of taxes and public spending) reduced income inequality in Europe by about 40% (i.e. by almost 20 Gini points) and in the United States by about 17% (8 Gini points). By contrast, fiscal policy has a negligible impact on income distribution in most developing countries of Africa, Latin America and Asia. According to Oman (2009), fiscal policy reduced income inequality in Latin America by a mere 4% (2 Gini points) but even worse in Asia and Africa, by only 2%.

In Nigeria, the income Gini coefficient increased from 42.9 in 2008 to 48.83 in 2013, indicating worsening inequality. Similarly, the opportunity curves for household access (a measure of inclusive growth), show that children belonging to the bottom income of the population now have less opportunity for completing secondary education (Asogwa, 2014). Surprisingly, recent fiscal policy trends in Nigeria reveal that fiscal measures (especially public spending and public tax revenue) are used only to support growth and promote macroeconomic stability rather than to redistribute income or to ensure improved access and equality of opportunity for different income and demographic groups.

A decomposition of public expenditure in Nigeria shows that education, health and social services now have increasingly lower shares compared to security and public works. Similarly, since 2010, the share of income tax (corporate and personal) in total tax revenue in Nigeria has fallen while that of VAT has risen indicating that the tax system overall is getting more regressive. A careful look at the 2014-2016 Medium Term Expenditure Framework and Fiscal Strategy Paper shows that the focus of fiscal policy is still only on growth and stabilization while recent national tax policy reforms in 2012 also ignore its redistributive potential. The foregoing suggests that fiscal authorities in Nigeria (and perhaps other SSA countries) possess, by and large, only limited experience in using fiscal policy to promote equity and inclusive growth.

Even at the analytical and empirical level in Nigeria, most of the existing studies on the impact of fiscal policy focus on the relationship between government expenditure/government revenue on the one hand and economic growth/inflation on the other hand. There are little or no studies which focus on

the impact of fiscal policy on equity and inclusive growth in Nigeria except for recent benefit incidence studies of public expenditure.

Growing concern about the rising inequality in sub-Saharan Africa and other developing economies is now prompting a major search for policies and instruments to foster equality of opportunity (measure of inclusive growth). International evidence suggests that an important instrument available to government for bringing about a more inclusive society is fiscal policy (see ADB, 2014). For example, public health and education spending when well-targeted can be potent tools to reduce inequality, while government transfer/ grants programmes which provide cash or in-kind assistance to households below a specified income threshold can reduce inequality and poverty directly. On the revenue side, progressive income tax, which imposes a higher tax burden according to ability to pay, is a classic example of equality enhancing revenue policy.

The key objective of this paper is to assess whether recent fiscal policy trends (expenditure and tax measures) in Nigeria affect inclusive growth (measured as opportunities of benefits across different quintiles and Gini coefficients). The critical questions are: What has been the percentage of public expenditure on health, education and social services out of total government expenditure by all tiers of government for the last few years?; What is the percentage of public spending on education that go directly to the poorest 40 %?; In terms of public revenue, has the tax revenue incidence in Nigeria over the last ten years been highly progressive or rather more regressive with low income redistributive potential and what have been the benefits of recent tax measures on the poorest quintiles?

Our methodological approach is threefold; first, we conduct a decomposition of public expenditure for all tiers of government in Nigeria so as to compare the allocation to pro-poor sectors (education, public health, social services) with other sectors over a period of time. Second, we compare the benefits of the public expenditure on education for the poorest and richest quintiles so as to determine the level of progressivity. Finally, we measure the incidence of tax revenue components in Nigeria to ascertain whether they are progressive or regressive and the redistributive impact of each component.

The remaining part of this paper is as follows. Part 2 is a review of fiscal policy trend in Nigeria, recent trend in inclusive growth as well as theoretical

discussions and literature review of the linkages between fiscal policy and income distribution/inclusive growth. The third section's focus is on the structure and the benefit incidence approach of measuring the impact of public expenditure on education data from the 2009/2010 Nigeria Living standards Survey (NLSS). This section also compares the benefit incidence results with earlier results using the 2003/2004 NLSS. In section 4, the structure and incidence of the current tax structure are examined with focus on determining its progressivity or otherwise, while the final section concludes the paper with useful policy recommendations.

2. Fiscal Policy and Inclusive Growth: Trends, theoretical linkages and review of literature

2.1 Fiscal policy trends in Nigeria

The history of fiscal policies in Nigeria, beginning from the Pre-Independence Era, to the Post-Independence Era and the current democratic governance era has been well documented in several literature (Anyafo, 1996; Phillips, 1997 amongst others). Between 1900 and 1945, the Nigerian colonial government used fiscal policy to achieve certain key objectives. The Native Revenue Ordinance of 1917 was enacted with the object of regulating the levy and collection of taxes from native sources. It was first applied in Northern Nigeria but later extended to the southern provinces, beginning with the Oyo province of South-west Nigeria with the Native Revenue Ordinance of 1918. This direct tax policy was extended to other parts of South-west Nigeria by 1922 and by 1928, a review of the Native Ordinance ensured that for the first time, direct taxes were collected throughout the South eastern provinces and largely by the aid of warrant chiefs. After the Native Ordinance of 1928, no other legislative measures were introduced in the field of direct taxation, until 1940 when both the Income Tax Ordinance and the Direct Tax Ordinance were enacted, which brought the whole country under one single system of income tax. The Income Tax Ordinance of 1940 and its amendments in 1943 and 1958 laid the foundation for the post-independence uniform principles of income tax throughout Nigeria.

The statutory regulations enacted during this pre-independence era including the Customs Duties Act and the Customs and Excise Management Act, both in 1958, ensured that duties were varied to raise revenue and also to protect the few

local industries in the country. For instance, the Ad Valorem system of tax was introduced to assess export duties on cocoa, palm kernel and groundnut at 6%. Production sale tax was introduced for cocoa and palm oil in the Western Region, for groundnut, cotton and soya beans in the Northern Region, and for all agricultural products in the Eastern Region.

In terms of government expenditure during the pre-independence era, the cost of administration consumed between 30-40% of the total revenue for most years, public works mostly accounted for 10% of total expenditure, while agriculture and education each took about 5% each. The balance for each year were remitted to the British government as administration fees. In fact, no allocation was made for the development of commerce and industry throughout the pre-independence era.

During the post-independence era, fiscal policy played a vital role in creating a favourable climate for rapid development in Nigeria, particularly in containing balance of payments pressures. At this time, they were formulated and implemented simultaneously with monetary policies with the aim of having a synchronized approach in tackling economic problems. In the periods when oil receipts were buoyant, government expenditure increased substantially and sometimes, the expenditure remained the same even when export earnings slowed down, resulting sometimes in high budget deficits as experienced in 1978, 1981-83 and 1986-94 (Anyafo, 1996).

In recent times, the trend of government expenditure has altered significantly. Sectoral representations of recent public expenditure trends in Nigeria for the three tiers of government are shown in figures 1 and 2, while the recent trend in tax effort is show in figure 3.

As Bastagli et al. (2012) noted, the ineffectiveness of fiscal policy in reducing income inequality often reflects both low tax and spending levels and a less progressive tax and spending mix. It is clear in figure 1, that federal government and local government expenditure on social and community services has been low with both declining in 2011 and 2012 and picking up marginally in 2013. The states spent more money on social and economic services than the combined spending of both the federal and local governments. Surprisingly, for transfers, the federal spending has remained high above the other arms of government. Both low spending and poor targeting are known to limit the redistributive capacity of public expenditure. As Coady et al.(2010) observed,

in many developing countries, the fiscal space for expanding more redistributive social transfers is constrained by large amounts of regressive expenditure. This may have been the case for Nigeria as the federal government expenditure on progressive social and community services were significantly surpassed by expenditure on regressive transfers and administration.

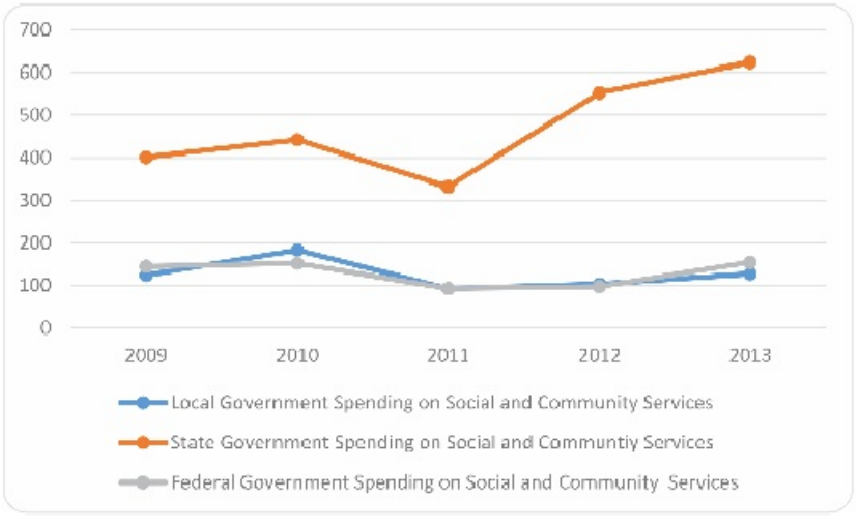

Figure 1. Public Expenditure Trend in Nigeria (Social and Community Services, 2009-2013) ₦billion.

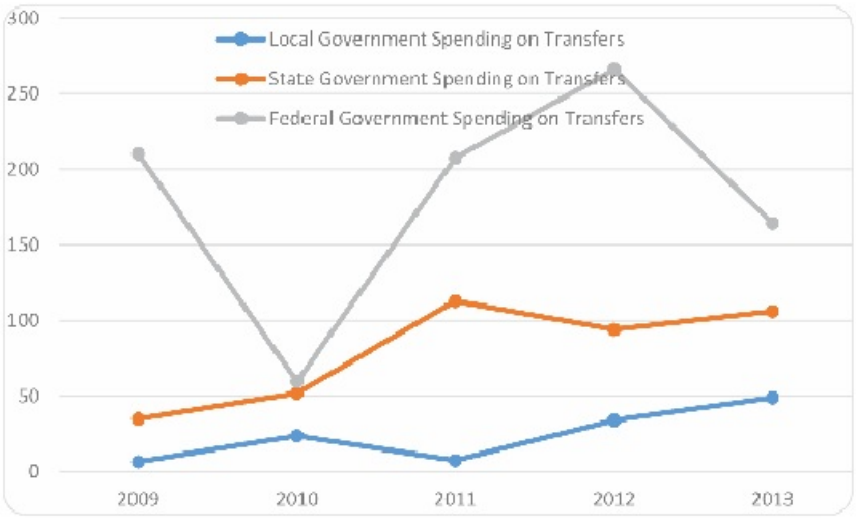

Figure 2. Public Expenditure Trend in Nigeria (Transfers, 2009-2013, ₦billion).

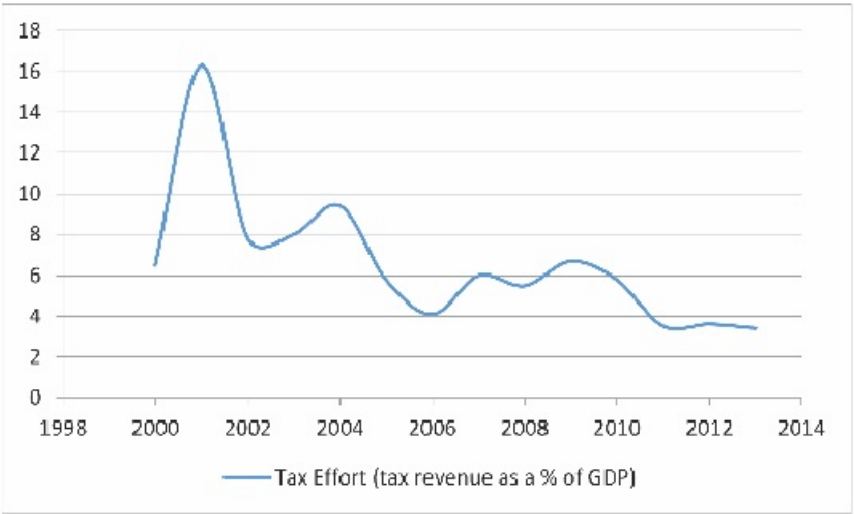

Figure 3. Tax Effort Trend in Nigeria, 2000-2013.

Similarly, the low tax to GDP ratio reflects narrow tax bases due to tax evasion, numerous loopholes, a large informal sector and weak tax administration rather than low tax rates, and these tend to decrease the redistributive impact of taxes. Figure 3 shows that the tax effort in Nigeria has declined consistently since 2002 thereby weakening the redistributive potential of taxes. In many advanced economies, the tax to GDP ratio is consistently above 35% in contrast to many developing countries with a tax to GDP ratio of 15% or less. In many of these countries, attempts to increase the tax ratio have been pursued by reliance on regressive indirect taxes and a decreasing share of more progressive income taxation.

2.2 Inclusive growth trends in Nigeria

The results of inclusive growth measured by inequality index (Gin-i coefficient) and equity opportunity index (EOI) are presented in tables 1 and 2. The tables show that inclusive growth measured by both inequality index (Gini coefficient) and equity opportunity index (EOI) has worsened in recent times thus strengthening the case for greater use of fiscal policy to foster equality of opportunity and income.

Table 1. Trends in Inclusive Growth as measured by Gini Coefficient

	1985	1992	1996	2004	2010
National	0.43	0.41	0.49	0.42	0.44
Sector					
Urban	0.49	0.38	0.52	0.41	
Rural	0.36	0.42	0.47	0.42	0.43
Geo Political Zone					
South- South	0.48	0.39	0.46	0.38	0.43
South East	0.44	0.40	0.39	0.37	0.44
South West	0.43	0.40	0.47	0.40	0.40
North Central	0.41	0.39	0.50	0.44	0.42
North East	0.39	0.40	0.49	0.41	0.44
North West	0.41	0.43	0.47	0.40	0.40

Source: National Bureau of Statistics, NLSS and Poverty Profile (2004 and 2010)

Table 2. Trends in Inclusive Growth as measured by Equity Opportunity Index (EOI) for Access to Secondary Education (men and women)

Quintile	Men		Women	
	2008	2013	2008	2013
20	6.0	4.9	1.8	0.7
40	15.1	14.0	4.7	4.2
60	23.5	28.5	13.2	14.9
80	34.4	39.6	26.4	28.8
100	38.8	36.2	37.7	37.7
Opportunity Index	21.3	24.1	15.2	16.1
Equity Index of Opportunity (EIO)	0.77	0.76	0.68	0.68
Comments	Not Equitable	Not Equitable	Not Equitable	Not Equitable

Source: Asogwa (2014); calculation based on the 2008 and 2013 NDHS.

2.3 Fiscal policy and inclusive growth: Theoretical linkages and literature review

An important part of the theory of public finance has focused on achieving a desirable pattern of income distribution through fiscal policy, moreso since it favours social cohesion and enables the entire society participate in the overall growth process. There are however two perspectives on what sort of income distribution that fiscal policy can achieve. One perspective, from the supply side,

believes that more unequal income distribution that favours profit making and higher income groups, which have a greater propensity to save, will enhance growth. A second perspective, from the demand side, expects that a more equal distribution in favour of middle and lower income groups, which have a lower propensity to save, will strengthen domestic consumption and lead to greater investment and employment by firms on the expectation of higher demand. The second perspective dominates the thinking about the link between fiscal policy and inclusive growth.

The focus of modern theory is on how to measure how fiscal policy affects the distribution of income amongst households. Two approaches dominate the research and thinking on the direct relationship between fiscal policy and income distribution. First is the incidence analysis of particular types of government expenditure and taxes on particular income groups (like the poor). Second, is the wide impact of government expenditure and taxes on income distribution in general for a particular country or panel of countries.

The incidence of specific fiscal policy refers to the resulting change in the distribution of income available for private use, attributable to that fiscal policy (Musgrave, 1959). Three concepts of incidence that relate to fiscal policy (government taxes and expenditure) can be distinguished: Expenditure Incidence, Tax Incidence and Budget Incidence (Hyman, 1999).

Government spending affects the economic position of individuals and families through two main channels: changes in earnings and changes in gross income. When government alters the mix of its expenditure, relative factor income and relative prices of goods and services produced in the private sector are affected. Musgrave (1959) used the term 'expenditure incidence' to identify those effects on relative factor and product prices that alter the distribution of earnings. Government expenditure also affects the well-being of individuals and families through direct cash transfers and the benefits generated by the public provision of goods and services. McClure (1974) called this type of distributional change 'benefit incidence'. Empirical studies of the distributional effects of government spending have focused on benefit incidence, but they are commonly known as expenditure incidence analysis, however its determination remains with inherent problems and challenges.

Tax incidence is the resulting change in the distribution of income when one type of tax is substituted for an alternative tax, or set of taxes, yielding an

equivalent amount of revenue in real terms, while both the real and level of government expenditure are held constant. In a simple form, tax incidence is the analysis of who ultimately bears the burden of government taxes in the economy. Literature on tax incidence analysis is vast (Newbery and Stern, 1987; Shah and Whalley, 1991; Musgrave and Musgrave, 1989; Martinez-Vazquez, 2004 provide good reviews), but establishing evidence on the distributional impact of taxes remains a difficult activity partly because of the difficulty in differentiating those taxpayers that are by law required to pay the tax and those taxpayers who ultimately bear the tax burden. At any rate, as Musgrave et al. (1951) puts it, policy makers must make assumptions on tax incidence in the formulation of tax policy.

The third type of incidence analysis – budget incidence, also called 'balanced-budget-incidence' (Musgrave, 1959) analyses the effects on the distribution of income of a particular increase in government expenditure accompanied by increases in taxes. Even if the tax system as a whole is regressive, the overall impact of the budget may still be progressive when the distribution of expenditure benefits is sufficiently progressive. As such, the last step in incidence analysis is the simultaneous consideration of tax and expenditure benefit incidence, which is often known as net fiscal incidence analysis or fiscal incidence analysis (Martinez-Vazquez, 2004).

The second approach focuses on the redistributive impact of fiscal policy in general. Proponents of this approach argue that actual incidence of tax and expenditure policies differ from their statutory incidence and most studies on incidence analysis focus on statutory incidence since sufficient data on market structure and behavioural responses are not available (Tanzi, 1974; Benabou, 2000; Martinez-Vazquez, 2008; Bastagli et al, 2012). Public expenditure that targets the poorer people in the population, such as spending on social security, aims at shifting income towards the middle and bottom parts of the distribution. Expenditure on public services such as education and health may reduce income inequality by supporting middle to low income groups and enabling them to afford heavy outlays. Those spending categories may work in a redistributive way, even indirectly through human capital accumulation and health conditions.

The literature on the impact of fiscal policy on inequality and income distribution has followed the two approaches earlier discussed. The first approach, the incidence analysis, focuses on micro level analysis on distribution

impact across households, income groups, geographical locations or other demographic groups. The second approach focuses on macro level empirical analysis of the relative impact of tax and government expenditure components on aggregate income inequality (proxied by Gini coefficient) with courtly level or cross-country panel data.

Ever since the seminal works by Selowsky (1979) and Meerman (1979) on benefit incidence analysis, there have been massive efforts to replicate the studies in different countries, despite the shortcomings of its measurement approaches. Some studies have compiled large cross-country data sets on the benefit incidence of education and health spending (Deininger and Squire, 1998; Filmer, Hammer and Prichet, 1998; Li, Steele and Glewwe, 1999; Yaqub, 1999; Davoodi et al, 2003). According to Davoodi et al (2003), spending on primary education is pro-poor and progressive, but not in sub-Sahara Africa, transition economies, and HIPCs. In their study, the middle class captures most of the gain from primary education and health care, particularly in sub-Saharan Africa, the HIPCs and transition economies. An earlier study by Sahn and Younger (2000) reported that most of the expenditure on health and education in Africa are regressive. In several Central American countries, Cubero and Hollar (2010) found that expenditure on primary education is pro-poor (strongly progressive), whereas public spending on secondary education follows an inverted U-shape with benefits accruing to the middle quintiles.

Two comprehensive studies on benefit incidence analysis of public spending on education and health care in Nigeria use the 2003/2004 National Living Standards Survey (NLSS) as data for analysis (Alabi, 2010 and Amakom, 2012). While the two studies agree on the absolute progressivity of primary education and the regressively of tertiary education, the results for secondary education are partially different. In this study, we use the NLSS for 2009/10, thus allowing a look at changes over time by comparing the 2003/4 results with the 2009/10 results.

Tax incidence studies have been carried out in several countries including African countries. Three recent studies of tax incidence in African countries: Ghana (Younger, 1996), Madagascar (Younger et al, 1999) and Uganda (Chen et al 2001), all conclude that the tax systems in these countries are found to be progressive or mildly progressive except for a few taxes which are regressive.

Recently, David and Petri (2013) found that income taxes in Mauritius are relatively progressive, but they have a negligible impact on income distribution.

Ever since the de Melo and Tiongson (2006) cross-country analysis of the impact of government spending on income distribution, there have been a few other studies that focus on the wide impact of fiscal policy on income distribution, either for a country or in cross country analyses. Martinez-Vasquez et al. (2012) found that aggregate government expenditure on social welfare, education, health and housing significantly reduce income inequality over time. Joumard et al. (2012) found similar results for public spending on education and health. Bastagli et al. (2012), using a multivariate regression framework, found that in advanced countries, fiscal policy contributes significantly to reducing Gini coefficients, but in developing countries, fiscal policy has only a limited effect on Gini coefficients (inequality). Salottti and Trecroci (2013) also investigated the redistributive impact of fiscal policy in a panel of 20 advanced countries over a 40-year period and provide evidence to support the notion that fiscal policy, especially on government expenditure, has a significant impact on income distribution. Recently, Claus et al. (2014), using data from 150 countries for the period 1970-2009, confirmed the view that fiscal expenditure, not taxation offers the most effective means of lowering inequality and that public spending best able to reduce inequality is on education and health care.

3. Structure of Public Expenditure and Incidence of Education Spending

3.1 Structure of public expenditure in Nigeria

We compare public expenditure on a key income redistribution sector (social and community services) over two distinct periods in Nigeria – the era of low Gini coefficient, i.e. before 1985 (see table 3), and the era of high Gini coefficient, as from 2004 (table 4).

It is clear from table 3 that expenditure on social and community services was second to economic services for the period 1976 to 1983, an era characterized by low Gini coefficient. By contrast, during the period 2006 to 2013, social and community services was the least in terms of public annual expenditure and lagged behind other sectors such as economic services, administration and transfers (table 4). Why have administration and transfers since 2006 and 2011 respectively been receiving greater attention than social and

community services and what implications does it have for income redistribution and inclusive growth.

Table 3. Decomposition of Public Capital Expenditure in Nigeria (1976-1983) % of total expenditure (Era of Low Gini Coefficient)

	1976	1977	1978	1979	1980	1981	1982	1983
Administration	18.8	18.6	19.0	15	15.3	12.6	9.6	11.6
Economic Services	52.6	57.4	56.8	58.1	64.9	62.3	38.2	41.1
Social and Community Services	21.2	15.2	21.0	12.7	15.8	24.2	17.6	15.6
Transfers	7.4	8.8	3.2	13.3	4.0	0.9	34.6	31.7

Administration (general administration, defence and internal security)

Economic Services (agriculture, manufacturing, transport, housing, roads and other priority projects)

Social and Community Services (education, health and others including social welfare)

Transfers (financial obligation, capital repayments, capital supplementation)

Source: CBN Statistical Bulletin, 1991.

Table 4. Decomposition of Public Capital Expenditure in Nigeria (2006-2013) % of total expenditure (Era of High Gini Coefficient)

	2006	2007	2008	2009	2010	2011	2012	2013
Administration	33.5	29.8	29.8	25.3	29.4	25.2	21.7	25.5
Economic Services	47.4	47.2	52.4	43.8	46.6	42.0	36.7	45.6
Social and Community Services	14.2	19.8	15.8	12.5	17.7	10.1	11.3	13.9
Transfers	4.76	3.03	1.80	18.2	6.7	22.5	30.3	14.8
Total (% of GDP)	2.98	3.68	3.95	4.65	1.63	1.45	1.23	1.38

Source: Central Bank of Nigeria, Statistical Bulletin.

In tables 5 and 6, we specifically examine recent public spending on education and health, which are significant determinants of an individual's earning potential and thus income redistribution capacity. It is clear that capital expenditures on both education and health are on the decline for both federal and state governments but recurrent expenditure for the federal level increased only marginally.

Table 5. Education and Health Expenditure for Federal and State Governments (2009-2013) (% of total capital expenditure)

	2009	2010	2011	2012	2013
Education					
Federal	3.7	9.9	3.8	5.4	3.1
State	7.2	6.6	5.9	6.6	6.6
Health					
Federal	4.5	3.9	4.3	5.1	2.9
State	5.6	4.2	3.1	4.3	4.3

Source: Computed from Central Bank of Nigeria Economic Report, 2013.

Table 6. Education and Health Expenditure for Federal and State Governments (2009-2013) (% of total recurrent expenditures)

	2009	2010	2011	2012	2013
Education					
Federal	6.4	5.4	10.1	10.4	10.5
State	9.8	9.3	6.3	8.5	8.5
Health					
Federal	4.2	3.1	6.9	5.9	4.8
State	5.4	4.5	3.6	4.5	4.5

Source: Computed from Central Bank of Nigeria Economic Report, 2013.

3.2 Benefit incidence of public spending on education: Methodology and results

The popular methodology of benefit incidence analysis was introduced in two studies focused on developing countries: Selowsky (1979) on Columbia and Meerman (1979) on Malaysia. The two studies have been replicated in various country case studies, sometimes involving several refinements of the original methodology. Demery (2000) and Younger (2001) carried out excellent surveys on the benefit incidence analysis. Two recent studies in Nigeria by Alabi (2010) and Amakom (2012 & 2013), applying this methodology, using the Nigerian Living Standard Survey (NLSS) 2003/2004, also show interesting results. Following Demery (2000) and others, we focus on government spending on education, which can be formally written as:

$$X_1 = E_{1p}[S_p/E_p] + E_{1s}[S_s/E_s] + E_{1t}[S_t/E_s] \quad (1)$$

where:

X_1 = amount of education spending that benefits group 1.

S = government spending

E = number of school enrollments

p, s and t denote level of education (primary, secondary and tertiary respectively).

The benefit incidence of total education spending accruing to group 1 is given by the number of primary enrollments from group (E_{1p}) times the unit cost of a primary school place [Sp/Ep], plus the number of secondary enrollments times the secondary unit cost, plus the number of tertiary enrollments times the unit cost of tertiary education. This can easily be re-written as:

$$X_j \equiv \sum_{i=1}^{3} E_{ij} \frac{S_i}{E_i} \equiv \sum_{i=1}^{3} \frac{E_{ij}}{E_i} S_i \tag{2}$$

where:

X_j is the benefit incidence of spending on education to group j

E_{ij} is the number of enrollments from group j at education level i

E_i is the total number of enrollments at level i

S_i is the net spending by government on education at level I (i=1 to 3 representing primary, secondary and tertiary)

(S_i/E_i) is the mean unit subsidy of an enrollment at education level i

The share of total education spending to group j (X_j) is then:

$$X_j \equiv \sum_{i=1}^{3} \frac{E_{ij}}{E_i} \left(\frac{S_i}{S} \right) \equiv \sum_{i=1}^{3} E_{ij} S_i$$

Equation 3 depends on two determinants:

- The E_{ij}s, which are the shares of the group in total service (enrollments in education). These reflect household behaviour.

- S_i, which is the share of public spending across the different types of service, reflecting government behaviour.

In calculating the benefit incidence of public spending on education, we adopt steps similar to Demery (2000), Davoodi et al (2003), Amakom (2012) which include:

a. Identifying households that benefited from public service in education based on the 2009/2010 NLSS.
b. Aggregating individuals/households into 5 income quintiles using the NLSS.
c. Accounting for households' direct spending on education (such as out of pocket expenditures to gain access to subsidized government services).
d. Estimating unit cost of providing education defined as total government spending on education (net of out of pocket expenses and cost recovery fees by users) divided by the total number of users of the service (for example, total primary education spending per primary enrollment).
e. Defining the average benefit from government spending on education as the average unit cost of providing education as computed in d above.

We used data from the 2009/2010 harmonized NLSS conducted by the National Bureau of Statistics. The welfare approach component of the survey (part A) was conducted in 77,400 households which is an average of one hundred households per local government area. The consumption/expenditure component (part B) was conducted on 38,700 households that are a subset of the 77,400 households selected for part A and covered 50 households per local government area. The survey covered issues of household assets and access to basic facilities as well as household expenditure on key services.

The 2009/10 NLSS is complemented by the 2010 Nigerian Education Data Survey implemented by the National Population Commission (NPC) in collaboration with the Federal Ministry of Education and with data on Household Expenditure on schooling during the 2009-2010 school year. The Education Data Survey contained information on per pupil household expenditure on primary and secondary school for each income quintile as well as the school attendance for each quintile which helped the comparison with the NLSS.

We focus only on public expenditure on education (primary, secondary and tertiary) and apply only the traditional benefit incidence analysis (BIA) methodology described earlier to analyse benefits across five income groups (poorest, poor, average, rich and richest). Several other studies have supplemented the traditional BIA analysis with concentration index which measures both types of equity (equal treatment of equals and equitable treatment of all) but find similar results with traditional BIA.

Table 7. Benefit Incidence of Public Spending on Primary and Secondary Education in Nigeria using NBS NLSS 2009/2010

		1 (Poorest)	2 (Poor)	3(Average)	4 (Rich)	5 (Richest)
Primary Education	Share (per Naira)	6346	5341	4879	3457	2841
	Comment	Absolutely Progressive				
Secondary Education	Share (per Naira)	4442	4500	4587	4599	4603
	Comment	Mildly Regressive				
Tertiary Education	Share (per Naira)	6735	10345	14356	19123	21675
	Comment	Absolutely Regressive				

Source: Authors computation from NBS NLSS 2009/2010.

The results in table 6 show that benefit incidence was absolutely progressive for primary education, mildly regressive for secondary education but absolutely regressive for tertiary education. The differences in share of primary education is high in advantage for the poorest as compared to the other quintiles. This pro-poor targeting of primary education spending has been noted in several other African countries as primary education is often regarded as an important tool for ensuring universal access to a formal education system.

For secondary education, the poorest seem to benefit less, even though the differences are only mild. Even though mildly regressive and not pro-poor, it appears its distribution is more equitable across all income groups when compared to primary education. For tertiary education, the richest benefit absolutely more than other quintiles. This finding corroborates some earlier

studies which show that spending on secondary education and tertiary education primarily benefits the non-poor and there is strong evidence of middle class capture.

3.3 Comparison with previous results based on 2003/2004 NLSS

Table 8a. Benefit Incidence of Public Spending on Primary and Secondary Education in Nigeria (Alabi's Study using NLSS 2003/2004)

		1 (Poorest)	2 (Poor)	3 (Average)	4 (Rich)	5 (Richest)
Primary Education	Share participation	0.596	0.723	0.789	0.854	0.773
	Share by group	0.154	0.187	0.204	0.221	0.234
	Comment	Regressive				
Secondary Education	Share participation	0.393	0.523	0.565	0.685	0.717
	Share by group	0.136	0.182	0.196	0.238	0.249
	Comment	Regressive				

Source: Alabi (2010) Poverty and Economic Policy Research Network-PEP Study.

Table 8b. Benefit Incidence of Public Spending on Primary and Secondary Education in Nigeria (Amakom's Study using NLSS 2003/2004)

		1 (Poorest)	2 (Poor)	3 (Average)	4 (Rich)	5 (Richest)
Primary Education	Share (Naira)	3707	3465	2925	2413	2095
	Comment	Absolutely Progressive				
Secondary Education	Share (Naira)	3806	3856	4020	3804	3789
	Comment	Mildly Progressive				
Tertiary Education	Share (Naira)	8585	9159	10249	11263	11525
	Comment	Absolutely Regressive				

Source: Amakom (2012) African Economic Research Consortium –AERC Study.

We compare the benefit incidence results based on the 2003/2004 NLSS (Amakom, 2012 and Alabi, 2010) with this study using 2009/2010 NLSS. An a priori expectation is that benefit incidence should improve with the latest data set considering the changes in educational characteristics within the two time

periods. For instance the number of public primary schools increased from 60,189 in 2005 to 68,715 in 2009 while the total enrollment declined from 22,115,432 in 2005 to 18,818,544 in 2009. The number of public secondary schools also increased from 10,913 in 2005 to 18,238 in 2009 but the enrollment declined from 6,279,462 in 2005 to 2,505,473 in 2009 (NBS, 2010). The number of state-owned universities also increased from 26 in 2005 to 36 in 2009 (NBS, 2010).

The changes in the incidence of spending between 2004 and 2010 show that secondary education has moved from being 'mildly progressive in 2004' to 'mildly regressive in 2010' considering the share of total expenditure that each group received based on the 2004 and 2010 NLSS. The reasons for the stronger benefit incidence for primary education may be related to the abolition of primary school fees in many more states prior to and after the 2007 elections. In addition, with the intervention of the Universal Basic Education Scheme in building additional public schools, the mean walking time to the nearest primary school reduced in 2010 as compared to 2004. By contrast, public expenditure on tertiary education was absolutely regressive in 2010 and appears to have become even more pro-rich in 2010 compared to 2004. Why has the benefit incidence for secondary education moved from mildly progressive in the 2003/2004 NLSS survey (Amakom, 2012) to mildly regressive using the 2009/2010 NLSS?

In order to check how robust the benefits incidence results are, we also computed the Coady-Grosh-Hoddinott (CGH) indicator, which simply compares the proportion of the education transfer budget received by the population quintile with the portion of population in that quintile. A programme with even targeting (where every individual receives the same transfer) would have a CGH indicator of 1. Larger numbers indicate that a programme is more progressive than the other.

Table 9. Coady-Grosh-Hoddinott Indicator of Benefit Incidence for Different Quintiles

	1 (Poorest)	2 (Poor)	3 (Average)	4 (Rich)	5 (Richest)
Primary Education	2.2	1.7	1.3	1	1
Secondary Education	0.57	0.59	0.65	1.01	1.05
Tertiary Education	0.31	0.33	1.04	1.09	1.40

Source: Authors' estimates based on 2009/2010 NLSS and Education Data Survey, 2010.

Generally, secondary and tertiary education spending are not well targeted with CGH indicators of less than 1, but it is much lower for tertiary education than for secondary education. Since the poorer segments of the population have indicators well below one, then public expenditure on education is not well targeted, especially for secondary and tertiary education.

3.4 Relationship between benefit incidence and inclusive growth

Does improved benefit incidence lead to better social outcomes such as improved opportunity for access or improved Gini coefficients? As Davoodi et al. (2003) noted, government provision of in-kind transfers, such as education and health, is intended to endow individuals with services that increase the quality of their human capital, perhaps address some redistributive concerns and improve their welfare.

The results and findings seem to suggest a relationship between the benefit incidence of public expenditure on secondary education and the equity opportunity index (EOI) for access to secondary education for men and women in Table 2 (a measure of inclusive growth). Table 2 shows that access to secondary education for the poorest quintiles (1 and 2) declined between 2008 and 2013 for both men and women, while the access for quintiles 3 and 4 increased between 2008 and 2013.

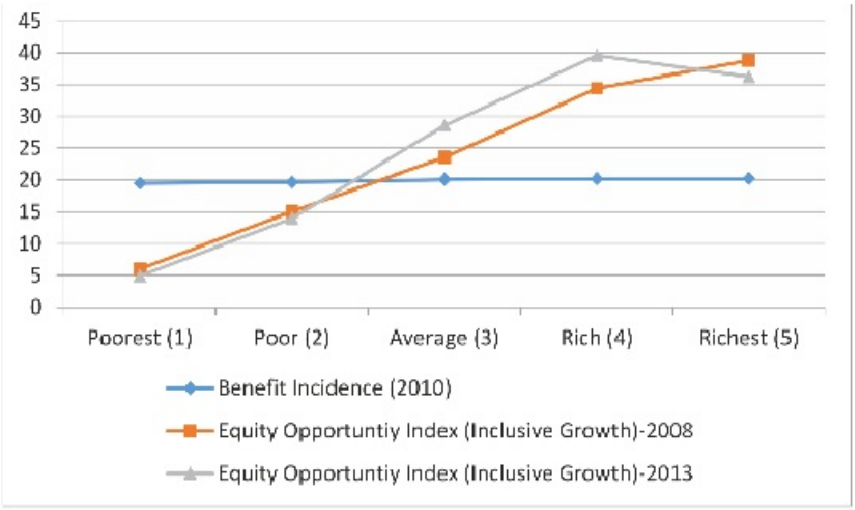

Figure 3. Movements in Measures of Benefit Incidence and Inclusive Growth.

We notice a similar relationship when the average benefit on secondary education in 2004 (Amakom's study) and Gini coefficient for each location is compared. The implication is that the higher benefits in spending lead to improved equality in income and opportunities for access.

Table 10. Comparison of location Benefit Incidence and Gini Coefficients

	Urban	Rural
Average Benefit from Public Spending on Secondary Education (2004) based on Amakom' Study	6055	5509
Gini Coefficient (2004)	0.4154	0.4239

4. Structure of Tax Revenue and Incidence of Taxes

Studies have shown that it is preferable to address inequality through expenditure policy rather than taxes, but as experience in advanced economies has demonstrated, there is also scope for addressing inequality through personal income tax (David and Petri, 2013). The redistributive effects and incidence of the tax system is usually measured by two simple methods. The first method is using the ratio of income tax to VAT as an approximate measure for the progressivity of the tax system. A low share of income tax yield and the higher share of VAT in total tax revenues indicate that the tax system overall is more regressive and vice versa. The second method involves the calculation of the Reynolds-Smolensky (RS) index and the Concentration Index (David and Petri, 2013).

4.1 Progressivity of the tax system (Ratio of income tax to VAT)

In 2011, income tax, comprised of corporate income tax (CIT) and personal income tax (PIT), accounted for 12.78 percent of total tax revenues, while VAT accounted for 12.68 percent of total tax revenue. However, by 2013, income tax accounted for a lower percentage of 19.09 % as compared to VAT with a total of 20.05%. Similarly, the ratio of income tax (PIT and CIT) to VAT, which is taken as an approximate measure of the progressivity of the tax system, fell from 1.01% and 1.22% in 2011 and 2012 respectively to 0.82 % and 0.95% in 2012 and 2013 respectively (table 11). The lower share of income tax yield and the higher share of VAT in total tax revenues in 2012 and 2013 indicate that the tax system is becoming regressive in Nigeria. Has the recent tax reforms in Nigeria

in 2011 led to a more regressive tax system if the ratio of income tax revenue to VAT revenue is taken as a rough indicator?

Table 11. Tax Revenue Collection by Tax Types after recent Tax Reforms (2011- 2014)

Tax Types	Percentage Contribution to Total Tax Collection (%)			
	2011	2012	2013	2014
Petroleum Profits Tax	68.98	63.93	54.82	57.96
Company Income Tax (CIT)	11.91	16.39	16.67	17.62
Gas Income	1.16	0.19	0.22	0.13
Capital Gains Tax	0.01	0.18	0.26	0.01
Stamp Duty	0.15	0.15	0.21	0.38
VAT (NCS-import)	3.3	3.29	4.84	4.55
VAT (non-import)	9.38	10.9	17.29	15.5
Education Tax	4.2	3.76	4.26	2.36
Personal Income Tax (PIT)	0.87	1.02	1.4	1.47
NITDEF	0.05	0.18	0.03	0.02
TOTAL	100.00	100.0	100.0	100.0
Ratio of income tax (CIT and PIT) to VAT	1.01	1.22	0.82	0.95
Comment	Mildly Progressive	Mildly Progressive	Regressive	Regressive

Source: Federal Inland Revenue Service (FIRS).

The redistributive effects of the tax system depend to a large extent on the share of income tax in total revenues and the progressivity of the personal income tax schedule. According to UNCTAD (2012), in developed countries, income tax, including corporate income tax, accounted for 46.5 percent, on average, of total tax revenues compared with the regressive VAT of 27.3 percent. Generally regressive structures of revenue collection make the system dependent on the purchasing power of the lower and middle income groups and as such there is less scope of influencing income distribution through fiscal measures. In countries where income distribution is highly unequal and taxation is regressive, tax evasion by earners of non-wage incomes is usually widespread, thereby contributing to even greater inequality because richer people have greater opportunities and skills for evading taxes (UNCTAD, 2012).

There are several reasons why the ratio of income tax to VAT may have declined in recent times in Nigeria. Even though VAT as a consumption tax has remained at 5 percent since implementation in 1994, certain recent amendments to ensure VAT effectiveness may have worsened the progressivity of the Nigerian tax system. Such amendments as noted by Odusola (2006) include: reduction of personal income tax burden through increased tax allowances and reduced tax rates, monetization of taxation of fringe benefits, deduction of R&D expenditure from gross earnings of companies, extension of tax free status to companies in rural areas and granting of incentives based on the infrastructure available in the areas, reduction of company income tax rate from 40 to 35 percent and subsequently to 30 percent. Besides, and as well known, owing to the large informal sector in Nigeria and other developing economies, with limited government capacities, direct and progressive taxes are difficult to collect.

4.2 Incidence of income taxes

With the available household data on income taxes, it is possible to identify those who actually bear the tax burden and also measure the impact of income taxes on income distribution using such measures as the Reynolds-Smolensky (RS) index, the concentration index and the Kakwai index. As reported by David and Petri (2013), the income tax incidence for Mauritius is highly progressive in the sense that richer segments of the population bear more of the tax burden as the computed Kakwani index is the highest among several other countries considered in the study.

In this study, we look at the changing income tax schedules and also compare the level of income inequality between states that generate significant amounts from income taxes and states with poor revenue from income taxes. This will help us make deductions on the incidence and redistributive capacity of income taxes since reliable data on household income tax payments are difficult to access in Nigeria.

Generally, marginal tax rates at the top of the income scale are often used as a measure of overall progressivity, even though the top earners constitute a small segment of the population, because they often account for a large share of aggregate income and total income tax yield. Table 12 shows that there has been a drop in average individual income tax rates for those at the very top of income

distribution. Between 1995 and the 2011 tax reviews, rates applied to the first three steps appear to be either stable or increasing, while the fourth, fifth and final steps, which relate to the very top of the income distribution are declining. Even though, most of the personal income taxpayers in Nigeria fall in the low-income category, the decline in the top tax rates lowers the progressivity of the tax structure. As Bakia, Cole and Heim (2012) noted, reduced top marginal tax rates also encourage greater distribution of corporate profits among shareholders – who are mainly to be found in the top income groups – rather than reinvestment of such profits. Such income in turn is more likely to be saved in the form of acquisition of existing assets rather than being spent.

Table 12. Computation of Personal Income Tax Under Various Reforms (Naira Million)

	1993-94	1995	1996-97	1998-2000	2001	2011
1st step	10,000(10%)	10,000 (5%)	10,000 (5%)	20,000 (5%)	30,000 (5%)	300,000 (7%)
2nd step	10,000 (15%)	10,000 (10%)	10,000 (10%)	20,000 (10%)	30,000 (10%)	300,000 (11%)
3rd step	10,000 (15%)	10,000 (15%)	20,000 (15%)	40,000 (15%)	50,000 (15%)	500,000 (15%)
4th step	30,000 (25%)	10,000 (20%)	20,000 (20%)	40,000 (20%)	50,000 (20%)	500,000 (19%)
5th step	40,000 (30%)	20,000 (25%)	60,000 (25%)	120,000 (25%)	160,000 (25%)	1,600,000(21%)
Over	100,000 (35%)	60,000 (35%)				3,200,000 (24%)

Sources: Odusola (2006) and Federal Republic of Nigeria, Tax Amendment Act (2011).

UNCTAD (2012) noted that low income tax regions/countries also have high inequality compared to high income tax regions because tax evasion of richer people (non-wage) is widespread contributing to even greater inequality. This suggests that low income tax states or regions will have higher Gini coefficients. We test this proposition in table 13 by selecting the five highest income tax states in Nigeria (by total collection) and comparing their inequality index (Gini) with those of the five lowest income tax states for the years 2004 and 2010. It is clear that the size of the income taxes of the states had little relationship with the inequality levels of the states.

Table 13. Gini Coefficient Comparison Between Low and High Income Tax States

	PAYE (2010)	Direct Assessment (2010)	Gini Coefficient (2004	Gini Coefficient (2010)
Low Income Tax States				
Taraba	672229414	115853025	0.3664	0.5241
Ekiti	1285595636	34568573	0.3695	0.4831
Gombe	1326246481	122824211	0.3652	0.4217
Nasarawa	1460588426	11387153	0.3494	0.3499
Adamawa	1508374274	248687408	0.4414	0.4339
High Income Tax States				
Lagos	104680721864	7507947789	0.5040	0.3719
Rivers	43267564415	1644854506	0.4052	0.4614
Akwa Ibom	9005363053	691855598	0.3645	0.4381
Edo	6785209604	393071890	0.3742	0.4177
Ogun	5510105570	1310752736	0.3984	0.4076

Source: NBS States IGR Report, 2013 and 2010 Poverty Profile.

5. Conclusions and Policy Recommendations

The findings and discussions suggest that current public expenditure and tax structure have limited capacity for reducing inequality and achieving inclusive growth. The budget allocation and actual government expenditure on education and health sectors which have great potential for reducing earnings differential income inequality is still low as compared to other sectors for all tiers of government. Also the benefit incidence for secondary and tertiary education is heavily in favour of the middle class and rich segments of the population. Similarly, the redistributive impact of the current tax system in Nigeria is relatively limited not only because of their overall structure but also because of the generally smaller share of taxes in total GDP. In this section, we offer some policy suggestions for improving the progressivity of public expenditure and tax systems in Nigeria.

5.1 Increasing the progressive incidence of public spending

As suggested by ADB (2014), benefit incidence must be a major consideration in the design of government expenditure programmes especially those aimed at tackling inequality. Public spending programmes have the power to level the

playing field by broadening access to basic services for disadvantaged groups. Yet the impact for individual poor households depends on benefit incidence or how public expenditure is distributed across the different demographic and income groups.

Several studies have noted that public expenditure on health and education can easily create conditions for higher productivity, diversification of production and decent formal employment in the rest of the economy. Generally, these measures may not reduce inequality directly, but they could contribute to strengthening the dynamic process of structural change through which fiscal instruments and income policies would become more effective (UNCTAD, 2012). Besides spending on education and health, there is evidence that increased governmental transfers may help reduce criminal activities, thereby alleviating social tensions and instability. UNCTAD (2010) provides several theoretical channels on how public employment schemes can have positive effect on income distribution. First, they provide an income to workers who lack protection through any unemployment benefit scheme. Second, they help to establish an effective wage floor, similar to minimum wages imposed on employers in the formal private sector. Third, the additional demand for goods and services generated this way could help expand markets and drive output growth through employment generation elsewhere in the economy, which in turn would contribute to enlarging the tax base. Fourth, they could be combined with projects to improve infrastructure and the provision of public services. Finally, such schemes attract workers from the informal sector and provide them with professional skills which would improve their employment prospects subsequently in the formal sector.

Recent developments in Asia show policy responses to achieving inclusive growth through public spending. Asia's rising educational investment seeks to expand the supply of education, achieve equity in access and significantly raise the quality of education (Tiongson, 2005). As a result, government spending on education is rising as a percentage of GDP in many of the Asian countries. Similar to education, data also show that government spending on health care services is rising across developing Asia.

In Latin America, conditional cash transfer (CCT) programmes have become a distinctive and relatively successful form of equity-promoting public spending, with 17 countries implementing such schemes. CCT programmes tend to be most

effective when they target the poorest households, which otherwise typically lack access to education and health care. Well-designed and implemented CCT programmes have proved to be useful in delivering double dividends to their beneficiaries: greater access to education and health combined with cash transfers that augment families' purchasing power (ADB, 2014).

5.3 Broadening the base for income taxes and introducing new progressive taxes

Given the small relative importance of taxes in the Nigerian economy (as they currently account for only 3.4 percent of GDP), they will have a small effect on income distribution. However, the current tax structure should be made progressive for several tax types. Claus et al. (2014) estimated how progressive income tax in Asia affected inequality and found that a 1 percentage point increase in personal income tax reduced income inequality by 0.573 percentage points in Asia; more than the 0.041 percentage points estimated for the rest of the world. However, as the ADB (2014) suggests, the greater redistributive effect of PIT may reflect the fact that a larger percentage of the people are not paying income tax in Asia because their income is below the tax-free threshold. Increased administrative capacity can help to broaden the base for progressive income taxes in Nigeria in spite of recent tax reforms which reduced the corporate tax rates and also the burden of personal income tax.

Even though there is substantial evidence that VAT is regressive, there are new suggestions that its design can be improved to make it more progressive. Besides, there are increasing recommendations for strengthening new progressive taxes such as property tax, inheritance tax and capital gains tax. Taxes on property possession currently in the local government revenue jurisdiction in Nigeria yield only small amounts of revenue, but if seriously utilized have the capacity for income redistribution. Another progressive tax now currently utilized in many developing countries in Asia is the inheritance tax which levies the transmission of wealth across generations but has little effect on work incentive. Generally, taxation of wealth, property or inheritance demands less administrative capacity, is harder to circumvent and has a progressive effect.

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Appendix 1: Growth and Distribution Effects across Tax Types

Tax Type	Growth Impact	Distribution Impact	Advantages and Disadvantages	Key Risk Areas
Individual Income Tax	Negative, especially if economic activity is driven into the informal sector	Generally progressive but not uniformly so	Usually imposes high and possible regressive compliance costs on business and self-employment income	Most prone to tax evasion
Social Security Tax	Negative	Generally Regressive especially if tax on individuals is deductible	Reduces private savings and investment in pay-as-you go systems	
Corporate Tax	Negative	Possibly Progressive as the poor own few corporate shares, but international competition to lower corporate taxes and companies efforts to shift tax liability to labour and other less mobile factors may reduce progressivity	As tax payers are few, low cost of collection and compliance relative to the revenue collected	Can push economic activity into the informal sector and leave a country vulnerable to others to attract foreign investments with tax breaks.
Capital Gains Tax	Negative but limited if levied when gains are realized	Similar to corporate taxes except that capital gains tax on immobile capital such as real estate may be more progressive		
VAT	Possibly negative	Generally regressive but, depending on the VAT threshold, possibly neutral	Costly to administer and comply with, and compliance costs tending toward regressive, depending on how high the tax threshold is.	Administration in developing countries, tending to be weak, which can allow revenue leakage.

Tax Type	Growth Impact	Distribution Impact	Advantages and Disadvantages	Key Risk Areas
Selective Excise Taxes	Negative	Regressive if passed on to final consumers	Can control economically and socially undesirable activity	
Import Duty	Negative	No Uniform impact	If protectionist, can induce excessive import substitution	Prone to evasion and can give rise to smuggling
Export Duty	Negative	No uniform impact	Allows countries to exploit international monopoly power	
Non tax revenue	No direct impact	No direct impact	Can improve resource allocation	

Source: ADB, 2014.