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**REDISTRIBUTION OF EDUCATION AND REDISTRIBUTIVE EFFECTS
OF EDUCATION SPENDING IN NIGERIA**

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**Berichte aus dem Weltwirtschaftlichen Colloquium
der Universität Bremen**

Nr. 120

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Berichte aus dem Weltwirtschaftlichen Colloquium
der Universität Bremen, Nr. 120, Juli 2010

ISSN 0948-3829

Bezug: IWIM - Institut für Weltwirtschaft
und Internationales Management
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¹ This paper would not have seen the light of the day without the supervision and support of my mentor and supervisor, Prof. Dr. Karl Wohlmuth, and other staff of IWIM, University of Bremen, such as Prof. Dr. Axel Sell and Dr. Osmund O. Uzor. Alexis Tchokam and Corinna Hartmann provided technical support. I am grateful to all of them. The usual disclaimer applies.

Zusammenfassung

Diese Studie analysiert die Verteilung der Bildungsausgaben und die Umverteilungseffekte der Bildungsausgaben in Nigeria. Die relevanten primären und sekundären Daten aus Nigeria wurden gesammelt und mittels komplexer Instrumente (deskriptive Statistikanalyse, Konzentrationsindexanalyse, Analysen auf der Basis des Reynold's - Smolensky (RS) Index der Umverteilung) verarbeitet. Die Studie belegt, dass es in Nigeria bei Einschulungs- und Abschlussraten in Grund- und Sekundarschulen Disparitäten in regionaler Hinsicht, nach Geschlechtern und nach Standorten (Stadt versus Land) gibt, und dass diese sozialen Indikatoren insgesamt niedrige Werte aufweisen. Allerdings zeigt die Studie auch, dass alle diese Formen von Disparitäten in der Grundschule und in der Sekundarstufe im Gegensatz zu den Grundsätzen der Philosophie der Erziehung in Nigeria stehen. Der Reynold's - Smolensky Index der Umverteilung (von schätzungsweise $-0,12$) weist darauf hin, dass das Bildungsfinanzierungssystem das Problem der Einkommensungleichheit in Nigeria verschärft. Dies impliziert, dass die derzeitige Finanzierung der Bildung in Nigeria die Einkommensunterschiede erweitert und den Zugang zu Bildung, mit schädlichen Folgen für das Humankapital, erschwert. Die Studie wird durch die Empfehlung von geeigneten Umverteilungspolitiken und Interventionen für Nigeria abgeschlossen.

Abstract

This study analyses the distribution of education spending and the redistributive effects of education spending in Nigeria. The relevant primary and secondary data collected from Nigeria were analyzed using methods and tools for data analysis (descriptive statistics methods, concentration index analysis, and analysis based on the Reynold's – Smolensky (RS) Index of Redistribution). This study establishes the regional, gender, and location biases in primary and secondary school enrolment and completion rates in Nigeria (and the low levels of these indicators of development). However, the study indicates that all these forms of disparities in primary and secondary schooling are contrary to the tenet of philosophy of education in Nigeria. The Reynold's – Smolensky Index of Redistribution is estimated to be -0.12 what indicates that the education-financing system worsens income inequality in Nigeria. This implies that the current education financing system in Nigeria will widen the gaps in income and in access to education, with damaging consequences for equity. The study is concluded by recommending appropriate redistributive policy interventions for Nigeria.

Keywords: Redistribution, Education, Redistributive Spending

Stichwörter: Umverteilung, Bildung, Umverteilende Ausgaben

JEL-Classification: 122

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ABBREVIATIONS AND ACRONYMS

Acronym	Meaning
AL	Adult Literacy
ADB	Asian Development Bank
CASSAD	Centre For African Settlement Studies And Development
CEE	Center for the Economics of Education
CEPR	Centre for Economic Policy Research
CTE	Conditional Transfer for Education
CWIQ	Core Welfare Indicator Questionnaire
ECCE	Early Childhood Care and Education
EFA	Education for All
ESDP	Education Sector Development Plan
ETF	Education Trust Fund
GE	Gender Equality
GDP	Gross Domestic Product
IDB	Inter-American Development Bank
IDP	Independent Development Project
LGAs	Local Governments Areas
MDGs	Millennium Development Goals
MIT	Massachusetts Institute of Technology
NAPEP	National Poverty Alleviation Programme
NAR	Net Attendance Rate
NBER	National Bureau of Economic Research
NER	Net Enrolment Ratio
NBS	National Bureau of Statistics
ODA	Overseas Development Assistance
OECD	Organisation for Economic Co-operation and Development

PEP	Poverty and Economic Policy
PROGRESA	Programa de Educación, Salud y Alimentación (Education, Health, and Nutrition Program)
PTR	Pupil/Teacher Ratio
RS	Reynolds's- Smonlensky
SSA	Sub Saharan Africa
TNER	Total Net Enrolment Ratio
UBEC	Universal Basic Education Commission
UNICEF	United Nations Children's Education Fund
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNU	United Nations University
WIDER	World Institute for Development Economics Research

1.0 INTRODUCTION

Investing massively in the education of the poor is one of few instruments through which it seems possible to both accelerated growth and improved income distribution (Bourguignon, et al., 2005). Such a strategy has been repeatedly recommended in the development literature over the past 30 years, from the well known book- *Redistribution with growth* (Chenery et al., 1974) to the influential 1990 and 2000 *World Bank Development Reports* (World Bank, 1990; 2000). In a formal conference in Addis Ababa in 1965, African leaders agreed that expanded education would greatly contribute to Africa's economic development (Nnadozie, 2003). In Africa and elsewhere, education plays an important role in economic growth and development. Schultz (1962) helps us to understand the role that education plays in economic growth. He agrees that education increases productivity because educated workers are more efficient than uneducated workers. Psacharopoulos (1984) shows that in Africa, education contributes over 15% to economic growth compared to less than 10% in Europe and North America. The rates of return to education tend to flatten or even decline as countries become more developed; the greater the extent of schooling, the higher the level of income and the faster the rise in earnings (Nnadozie, 2003). The amount of schooling is temporarily positively related to earnings before it levels off or decline after age 40; the larger the amount of schooling, the slower the rate of attainment of maximum income, which leads to higher retirement earnings. Education serves as a force for socialization, training human resources and improving income and productivity. Generally, investment that improves human capital comes by way of schooling, learning on the job, advances in health, and information about the economy. Education correlates positively with per capita income and life expectancy and negatively with infant mortality and fertility rates. According to EFA (2009), education is basic human right and is also crucial for improving child and maternal health, individual incomes, environmental sustainability, economic growth, and for driving progress towards all the Millennium Development Goals (MDGs). Accelerated progress in education could play an important role in getting the world on track to achieve the wider MDGs. Recent research has reinforced earlier evidence on the key role of education as a catalyst for human development (EFA, 2009). The links run two ways. Progress in education can unlock progress in health, nutrition and poverty reduction, and vice versa. This has important implications in areas where the MDG outcomes are lagging far behind target levels.

Labour force is one of the factors that Nigeria has in abundance. However, for labour force to be of significant resource, it must be of good quality, and this is what is limited in Nigeria (Nnadozie, 2003). The only way to improve the skill of labour force is by increasing and improving educational and training opportunities. The problem arises when these educational opportunities are not evenly distributed. Datta (1984) shows that educational opportunities in Africa are neither equitably distributed among different regions and sections of the population, nor are they evenly utilized. Alabi (2008) has demonstrated that accessibility to education in Nigeria is biased in favour of the South-Western region, the wealthy people, and the urban areas in Nigeria. The question is that, what are the consequences of this uneven distribution of educational opportunities?

Unequal opportunities in education are problematic for at least three reasons. First, they are intrinsically unfair. They run counter to basic precept about what a socially just society should look like- and violate the idea of education as a basic, universal human right. Second, inequalities in education are undermining progress towards Education for All and specified goal of Universal Primary Education (UPE) by 2015. Third, apart from consideration of fairness, equity and compliance with global development commitments, extreme inequality in education are inefficient. They contribute to reduced opportunities for social and economic progress in many areas. In short, overcoming inequalities in education is not just the right thing to do; it is also the smart thing to do.

Removing these inequalities is the cornerstone of Education for All Goals. In 2000, the representatives of more than 160 governments gathered at the World Education Forum in Dakar, Senegal, to adopt an ambitious framework for action aimed at expanding learning opportunities for children, youths and adults. At the heart of the framework is the pledge to achieve the six Education For All (EFA) goals. The Dakar promise extends from Early Childhood Care and Education (ECCE) and Universal Primary Education (UPE) to Gender Equality (GE), the spread of Adult Literacy (AL), the expansion of skills programme for youths and adults, and the improvement in the quality of education. Underpinning the framework is a commitment to inclusive and equitable education provision and opportunity for all the world citizens. EFA (2009) has noted that on current trends, universal primary education will not be achieved by 2015. Too many children are receiving an education of such poor quality that leaves school without basic literacy and numeracy skills. Finally, deep and persis-

tent disparities based on wealth, gender, location, ethnicity and other markers of disadvantage are acting as a major barrier to progress in education. According to EFA (2009), if the world's governments are serious about education for all, they must get more serious about tackling inequality. The EFA report persuasively argues that equality must be at the centre of the education planning, to offset rising inequality financing and governance reforms have an important role to play.

However, in order to remedy these inequalities, we need to know the extent of these inequalities, investigate the underpinning causes of these inequalities, and make policy recommendations on how to redistribute the education opportunities in Nigeria. This is the main focus of this study. This study investigates the extent of inequality in distribution of education opportunities in Nigeria. It examines the redistributive effect of the spending and makes policy recommendations on how the educational opportunities can be redistributed and to improve its redistributive effect in Nigeria.

This study is relevant now in Nigeria considering the present problems Nigerian education system is passing through. Some of these problems are discussed in the next section. More so, the gap between the rich that is already wide in Nigeria can continue to increase if the way the resources utilized in basic services such as education are not used in equality enhancing manner. This can be possible through the information the analysis from a study like this will provide.

After section one, which is introducing, the rest of the paper is organised into six sections. Section two discusses the problems of education in Nigeria, section three lays the theoretical foundations of the study, section four reviews the relevant literature as related to redistribution, and section five deals with the methodology employed in carrying out the study. Section six presents and discusses the major findings of the paper, while section seven concludes the paper with policy recommendations.

2.0 CURRENT PROBLEMS IN THE NIGERIAN EDUCATION SYSTEM

Recent global evaluation of education systems indicates that Nigeria has more out of school children than any other country in the world. This trend for Nigeria is cause for global concern. The country accounts for around one in nine of the world's out of school children. And there is little evidence to suggest that, on current policies, the country is set for early breakthrough (EFA, 2009). Nigeria has 8 million children out of school in 2005; 23% of the total for Sub-Sahara Africa and the country is not on track to achieve UPE by 2015. The fact that Nigeria may not achieve Universal

Primary Education by 2015 is demonstrated in Table 1. The table indicates that, while the number of world out-of-school children has decreased from about 103 million children to about 75 million children between 1999 and 2006, the number of Sub Saharan Africa out-of-school children has decreased from about 45 million children to about 35 million, while the number for Nigeria stood at about 8 million during the same period. In fact, the table shows that while about 8% of the out-of-school children in the world in 1999 were Nigerians, this ratio has increased to 11% in 2006.

Table 1: Estimated Number of Out-of-School Children in the World, Sub Saharan Africa (SSA) and Nigeria 1999 and 2006

Region	Total (1999) (000)	% Of the World	% Female	2006 To- tal (000)	% by Re- gion	% Female
World	103223	100	58	75177	100	55
Developing countries	98877	97	58	71911	96	55
Developed countries	1791	2	50	2368	3	43
SSA	45021	44	54	35156	47	54
Nigeria	8218	8	57	8097	11	56

Source: Computed From EFA (2009)

The net enrolment (NER) in Nigeria increased slowly between 1999 and 2005, from 58% to about 62%, well below the SSA regional average of 70% (see Table 2). There are wide geographical differences in primary school enrolment in Nigeria. In the South-West, the average primary NER was 82% in 2006, compared with 42% in the poorer North-West (See Annex Table 1). According to EFA (2009), substantial gender gaps exist in primary school enrolment in Nigeria, particularly in the North. Only 40% of primary school age girls are enrolled in some northern states, compared with 80% in the South-East. There are major income inequalities in school access. Children who have never attended primary school come mainly from the poorest households. In Kaduna state, 48% of girls from the poorest 20% of households have never attended, compared with 14% in the richest quintile. Low enrolment and atten-

dance rates among disadvantaged groups have many causes in Nigeria. Cost is a significant barrier to many to go to school. Primary education in Nigeria is supposed to be free, but majority of the parents report paying formal or informal fees. Average education-related costs represent about 12% of average household expenditure², a burden especially great for poor households.

Table 2: Primary School Net Enrolment in Nigeria Compared With the Rest of the World (%)

Region	1991	1999	2006
World	81	82	86
Developing Countries	78	81	85
Developed Countries	96	97	95
Sub Saharan Africa (SSA)	54	56	70
Nigeria	-	58	62

Source: Computed From EFA (2009)

Other demand-side barriers are less tangible in education system in Nigeria. Cultural attitudes, such as perceptions that girls' education is of lesser value than that of boys, have a powerful bearing on the distribution of opportunity, especially in the North. Parents in the northern states often prefer schools offering Islamic education, which do not teach the core subjects of the national curriculum (World Bank, 2008e).

Supply-side factors are also important. Serious quality deficits in education exist across Nigeria. An assessment of fifth grade students in 2003 found that only 25% knew the answer to more than a quarter of the test questions in core subjects. The average class size ranges from 145 pupils in the northern state of Borno to 32 in the Southern state of Lagos (Adediran et al., 2008). The pupil/teacher ratio in Nigeria is higher than the world average. Annex Table 2 shows that the primary pupil/teacher ratio in Nigeria was 37 in 2006 compared with average of 25, 28 and 14 for world, developing countries and developed countries respectively. The national ratio of students to core textbooks is 2.3:1, the ratio of students to toilets 292:1 (World Bank,

² This burden is on high side when you compared with the fact that the cost of basic education in Ghana is only 3% of the household income (Sackey, 2007).

2008c; 2008d). A significant proportion of teachers lack the minimum requirement of three years of post-secondary education, many have limited mastery of the subject they teach (World Bank, 2008f).

The global projection of Nigerian education system is alarming. It is projected that by 2015, the net enrolment in primary and secondary school will increase from 65% to 73%, when Nigeria is expected to get all the school age children into the schools. It is also indicated in Table 3 that the number of out-of-school children in Nigeria will decline marginally from 8,097,000 to 7,605,000 children. About 7.6 million out-of-school children will also be the highest number of out-of-school children from a single country in 2015 (World Bank, 2008a; 2008b).

Table 3: Projections of Out-of-School Populations in 2015 for Countries with High Numbers of Out-of-School Children based on 2006

Country	TNER (2004- 2007)	Children out of school (2004-2007) (000)	Projected TNER (2015)	Estimated Out of School children in 2015 (000)
India	94	7208	99	626
Bangladesh	92	1371	98	322
Brazil	96	597	98	248
Nigeria	65	8097	73	7605
Pakistan	66	6821	81	3707
Burkina Faso	48	1215	64	1062
Ethiopia	72	3721	93	1053
Philippines	92	953	93	919
Niger	44	1245	72	873
Kenya	76	1371	89	859
Ghana	65	967	81	712
Turkey	91	729	91	710

Mali	61	793	76	628
Mozambique	76	954	94	689
Yemen	75	906	94	265
Iraq	89	508	95	246
Senegal	72	513	90	228
Sub total		37969		20352
Remaining 117 Countries included in projection		10387		8341
Total		48356		28693

Source: Computed from EFA (2009)

Note: TNER for Total Net Enrolment Ratio

The high level of out-of-school children in Nigeria resulted in an illiteracy level that is high by any country's standard. Table 4 shows that 23.296 million Nigerians aged 15 and above were illiterates as at 1994. This number has increased to 23.451 million in 2006. The projection to 2015 indicates that more than 21 million Nigerians adults will still be illiterates, the year for that is expected that all adults in Nigeria should be able to read and write. When the proportion of total illiterates in the World and in Sub Sahara Africa is compared with the number of illiterates in Nigeria, Nigeria contributes 3% and 15% of the total number of illiterates in the World and Sub Saharan Africa respectively. This may not change even in 2015. Another important information in table 4 is that more than 60% of the illiterates in Nigeria are female, being 64% in 2006, which is projected to be 65% in 2015. Since the education of the mother is positively correlated with the education of the children; this high level of illiteracy among women may explain the high number of out-of-school children.

Table 4: Estimated number of illiterates (15+) in 1994 and 2006 with projection to 2015

Region	1994		2006		2015	
	Total (000)	Female (%)	Total (000)	Female (%)	Total (000)	Female (%)
World	871096	63	775894	64	706130	64
Developing Countries	858680	63	766716	64	698332	64
Developed countries	8686	64	7660	62	7047	59
SSA	133013	61	161088	62	147669	60
Nigeria	23296	64	23451	65	21577	63

Source: Computed from EFA (2009)

Central to abysmal performance of education system is finance. This is important in terms of amount and distribution of the fund. In Nigeria, between 3.5% and 4.2% of GDP is allocated to education. However, education represents only 11% to 13% of total government spending, which compares unfavourably with the regional average for Sub Sahara Africa (SSA) (World Bank, 2007b). Table 5 shows that the regional average of government spending on education SSA is 18% (it varies from 4% to 30%). The consequences of underfunding are powerfully captured in the following assessment of education in Nigeria by World Bank: *‘spending on essential inputs, such as textbooks, instructional materials, in-service teacher training, and operations and maintenance are inadequate. About half of primary schools require major rehabilitation, with additional 251, 000 classrooms needed countrywide’* (World Bank 2008e:15). Raising government spending on education in Nigeria to the regional average would release substantial additional resources to address the many difficulties the sector faces. However, not all problems in Nigeria’s education financing can be traced to unequal fiscal decentralization. National statutory accountability mechanisms exist to ensure that state and Local Government Area (LGA) plans, where they

exist, are aligned with national goals in education. As a result, the priority that LGAs give to primary education varies enormously, even within states. In Kano, 28% of the Dala local government budget was allocated to primary education, compared with 12% in Bichi (Kano State Ministry of Education, 2008). Recognizing the need for additional financing in education, the federal government created Universal Basic Education Commission (UBEC) intervention fund, which channels federal resources directly to basic education. Between 2005 and 2008 about U.S 750 million dollars was made available to states through the fund. Unfortunately, this has done little to enhance equity or efficiency in Nigeria (EFA, 2009).

Table 5: Total public expenditure as % of total government expenditure, 2006

Region	Minimum	Median	Maximum
World	4	15	31
Developing Countries	4	16	31
Developed countries	6	12	17
SSA	4	18	30
Nigeria	11	12	13

Source: Computed From EFA (2009)

With all these problems confronting the Nigerian education system, the Nigerian government cannot be inactive about it. According to World Bank (2008e), the Nigerian government has to be forthright about the scale of the challenge it faces, calling for *'nothing less than a major renewal of all systems and institutions'* (World Bank, 2008e:1). Top priority include improved quality, intensified efforts to recruit teachers, strengthened budget management and the development of financing mechanisms that can help allocate resources more equitably. Rapid improvement along these lines will be needed if Nigeria is to encourage school enrolment, reduce illiteracy and out-of-school children.

3.0 THEORETICAL FRAMEWORK

Contributions toward the finance of education may redistribute disposable income. This redistribution may be intended or unintended. Even in the latter case, policy makers may be interested in the degree to which it occurs because of consequences for the distribution of goods and services other than education and ultimately

for welfare. Redistribution can occur when payments toward the financing of education are compulsory and independent utilization, most obviously when education is partly financed from government tax revenues. If tax liabilities rise proportionately with gross incomes, then the post tax distribution of income will be more equal than the pre tax distribution. Redistribution can be vertical and horizontal. The former occurs when payments are disproportionately related to ability to pay. The extent of vertical redistribution can be inferred from measures of progressivity. Horizontal redistribution occurs when persons with equal ability to pay contribute unequally to education payments. One way of measuring the redistributive effect of any compulsory payment on the distribution of incomes is to compare inequality in prepayment incomes as measured by, for instance, the Gini coefficient – with inequality in post payment incomes (Lambert, 2001). According to O’ Donnelle, et al (2007), the redistributive impact can be defined as the reduction in the Gini Coefficient caused by the payment. Thus:

$$RE = G^x - G^{x-P}$$

Where, RE is the redistributive effect, G^x and G^{x-P} are the prepayment and post payment Gini coefficients respectively, X denotes prepayment income or more generally some measure of ability to pay, and P denotes the payment (amount paid for education).

4.0 LITERATURE REVIEW

4.1 Redistribution

Redistribution is the transfer of income, wealth or property from some individuals to others (Benabou, 2000). One premise of redistribution is that money should be distributed to benefit the poorer members of society, and that the rich have an obligation to assist the poor, thus creating a more financially egalitarian society. The idea is that the rich exploit the poor or otherwise gain unfair benefits (Benabou and Ok, 2001). Another reason for redistribution is that a larger middle class benefits an economy by enabling more people to be consumers, while providing equal opportunities for individuals to reach a better standard of living. Some proponents of redistribution argue that capitalism results in an unequal wealth distribution (Plotnick, 1986). They also show that economic inequality contributes to crime. There is also the issue of equal opportunity to access services such as education and health care. The

objective of moderate income redistribution is to avoid the unjust equalization of incomes on one side and unjust extremes of concentration on the other sides. Today, income redistribution occurs in some form in most democratic countries, most commonly through income-adjusted taxes (in which the amount of tax paid is directly connected to one's income), some of which goes to fund welfare programs to assist the poor, or to all of society. Progressive income taxes are a widely used method of income redistribution. The difference between the Gini index for an income distribution before taxation and the Gini index after taxation is an indicator for the redistributive effects of such taxation.

One can distinguish three broad rationales for redistribution:

(i) The pursuit of social justice as an ethical imperative; (ii) the achievement of mutually advantageous efficiency gains; and (iii) the exercise of self interest through the coercive power of the state. Though the distinction between the rationales is blurred, these three rationales nevertheless provide a useful organizing framework within which to assess some of the main approaches to the analysis of redistribution (Broadway and Keen, 2000).

4.1.1 Redistribution for Social Justice

One might view a concern with distributional issues as a matter of ethical preference that transcends, or at least, is not explicitly modelled as part of the determinants of economic behaviour. Different views are taken as to what constitute social justice. The most common, still, indeed, the dominant approach to the normative economic analysis of redistribution, is the welfare-theoretic one, according to which the social desirability of alternative social states is to be assessed in terms of some social welfare function $W(U_1, \dots, U_N)$ defined over the utility levels U_i , $i = 1, \dots, N$ of the population under study. Suppose that all N members of the population have the same strictly concave utility function $U(Y)$ defined over lump sum income Y . Then the maximization of any S-concave social welfare function means that, roughly, that social welfare is increased by replacing each individual's utility by a weighted average of all utilities. The redistribution of income that thus emerges is quite distinct from any concern with the distribution of well being; one arrives at complete equalization of incomes even in the utilitarian case $W = \sum U_i$, in which government cares not about the distribution of utility but only its total. What ultimately drives redistribution in this case is not so much a concern for equality of utilities as a diminishing private mar-

ginal utility of income combined with identical utility functions. This welfare-theoretic approach leads itself well to the applied analysis of distributional issues. Each individual- and, more particularly, each policy maker- can be conceived of as having a distinct social welfare function, and perhaps too distinct cardinalisations of utility. For any given preferences, a given complete specification of how the economy functions, it is then in principle a straightforward matter to compute an optimal distribution of income.

Though it has thus proved empirically valuable, the welfare-theoretic approach has powerful critics. One line of attack sees it as too permissive in attaching no significance to the process by which the economy reaches its final state. No importance is attached, for example, to any property rights that might stand in the way of redistribution (Roemer, 1996). The second line of criticism of the standard welfare-theoretic approach, argued most forcefully by Sen (1992), sees it as too narrow. It focuses only on individual's utilities, and moreover sees these as reflecting only real incomes in a somewhat narrow sense. It is possible, for example, to imagine redistribution going hand in hand with political repression. One might wish to attach importance to the latter as well as to the former. Moreover, what matters in evaluating alternative economic arrangements may not be income in the usual sense but some rather wider notion of the quality of life enjoyed. This underlies Sen's notion of capabilities and functioning. The idea is that poverty is not simply an adequacy of income; it is a lack of basic capabilities to function as human being. Alleviating poverty then involves generating minimally acceptable capabilities, which in turn requires that resources be tied to personal circumstances (such as age, gender, health status) and social circumstances (physical and social environment, epidemiological factors, public health characteristics). This approach has been developed into an alternative to the standard approach to distributional analysis described above. These two approaches - the welfare-theoretic and the capabilities approaches - are of course not the only possible approaches to social justice and its distributional consequences, though they are currently the most influential. One alternative with a strong historical pedigree, for example, is the notion that all should suffer equal sacrifice in financing government, a precept discussed fully in Musgrave (1959). Though this does not in itself call for redistribution- no sacrifice is needed if there is no public expenditure to be financed- it clearly is a distinct principle of distributive justice.

4.1.2 Redistribution and Efficiency

One of the ideas most deeply ingrained in thinking about economic policy is the notion of an inherent trade-off between equity and efficiency. Efficiency-enhancing policies increase the size of economic pie, redistribution, on the other hand cuts the pie more fairly but in the process causes to shrink (Okun 1975). This stark contrast view is reflected in Musgrave's (1959) influential distinction between three roles of government: stabilization, allocation and distribution. Allocative efficiency and distributive justice were seen as inherently conflicting objectives, and for clarity of purpose, at least, best kept distinct. In recent years, however, there has been increasing interest in the possibility that redistribution and efficiency might not always conflict, but that in some circumstances, it might be possible to have both, to make the pie larger by cutting it more fairly. At a policy level, this new view of redistribution was lent special force by the observation- at least until recently- of economic success going hand in hand with improved distributional equity in some of the tiger economies (Kanbur, 2000). At a theoretical level, it was fed too by recognition that in a second-best world redistributing income might act on additional constraints in such a way as to generate efficiency gains. Broadway and Keen (2000) have demonstrated that redistribution might actually improve the efficiency with which the economy operates.

4.1.3 Redistribution as Expropriation

A third motive of redistribution is simple greed: self-interested individuals may possess, and certainly have an incentive to acquire, the power to redistribute towards themselves (Broadway and Keen, 2000). More generally, of course, all practical measures of redistribution, however motivated, emerge from some political arena. The broader topic of how politics can shape the outcome of redistribution is discussed in Broadway and Keen (2000).

4.1.4 Constraints on Redistribution

There is no presumption about how progressive the redistributive lump-sum tax structure should be, or even if it should be progressive at all, even under ideal first-best conditions (Broadway and Keen, 2000). Traditionally, most analyses of optimal redistributive policy have presumed that the distortionary taxation must be used. Thus, the process of redistribution induced inefficiencies, forcing redistributionally minded policy makers to choose from points along a second-best utility possibilities frontier (UPF). The expectation was then that, whatever the form of the social objec-

tive function, the progressivity of the tax system will be even less than that it would have been under first-best redistributive taxation (Mirrlees, 1974)

Recent literature has suggested that rather than being imposed externally, distortionary taxes are optimal instruments in a second-best world in the sense that they enlarge the utility possibilities available to the policy maker. This literature stresses that what prevents the government from redistributing along the first-best UPF is imperfect information (Nichol and Zeckhauser, 1982). The government cannot directly discern the better-off from the less well-off, so must induce individuals to reveal their true types through their behaviour. The well-being of individuals depends on the set of circumstances facing them - their preferences, the state of their health, the effort they exert, their attitude toward risk, their productivity, and so on. Some of these are likely to be private information to the individual, and this inhibits the government from pursuing its welfaristic objectives. It does not preclude redistribution entirely because the government may be able to observe behavioural and other characteristics of individuals that are correlated with these underlying circumstances. But imperfect information restricts the utility possibilities, or the efficiency – equity – trade-off, available to the government (Mirrlees, 1974)

The Mirrlees-Stiglitz model illustrates the implication of redistributive policy of the government not knowing certain features of the economy and of its inhabitants. It presumes that the government is ill-informed in one key respect – it knows only the aggregate distribution of household characteristics – but well-informed in another – it knows household preferences and can accurately observe incomes. Other informational assumptions are possible. If the government does not know even the aggregate distribution (or household preferences), there is an element of aggregate uncertainty to be resolved on top of the standard redistributive problem. But the nature of the limit of redistribution itself does not change. On the other hand, the government may know more than just the aggregate distribution of abilities. For example, it may have access to a signal or ‘tag’ that is correlated imperfectly with underlying characteristics (Diamond and Sheshinski, 1995). If so, the government can condition redistribution instrument according to the tag obtained by a person. Segmenting the population into tagged and untagged groups allows the government to apply a separate redistributive tax-transfer system within each group, as well as redistribution from the untagged, to the tagged group. The result is that more redistribution is made to the less well-off within the tagged group; but at the expense of less distribution to the deserving who

are mistakenly not tagged. If the tagging is costless, society is necessarily better off by its use since it expands the utility possibilities available. But if it is costly, the benefits of the additional information must be set against the costs. Moreover, as some observers have pointed out, the use of tagging may also raise questions of political feasibility (e.g. Sen, 1995). The more targeted are transfers towards the truly needed, the less support might be forthcoming from the excluded middle class who constitutes the bulk of voters.

The standard optimal redistributive tax theory just discussed, assumes that the otherwise ill-informed government can observe all tax payers incomes. But income tax liabilities are typically based on self-assessment by tax payers, so the accuracy of this procedure relies on the tax payers truthfully reporting their incomes. The extent to which truthful reporting occurs depends not only on the standards of behaviour of the community, but also on the monitoring and sanctioning activities of the tax authorities (Bordignon, 1993). In theory, one might suppose, following Becker (1968), that penalties for evading taxes could be set high enough to eliminate it at minimal cost to the administration. In practice, such maximal sanctions are rarely observed for tax evasion, let alone for other criminal acts. Various arguments have been put forward for the absence of maximal sanctions: there may be errors in conviction: sanctions may be costly to impose and the costs may increase with the level of sanction; criminals may be able to engage in costly avoidance activities which reduce the probability of being caught, there may be imperfect information about the probability of apprehension or about whether acts are subject to sanctions; if law enforcement is general so that all crimes are deterred with the same probability, and if there is a limit to the maximal sanction so that the general probability of apprehension is not too small, it may be optimal to use less than maximal sanctions for lower gain crimes to prevent over-deterrence of these crimes. Whatever the case may be, it is typically assumed in most of the tax evasion literature that there is some limit to the penalty for tax evasion, a limit that is below the maximal sanction (Cowell, 1990). The presence of tax evasion implies a further limit to redistribution. This suggests that the revenue responsiveness of an increase in the tax rate will be reduced by the presence of evasion. This would seem to increase the efficiency costs of redistribution, and thereby further worsen the efficiency-equity trade-off (Broadway and Keen, 2000). The under reporting of income is not the only form of illegal behaviour associated with tax system. In some settings, tax administrators themselves may engage in corrupt practices. Tax

collectors may collude with tax payers to under – report income with the gain being shared by the two parties (Flatters and MacLeod, 1995). Or, if their own income depends in part on the revenue they collect, tax collectors may credibly engage in extortion by demanding payments from tax payers under threat of over reporting their income (Hindriks et al., 1998).

All these discussions point to the fact that there is limit to which taxation can be used to redistribute income, particularly in Nigeria where the problem of tax evasion is pronounced. Nigerian governments spend considerable resources to provide private goods at prices that are substantially below marginal cost, and often zero. Basic health and education services, for example, have many characteristics of private goods yet are often provided free. This implies redistribution. However, the issue is that, does the way this basic service is financed in Nigeria redistribute income? This study will attempt to provide answer to this question.

4.2 Education, Inequality and Wages

4.2.1 Education and Inequality

Education acquisition is linked to inequality, particularly family background (e.g. parental income and education) and aspects of economic and social disadvantage experienced across the life course. Much of the empirical work by economists and social policy researchers relates early age test scores of children to family background and uncovers important correlations (Curie, 2001). It is clear from this literature that test score gaps emerge across children from different family backgrounds at early ages. For example, a review by Meyers et al. (2004) documents sizable disparities in pre-school enrolment between children from high and low education parental backgrounds. Thus, inequality in the cognitive and non-cognitive skills of individuals can be traced to the early years and it can be argued that these early age skills are key drivers of subsequent economic and social success or failure (Heckman et al., 2006). Significant gaps in cognitive and non-cognitive skills arise early on, even before school, and these gaps are strongly linked to social disadvantage and income inequalities (Machin, 2009).

Test score gaps in the early years continue to develop and widen in the school years. In academic work and in the policy arena the links between education experiences and measures of childhood disadvantage have long been recognized. Empirical research has often linked observable measures of educational achievement to various

aspects of disadvantage. These include (among others): child poverty, parental education and income, parental attitudes, neighbourhood factors. There is now a sizable body of evidence that educational achievement is significantly lower for children from disadvantaged backgrounds (Gregg and Machin, 1999, 2001, Mayer, 1997). This includes a higher probability of dropping out-of-school, lower qualification attainment, and lower test scores at various ages through the school years (Machin, 2009).

There are a range of issues pertaining to the way in which inequality and disadvantage lower the probability of participation in higher education. Work looking at participation in higher education, or more specifically university attendance, has shown that people from lower income backgrounds have significantly lower participation rates (Blanden and Gregg, 2004). Another feature of post-compulsory education and its connection to social disadvantage is that people from poorer backgrounds who do participate in higher education tend to enrol on courses, or in institutions, that yield lower economic and social benefits. This includes a lower likelihood of studying at 'elite' universities (Chevalier and Conlon, 2003) and also a higher probability of studying for vocational qualification rather than an academic qualification (Conlon, 2002).

Social disadvantages experienced earlier in life also impact strongly on adult life chances (Bynner and Feinstein, 2004). This is clearly bad for those affected individuals and for national prosperity, and research has shown that education is an important factor in explaining why basic skill deficiencies (like poor literacy and numeracy skills) arise (Machin, 2009). Studying the characteristics of the low basic skills group amongst the adult population shows them very clearly to be those who left the school system at the compulsory school-leaving age, who typically have no educational qualifications, and who come from poorer and more disadvantaged social backgrounds. The lifelong learning process evidently, is biased towards those that already have more education, and this has a reinforcing effect on the educational inequalities.

The persistence of skills problems through adult life is not only bad news for the individuals concerned (in terms of unemployment, deprivation, and so on) but also for their families, their children's educational performance, and for the communities in which they live. Inequalities and social disadvantage clearly have much wider and far-reaching implications since cycles of disadvantage can run across generations and

through families and communities (Machin, 2009).

4.2.2 Education and Wages/Earnings

It is well established that more education is associated with higher wages and better job prospects. Much of the empirical work in this area has its roots in some of the highly influential and path-breaking work done in the economics of education field by American economists in the 1960s. During this period, a number of highly influential economists (Becker, 1964, Mincer, 1958 and Schultz, 1961, 1963) conducted major, innovative research applying economics to education. This included the development of human capital theory, work on general versus specific training and the derivation of the earning function (that relates labour market earnings to schooling levels.) The earning function has become an almost ubiquitous tools used by economists. Mincer's (1958,1974) highly influential work developed the earnings function (the Mincer earnings equation) that relates log (earnings) to years of schooling and experience and is one of the most widely used amongst empirical economists. The typical specification of an earnings equation is:

$$\text{Log}W = a + bS + c_1X + c_2X^2 + u$$

Where W is earnings, S measures schooling, X denotes years of experience, and u is a random error term. Earning equation of this form almost invariably show a monetary 'return' to schooling (i.e. b is estimated to be positive). Thus people who acquire more education get paid more (and get better jobs). This is, of course, a return that is private to the individual making the investment.

Machin (2009) has demonstrated as sizable educational wage differentials that accrue to people with tertiary education levels relative to post-secondary non-tertiary levels in 15 countries. The existence of sizable gaps in earnings is seen for all the countries; according to these earning differentials, acquisition of more education leads to significantly higher earnings.

Simple earnings functions that are used to identify earnings gaps between people with different levels of education and schooling do not contain the fullest of variables that, in the real world, relate to earnings potential (Machin, 2009). However, rather than looking at average differentials that accrue to education, or returns to ob-

servable characteristics, we can also consider other unobserved factors across the earnings and education distribution. Quintile regressions are increasingly being used to look at effects at different quintile of the distribution rather than at the average (Angrist et al., 2006; Autor et al., 2008). This can help us understand more about effects of education on the distribution of earnings, rather than just at the average. The example is given in Table 6. The table implies that the returns to education are higher for women than for men at lower income level (quintile 1), whereas the reverse is the case at higher income level. At quintile 9, the return to education is higher for men than for women. This reinforces the fact that estimating only the average return to education will not only hide its effect on income distribution but will also hinder the associated gender biases.

Table 6: Quintile Regression Estimates (0.1, 0.5 and 0.9 quintiles)

Quintile	Male	Female
0.1	0.308	0.412
0.5	0.465	0.438
0.9	0.437	0.392

Source: Computed From Machin, 2009

Returns to individuals in terms of higher wages are only part of the story in which education affects inequality. Investment in education can clearly impact on other outcomes and generate externalities that can cause the private social returns to diverge from one another (Machin, 2009). One way of thinking about this is to consider the impact of education on other non-wage economics and social outcomes. Social science researchers have considered the wider benefits of education by studying connections between education and outcomes like health, crime, civic engagement, and intergenerational effects on children's outcomes. There is evidence of important externalities (Lleras-Muney, 2005), in that education significantly improves health outcomes, is associated with lower crime levels (Feinstein and Sabates, 2005; Machin and Vujic, 2005), and enhances the extent of civic engagement and participation (Dee, 2004). Moreover, there are important intergenerational effects of education of adults on the education of their children (Black et al., 2005).

4.2.3 Changes in Wage Inequality and Education

According to standard market economics, it is normally thought that, starting from a position where the demand and supply are perfectly equalized (in a competitive market), a boost in the supply of graduates should, *ceteris paribus*, lead to a reduction in the relative wage between graduates and non-graduates because employers have a wide range of similarly qualified people to choose from (Machin, 2009). However, reductions in relative wages need not occur if demand for graduates is also rising and, in fact, relative wages could even rise if relative demand outpaces relative supply. If, for whatever reason, employers demand more tertiary graduates, then the expansion may not cause a fall in the wage premium that graduates receive. In fact, if demand is increasing faster than supply, the wage premium can increase, that is, although the number of graduates is rising, graduate-level jobs are increasing at a faster rate and so are commensurate with higher relative wage. An intuitive way of thinking about this supply-demand approach is in terms of an economic model where the wages and employment of graduates and non-graduates are the outcomes of a race between supply and demand. That is, demand and supply curves are shifting and the question is which curve has moved the most.

The simply supply-demand framework set out above has been widely used in academic research on changing labour market inequality (Katz and Murphy, 1992). In fact, large increases in the demand for graduates are the only way to rationalize constant (or increasing) wage premiums that have been observed in the face of the expansion of tertiary education in many countries. For example, much work has been done to understand what lies behind the increase in the demand for educated workers in the United States and United Kingdom. In both countries, wage premiums have risen (or remained constant in more recent years) despite a massive expansion in the supply of graduates with a tertiary education.

It is also made clear that adjustment to changing conditions affecting demand and supply can be reflected in employment or unemployment probabilities as well as in wages (Machin, 2009). In fact, if there are wage rigidities (created e.g. by labour market institutions), adjustment through employment may occur instead of adjustment through wages (Nickell and Bell, 1995). It has been hypothesized that the fall in the relative demand for unskilled labour manifests itself in Anglophone countries as a rise in wage inequality, whereas in some countries of Continental Europe (e.g. Germany),

it is reflected in the rise of unemployment (Krugman, 1994). Some evidence to support this hypothesis has been found for Germany (Puhani, 2003). This argument is also made by Goux and Mauin (1997) in relation to France.

In Nigeria, the private rate of return to education is low for graduates of colleges of education. It is higher for polytechnic graduates and still higher for university graduates. Furthermore, the mean earnings increase with higher years of labour market experience. Thus, the higher the level of education is, the higher will be the rate of return to education that is accruing to the individual in Nigeria (Okuwa, 2004). According to Okuwa (2004), efforts should be made to improve the quality of and investment in education and to encourage individuals to invest in and to pay for higher education in Nigeria.

4.3 The Role of Policy in Education Redistribution in Developing Countries

4.3.1 The Case of Tanzania

A strong partnership of government, donors and civil society has been instrumental in the rapid improvement in access to and completion of primary education in the United Republic of Tanzania. In 2001, the government abolished primary school fees and launched a programme to simultaneously improve access and quality at the primary level. The main components of the programme according to World Bank (2005) were:

- Increased spending on education with focus on primary education. Public education spending rose from 3% of GDP in 2000 to 4.5% in 2005.
- School construction and rehabilitation through school development grants. Between 2002 and 2004 some 30,000 new classrooms were built.
- Introduction of double shifts. Splitting shifts made it possible to accommodate the large, rapid enrolment increases after fee abolition.
- Recruitment of teachers and upgrading of current staff. An additional 32, 000 primary school teachers were reunited between 2002 and 2004.
- Introduction of school capital grants. At school level, grants have been paid for teaching and learning materials, including textbooks, to help defray school operating expenses and to support teachers professional development. Between 1999 and 2006 the number of out-of-school children of primary school age decreased dramatically, from over 3 million to less than 150,000. The primary NER went from 50% in 1999, before the programme to 98% in

2006(EFA, 2009). Completion rates also improved rapidly, partly due to improved teacher training and increased availability of teaching and learning materials. With the introduction of school capital grants, non salary spending at school level increased from just 4% of the primary education budget to 27% in 2004 (HakiElimu, 2005).

4.3.2 The Case of Ethiopia

Moving into the UPE fast lane, Ethiopia faces daunting development challenges, including high levels of poverty, chronic malnutrition and recurrent drought. Yet the country has sustained and impressive push towards UPE. The push started in 1997 with the adoption of the first Education Sector Development Plan (ESDP I), which prioritized increased access, greater equity and improved quality. Through the subsequent ESDP II and ESDP III, overall enrolment has increased from 3.7 million to 12 million in 2007. Ethiopia has registered one of the fastest NER increases in SSA. It has cut the number of out of school children by over 3 million. Efforts to improve equity have also produced results. The gross enrolment rate (GER) in rural areas increased from 45% to 67% between 2001 and 2005. Secondary education has expanded too with numbers doubling since ESDP I (Ethiopia Ministry of Finance and Economic Development, 2006)

The priority attached to education in public spending has increased steadily since 1999: The education budget grew from 3.6% of GNP to 6%. Within the education budget, more weight has been attached to the primary sector. It accounts for 55% of spending under ESDP III compared with 46% under ESDP I. International aid accounts for around 17% of projected spending to 2010. A key target for increased public spending in education has been rural school construction, of the nearly 6000 schools built since 1997, 85% are in rural areas. This has reduced distance to school and unlocked demand for education, especially for girls (distance being significant barrier to girls' participation in education). Textbooks distribution has improved and contents revised to enhance quality and relevance: School books are now published in twenty-two local languages.

However, the substantial expansion of enrolment has created system-wide pressures. Instead of going down as planned, the average Pupil/Teacher Ratio (PTR) increased from 42:1 in 1997 to 65:1 in 2006. A national learning assessment con-

ducted in 2004 recorded no improvement in quality. Drop out remains high, households' contribution to financing are high, both for school construction and recurrent costs, leading to concerns that this could further foster inequality.

Ambitious targets and strategies have been adopted to address these problems. Goals for 2010 include a GER of about 100% and a 64% primary school completion rate. Classroom construction is being scaled up, with an emphasis on building near marginalized communities in areas with large out of schools populations. Financial incentives for girls' education are being strengthened, with targeted interventions in areas where gender gaps are wide. Ethiopia envisages recruiting almost 300,000 teachers by 2010 to bring down PTRs while accelerating progress towards UPE (EFA, 2009).

4.3.3 The Case of Nepal

In recent years, Nepal has registered rapid progress towards UPE. The NER for 2004 stood at 79% up from 65% in just five years. The numbers of children out of school have fallen from 1 million to 700,000 and survival to grade 5 has increased from 58% to 79%. The fact that this progress was sustained during a civil conflict that ended only in 2006 points to remarkable achievement. Nepal experience demonstrates that even the most deeply rooted problems and inequalities are susceptible to public policies. According to World Bank (2007d), the following policy efforts were put in place to achieve an impressive performance in Nepal:

- Strengthened local accountability. In 2001, reforms were initiated to increase school accountability and strengthened the community management. Devolution of authority to district and community level insulated education from a general breakdown in centralized planning and service provision, and from impact of civil conflict. Around 13% of public schools have been transferred to school management committees. Each committee is provided with a start-up grant. Schools receive salary grants to help them recruit teachers. A shift to financing linked to enrolment diluted political influence over resource allocation.
- Improved equity. Reforms have scaled up scholarship for girls and disabled children at primary and secondary level. The number of scholarship recipients increased to 1.7 million and the aim is to reach 7 million by 2009. Progress towards equity is reflected in a shrinking gender gap. Gender enrolment ratio

has increased from 0.77 in 1999 to 0.95 in 2006. And enrolment and survival rates for low-casts groups are increasing.

- Infrastructure expansion and a focus on quality. The country has embarked on an ambitious programme to increase the number of schools and classrooms, expand teacher recruitment and improve the supply of textbooks.
- Effective donor support. Nepal has been at the forefront of effort to improve donor governance. Aid harmonization began in 1999, with five donors pooling resources to finance a primary education subsector programme. It resulted in a steady increase in the share of pooled aid finance, reducing transaction costs and enhancing predictability (Nepal Ministry of Education and Sports, 2006).

4.3.4 The Case of Nigeria

The Federal Republic of Nigeria is made up of thirty-six States and the Federal Capital Territory. There are about two Federal Government Colleges in each state. These schools are funded and managed directly by the Federal Government through the Ministry of Education. Teachers and staff are Federal Government employees. Teachers at the Federal Government schools possess a Bachelors degree in Education or in a particular subject area, such as, Mathematics, Physics etc. These schools are supposed to be model schools carrying and maintaining the ideals of secondary education for Nigerian students. Admission is based on merit, determined by the National Common Entrance Examination taken by all final year elementary school pupils. Tuition and fees are very low, approximately one hundred dollars (\$100.00), because funding comes from the Federal Government (World Bank, 2007c; 2007d; Alabi, 2008).

State owned secondary schools are funded by each state government and are not comparable to the Federal government colleges. Although education is supposed to be free in the majority of the state owned institutions, students are required to purchase books and uniforms costing them an average of thirty thousand naira (\$200.00). Teachers in State owned institutions usually have a National Certificate of Education or a Bachelors Degree. Often these schools are understaffed due to low state budgets, lack of incentives and irregularities in payment of staff salaries (World Bank, 2007a; 2007b).

Private secondary schools in Nigeria tend to be quite expensive with average

annual fees averaging from N150 to N300 thousand (\$1000.00 - \$2000.00). These schools have smaller classes (approximately ten to fifteen students per class), modern equipment and a better environment. Teachers in these institutions all possess at least a Bachelors degree in a specific course area and are sent for workshops or short term programs on a regular basis.

The failure of any educational system to fulfil the objectives for which it was established is often the precondition for calls for its reform. Such is the case in Nigeria where the history of educational development is replete with various attempts at innovations and reforms, the major ones being the Universal Primary Education (UPE) programme in the Western (1955) and Eastern (1957) regions of the country, the free UPE policy of the Federal Government (1972), the development and adoption of the National Policy on Education in the 1980s along with the accompanying 6-3-3-4 system of education, and the current Universal Basic Education (UBE) which commenced in 1999. Equal allocations to education lead to unequal effect in Nigeria. Some 70% of available resources are allocated equally across states without regards for differences in need. Only 9% of resources are directed to the most disadvantaged states and to activities promoting education for physical and mentally challenged children. Disbursements have been much lower than expected in the education sector (NBS, 2006a). Only 69% of allocated funds to education were disbursed (EFA, 2009). Problems of education funding in Nigeria range from inadequacy of policy coordination to complex bureaucratic procedure and weak capacity in state education bodies. The use of funds is inflexible. The Universal Basic Education Commission (UBEC) has strict guidelines on the proportion of funds that can be spent on pre-primary, primary and junior secondary education (NBS, 2006b).

According to EFA (2009), improved governance and the return to democracy by Nigeria have done little to narrow inequalities in education. One reason is that insufficient attention has been paid to the development of a more equitable financing system. Primary net attendance rates (NARs) in Nigeria range from 85% in Anambra and Ondo states to less than 30% in Jigawa and Zamfara states. These disparities are linked to substantial differences in poverty rates. In 2004, the poverty headcount ratio in Anambra was 20%, compared with 95% in Jigawa. Under an equitable financing system, more resources would have been allocated to states with low levels of participation in education and high rates of poverty. In Nigeria, the equity principle is turned down; the wealthiest states and regions with the highest education participation secure

the lion's share of Federal resources. For example, Lagos receives around five times as Jigawa, which has attendance rates less than half of those in the commercial capital (NBS, 2006a).

Fiscal decentralization has reinforced regional disparities in education. Since the return of multiparty democracy in 1999, an increasing share of federal revenue (predominantly from oil and gas) has been allocated to state governments and local governments (Adediran et al. 2008). Since 2002, about half the federal budget has been allocated to state and Local Governments Areas (LGAs). Of this share, a third is reserved for the four oil producing states in Niger delta and the remainder is distributed under a complex formula that produces a simple result: large financing inequalities as well as type of expenditure (Bennell et al., 2007).

4.4 Education Subsidies and Redistribution

Most OECD countries heavily subsidize higher education. These education subsidies are typically justified on the basis of perceived external effects of human capital accumulation, capital market imperfections and redistribution concerns. Dur and Teulings (2001) argue that education subsidies benefit unskilled individuals by boosting the supply of skilled workers compared to that of unskilled workers, thereby reducing wage differentials between skilled and unskilled workers. For realistic parameter values, they find that this general equilibrium effect broadly offset the direct regressive impact of educational subsidies. Broadway et al (1996) and Anderson and Konrad (2001) offer an alternative explanation for education subsidies. They argue that education subsidies are called for if the government commit and engages in excessive redistribution after investments in human capital have been made. Bovenberg and Jacobs (2003) show that education subsidies are part of an optimal policy package even if the government can commit to announced policies.

Although the able bodies benefit more than proportionately from education subsidies Bovenberg and Jacobs (2003) show that education subsidies play an important role in alleviating the tax distortions in human capital accumulation induced by redistributive policies (Bovenberg and Jacobs, 2003). This explains why OECD countries subsidized higher education more heavily if the income tax is more progressive. Bovenberg and Jacobs (2003) derived optimal income tax in the absence of education policies to show that optimal marginal income taxes are reduced below levels that

would be optimal in the absence of endogenous human capital formation. Intuitively, the efficiency costs of redistribution increase, as positive marginal tax rates distort not only labour supply but also human capital accumulation. Second, if the government has education subsidies at its disposal, the distortions of taxes on learning decisions are eliminated so as to restore efficiency in education choices. Indeed, education subsidies provide the government with sufficient instruments to restore efficiency in the production of human capital (Diamond and Mirrlees, 1971). By eliminating the distortions of redistribution on learning, education subsidies make the optimal labour tax more progressive than without education subsidies. Third, if the income tax is not available, the government would want to tax, rather than subsidize education. Hence, the availability of an income tax as a redistribution device justifies education subsidies. Intuitively, the income tax is better targeted at income redistribution because all means is taxed – including the rents from ability – education tax, in contrast, extracts only the returns from human capital formation, which exclude the rents from ability.

4.5 Targeting and Redistribution

Targeting is here defined as a deliberate attempt to shift the benefits of public expenditures to the poor by means which aim to screen them as the direct beneficiaries. The anti-targeting view argues that finely targeted programs have usually failed in either fully covering the poor, or in avoiding leakage to the non poor. They are bad for morale and create dependency. They are not sustainable because they lack political support. The ‘programmes for the poor are poor programmes’ is an often heard criticism. Furthermore, if governments effectively promote economic growth and invest in basic social services for all- through broad targeting of budgetary allocations – then there is no need for more finely targeted programmes, they claim.

Without any attempt at targeting, a development path in which both participation in economic growth and access to basic social services is broad – including both poor and non poor – can be an effective route to improving the living standard of the poor (World Bank, 1990; Lipton and Ravallion, 1994). Yet country experience (both developed and developing) also shows that circumstances often require supplementary, more finely targeted, public action. There are many examples; undernourished children who should not be made to wait for long-term solutions such as education and jobs if we can relieve their suffering now at modest cost or even positive benefit – to long-term welfare. And, even in the best of times, some among the elderly and the

disabled, for instance, will require public assistance in order to meet their most basic needs. Without a concerted targeting effort some disadvantaged groups such as girls, severely disadvantaged in terms of education in rural area may never catch up (Alderman et al., 1995).

Policies which attempt to identify the poor and target benefits to them can serve important redistributive and safety net roles in market economy (World Bank, 1990; Lipton and Ravallion, 1994). The risk is when targeted programs are seen as the main instrument for poverty reduction. While a well designed scheme can provide an important complement to a longer term poverty reduction strategy founded on equitable growth and pro-poor broad targeting of public spending, it is an imperfect substitute. Decisions on targeted schemes must always be made contingent on the general economic and social sector policing environment. Moreover, in each specific case, the choice about whether and how finely to target should be decided on economic grounds, starting from the political value judgment that is the economic value of targeting the poor that matter most. In theory, targeting can lessen the social cost of reducing poverty. However, in practice, the ability of a policy to concentrate benefits on the poor, and its impact on poverty, albeit often confused, are not equivalent. The most perfectly targeted policy may not be the one with the greatest impact on poverty. Whether it is, will depend on how costly it is to identify the poor and target benefits to them, as well as the size of disincentive effects and participation costs incurred as a result of targeting. The benefits from better targeting can be large, but they can never be achieved costless (Atkinson, 1996).

The costs of administering a programme can rise substantially when discrimination between beneficiaries is required. There is a widespread perception that the more finely a scheme attempts to target, the higher the administrative costs will be, largely as a consequence of imperfect information (Atkinson, 1996). For example, a comparison of means tested programs (in which recipients are screened by their level of income) and universal programs (in which access is opened to all) in the U.S found that administrative costs varied from 12% of total costs for the former to 2.5% of the latter (Kesselman, 1982). However, Grosh (1996) disputes this view. Based on her analysis of a large set of targeted and universal programs in Latin America, she concludes that the administrative costs of targeting have tended to be overstated. Indeed, her research suggests that they do not systematically vary in any significant way across the diverse targeting mechanisms examined: The costs of administering indi-

vidual assessment techniques (generally assumed to be the highest) do not appear to vary much from that of less intensive methods such as geographic and self targeting. Grosh (1996) finds that median administrative costs for these respective targeting mechanism amount to between 9.7% and 6% of total programme costs.

In improving targeting as redistributive instrument, Van de Walle and Nead (1995) suggested that governments should invest and reallocate budgets towards basic services. The provision of such services often fails to attract private sector interest and thus accords with the principle that government should be responsible for valuable goods which would otherwise be under-provided. But above all, services such as primary education and basic health care are found to be among the best ways to reach the poor. In many developing economies, it is the middle classes who are currently the primary beneficiaries of public social spending. Many of the poor are left out, while the rich have alternatives-namely, the private sector at home and abroad. Redirecting or 'targeting' spending towards the poor will hurt the middle classes who, in the worst case scenario, may no longer be able to afford the services. Households in this group are often the most vocal and politically important consistency for the government (Nelson, 1992). This political economy reality has considerable bearing on final reform outcomes and is a key issue in targeting.

In the case of Nigeria, the nature of the education subsidy is in the form of government direct financing of education in the form of budgetary allocation and grants. Individual subsidy is minimal. However, there is a general subsidy on petroleum products in Nigeria, although there is a serious push to remove the subsidy of recent. This policy move is imbedded in the deregulation of petroleum sector as being canvassed by the government.

According to Onovo (2010), there are two sides to the debate on deregulation. One side is from the government which says that when deregulation becomes operational huge money spends on subsidy can be channel towards the provision of basic social amenities for the citizenry. The other side of the debate is from the workers who see government's intention as another way of impoverishing the masses. They believe that government can still subsidize petroleum products while developing infrastructures. Workers' representatives believe that if government remove subsidy prices of petroleum products will go up and increase hardship for the masses. While Nigeria is ranked among the top oil producing nations, the country is the only OPEC

nation that meets its oil quota through export. Every year, the federal government pays billions of naira on subsidy which authorities say is a burden on its financial responsibilities. Nigeria discovered oil more than 50 years ago but the citizens are yet to benefit from its dividends as few individuals appropriate surpluses from it. While few milked the success from the oil, the majority of the people are worse off. Compare to other oil producing nations, basic infrastructures such as roads, railway, transportation, health and education in Nigeria continue to receive little attentions even though government commits so much on subsidy. For example, between 2006 and 2008, government said it spent over N1.2 trillion on subsidy. Before the end of this year, it is estimated that government will pay not less than N600 billion on subsidies. And who benefited from this huge sum of money? Definitely not ordinary people, fuel subsidies hardly reach the right people because subsidy has created incentives for smugglers to smuggle to the neighbouring countries. While fuel is scarce in many filling stations across the country, black market of the same product grows. The amount committed on subsidy if appropriated and focuses on the development of infrastructure, about 45,000 km of roads will be built. It is also projected that about 15, 000 megawatts of electricity could be generated too while so much will still be left to construct over 615, 000 blocks of classrooms (Onovo, 2010). The projected N600 billion to be paid on subsidy for 2009, is far more than the amount devoted to critical infrastructure such as power, aviation, works, transport, petroleum resources and infrastructural projects within the Federal Capital Territory. The amount is also over 4 times the budgeted capital expenditure for human capital development in the areas of health, education and MDGs. One interesting thing about the whole exercise of subsidy is that the money paid to marketers by the government is sourced from the country's foreign reserves which are supposed to help stimulate the economy for the rainy days. This makes the continued subsidization of petroleum a risky job for the government.

4.6 Safety Nets, Conditioned Transfer for Education and Redistribution of Education

The MDGs articulated by United Nations in 2000, set a target of halving poverty and malnutrition by 2015. Although it is widely accepted that the renewed economic growth is a necessary condition for meeting these goals, it also is widely accepted that growth alone is insufficient (Haddad et al, 2002, Sahn and Stifel, 2002). Indeed, economic growth in most areas is not resolving the problem. Since, 1990, the

GDP in low and middle income developing countries has been growing by about 3% a year (World Bank, 2001). Yet, except in China, the number of people living in poverty has been rising at the same time. In effect, then, the world has become increasingly divided into a small group of successful countries that are growing rapidly and reducing poverty and a much larger group in which income growth has slowed, inequality is constant or rising, and the number living in poverty is rising (World Development Report, 2001). Persistent poverty and malnutrition result in irreversible costs in both human and economic development. There is a fairly widespread consensus that social safety nets, which alleviate current poverty, play a very important role in the longer-term poverty alleviation process. In fact, for many of the world's poor, public safety net programmes are their only hope of a life free from chronic poverty, malnutrition, and disease.

As a practice, however, these transfer programmes often have shortcomings that undermine their effectiveness. First, the transfers often fail to reach the most vulnerable groups. For example, a review by Coady et al. (2002a) of transfer programmes in developing countries found that as many as one-quarter of the programmes reviewed actually had regressive benefit incidence. Second, transfer programmes are often not very cost effective because so much of poverty alleviation budget is eaten up by unnecessarily large administrative costs. In addition, many programmes are rife with corruption and operational inefficiencies, resulting in theft or other losses that reduce the resources available for distribution to vulnerable households. Third, social safety net programmes are often made up of a myriad of uncoordinated components, which, to be more effective, need to be better integrated in pursuit of a common set of objectives. Fourth, social safety nets usually have a short-term focus on alleviating only current poverty and thus generally fail to generate a sustained decrease in poverty independent of the transfers themselves.

In larger part, because of the types of concerns described above, developing countries and donors have recently experimented with and promoted the implementation of a relatively new approach to social safety nets: the Conditional Transfer for Education (CTE). It combines their traditional preventive roles with a development role. The preventive role attempts to address the problem of current poverty, whereas the development role attempts to promote a sustained decrease in poverty by improving the educational status within households (Rawlings and Rubio, 2002). In particular, investing in the educational status of children appears to play a key role in break-

ing the intergenerational transmission of poverty and destitution. This finding reflects the fact that households in extreme poverty tend to be poor not only in terms of income or consumption, but also in terms of their ownership of human capital. In this sense, programmes that invest in the educational status of children are particularly focused on the ‘structurally poor’ (as opposed to the vulnerable) whose poverty persist over time, reflecting their low asset base. By placing conditions on transfers to poor households related to human capital accumulation, these programmes combine social assistance with social development.

Today, some investment programmes seek to eliminate poverty by making people more productive and less poor in the long run. Some safety net programme give people money or goods to increase their income in the short run. CTE programmes do both things at once. The cash transfer raises the income of the poor family just as any other safety net programmes would. But at the same time, the future earnings potentials of the children of poor families is increased by additional years of education they receive. Thus the programmes are win-win combination. They are, in a sense, poverty reducing transfer programme with a side educational benefit, or education programmes with a side poverty-reducing benefit.

Two design features of CTE programmes are especially important in achieving these objectives. First, the programme use a range of targeting methods (e.g. geographic, household proxy means, and community targeting) to ensure that program benefits reach the poorest households. Second, continued eligibility to receive benefits is conditioned on households keeping their children in school. Failure to meet these conditions leads to loss of benefits, usually at first temporarily but eventually permanently.

The design of these programmes thus recognizes not only the fundamental right of individuals to a basic education but also the responsibilities of individuals and households in achieving this end (Coady 2002b). Although many of the programmes are very centralized, that is, they are designed and implemented by the federal (central) government- this feature is not necessary. For example, even the centralized programmes, which essentially by pass state-level governments, are designed so that community-level organizations play a crucial role. For example, in Mexico’s Programa de Educacion, Salud y Alimentacion (Progresa) the ‘community promoter’ is a beneficiary, who is elected by other beneficiaries. She (transfers are always given di-

rectly to mothers) plays the role of liaison officer between the programme officials and beneficiary communities, arranging regular community meetings with beneficiaries, informing beneficiaries of their rights and responsibilities under the programme, and communicating beneficiaries concerns to programme officials. It has become increasingly obvious that community level organizations can play a crucial role not only in ensuring that beneficiaries receive the transfers due them, but also in monitoring the effectiveness of the education services available.

An important attraction of CTE programmes is their focus on improving the human capital outcomes for the poorest households in developing countries. Children in such households are commonly observed to have low school enrolment rates, high dropout rates, and slow progression rates (i.e. the percentage of students progressing to the next grade on schedule is low). Although the precise pattern varies somewhat across developing countries, the end result is the same. Children from the poorest households are further disadvantaged by low educational attainment and future low productivity and incomes. This vicious cycle ensures the transmission and persistence of poverty both within and across generations. It is now widely recognized that an effective development strategy requires investment in human capital, especially in the basic education of the poorest households, and that governments have a crucial role to play in this area (World Development Report, 1997). Investment in the education of children from poor household can generate not only sustained economic growth, but also the right kind of broad based growth. A key resource available to all countries is the human capital potential of its citizen. Yet in many poor countries, too much of this potential is presently being lost because so many students drop out of school early. And this hold true even in many of the middle-income developing countries. In Brazil, for example, no more than 56% of urban and 24% of rural pupils finished primary school (Morley and Coady, 2003). Judging for net enrolment rates, the situation is even worse in other Latin America and South Asian countries. The dropout rates are much higher for students from poor families, and numerous surveys have shown that the main reasons for such high rates are costs, both the direct costs of school and the opportunity costs of earning forgone. Therefore, education subsidies appear to have much potential in addressing these constraints on development.

Education subsidy programme have several other potential benefits as well. First, unlike pure transfer programmes, the gains produced by the increased education of the children of the poor are permanent. Once poor children are educated, they are

less likely to slip back into poverty. In a sense, they have been given the tools to earn their way out of poverty, thus breaking the intergenerational transmission of poverty. Second, there is a good deal of evidence that enrolment rates in families are a positive function of the education of the mother. The implication, then, is that if girls from poor families stay in school longer, they are likely to keep their own children in school longer, even in the absence of subsidies for school attendance. Third, evidence suggest that societies are more willing to give assistance to the poor if it is tied to something like education that is particularly valued by the society. Tying assistance to school attendance would appear to make it politically possible to transfer larger amounts of resources from the rest of the society to the poor than would be the case without such a condition. Efficiency concerns can also motivate the placing of conditions on transfers. Education, especially basic education, is thought to have both sound and economic externalities. Moreover, if the parents exhibit less than perfect altruism toward their children, or credit market work imperfectly or are missing altogether, a cash transfer with conditions attached is likely to lead households to make more efficient educational decisions.

CTE programmes have several other potentially important benefits as well. Programmes that allow children to earn a monetary or food subsidy by staying in school may reduce the incidence of child labour. Ravallion and Wodon (2000) found that in Bangladesh the food for education stipend had a small but significant negative effect on the labour force participation of children and a strong positive effect on the probability of being in school. In Nicaragua, education subsidies led to a substantial increase in school attendance, but mainly from children who did not previously work or attend school (Bourguignon et al., 2002).

5.0 METHODOLOGY

The study used primary and secondary data. The primary data came from National Living Household Survey of 2004 and Core Welfare Indicator Questionnaire of 2006. The secondary data were obtained from Central Bank of Nigeria and Education for All Monitoring Report for 2009. The primary and secondary data were analyzed using descriptive statistics, Concentration Index and Reynold's – Smolensky (RS) Index of Redistribution.

5.1 Concentration Index

A concentration curve is generated by plotting the cumulative distribution of “benefits” of public spending on the y-axis against the cumulative distribution of population sorted by per capita income on the x-axis. One can assess the progressivity or regressivity³ of a public subsidy by comparing the benefit concentration curve with the 45-degree diagonal and the Lorenz curve of income/ consumption. Unlike the Lorenz curve, which shows the cumulative proportion of income earned by the cumulative population, a concentration curve can lie above the diagonal: The poorest 20 percent of the population cannot earn more than 20 percent of income, but they can get more than 20 percent of spending on social services. Concentration curves that lie below the Lorenz curve are classified as relative regressive (relative to Lorenz curve or income distribution), while the concentration curves that lie above the Lorenz curves are classified as relative progressive (relative to Lorenz curve or income distribution). When the concentration curves in addition also lie above the diagonal, the spending is said to be absolute progressive (the poorest 20 percent of the population got more than 20 percent of the spending on social services). When the concentration curves lie below the diagonal but above the Lorenz curve, the spending is said to be absolute regressive (the poorest 20 percent of the population got less than 20 percent of the spending on social services). The concentration index estimates the inequalities in the distribution of government expenditures and is calculated in same way as the Gini coefficient. The only difference is that the concentration index is calculated by keeping the income group the same. The concentration index can lie in range of -1 and 1, while the Gini coefficient lies between 0 and 1. If the concentration index is lower than the Gini coefficient, it shows that expenditures are more evenly distributed than income and vice versa (Hakro and Akram, 2007) (relative progressive). The value -1 indicates complete equality of public expenditure, while 1 indicates concentration of spending on one individual. The targeting accuracy of public spending can be summarized in the concentration index. According to O’ Donnelle et al. (2007), if the concentration index is a negative value, this indicates absolute progressivity (the spending is well targeted at the poor), while a positive value indi-

³ Progressivity implies a preference for lower income groups while regressivity implies a more favourable treatment of higher income groups.

cates absolute regressivity (non pro-poor spending). Then to estimate relative progressivity/regressivity, the value of concentration index is compared with the Gini coefficient. If concentration index is greater than the Gini coefficient, the spending is relative regressive, but If concentration index is less than the Gini coefficient, the spending is relative progressive.

5.2 Reynold's – Smolensky (RS) Index of Redistribution

Redistributive effects may be conceptualized as the equalizing or the disequalizing effect associated with a transition between the pre- to post payment periods. In this sense, a progressive payment system is essentially redistributive. A measure of redistributive effect that has gained a substantial attention in literature is the Reynolds –Smolensky index (Reynolds and Smolensky, 1977). They defined the redistributive effect as:

$$\pi^{RS} = 2 \int_0^1 [L_{XT(p)} - L_{x(p)}] dp = G_X - C_{X-T}.$$

Where π^{RS} = Reynolds – Smolensky redistribution index defined as twice the area between the Lorenz curve for prepayment incomes $L_{x(p)}$ and the concentration curve for post payment income $L_{XT(p)}$. G_X is the prepayment Gini coefficient while C_{X-T} is the post payment concentration index.

The index is positive if the pre-payment Lorenz distribution curve lies below the post payment concentration curve. In this case payment reduces income inequality on prepayment income distribution. If the prepayment Lorenz lies above the post payment concentration curve, then π^{RS} is negative and in this case education-financing system worsens inequality on prepayment distribution.

6.0 RESULTS AND DISCUSSIONS

6.1 Distribution of Primary and Secondary School Enrolment in Nigeria

Table 7 shows that the net national primary school enrolment rate was 61.5 per cent. This is lower than the Sub Sahara Africa average of 70%. The reason for low enrolment can be predicated on cost factors and high poverty level among the people. EFA (2009) has shown that poverty level in Nigeria is negatively correlated with net

school enrolment in the state. Odiya and Omofonmwan (2007) have also reported increased cost of education, particularly school and enrolment fees as deterrent to school enrolment. The fact that lack of capital can reduce the quality and accessibility to education by the children from poor homes has been documented by Onibukun and Kumuyi (1996) and UNDP (1998).

The regional inequality in primary school enrolment is highly pronounced. The South-West (82.3%), South-East (81.6%), South-South (76.8%) and North-Central (72.5%) had rates higher than the national average of 61.5%, while the North East and North West secondary enrolment stood at 43.7% and 42.2% respectively.

The net national secondary school enrolment rate was 45.6 per cent as indicated in Table 7. The regional inequality in primary school enrolment can also be noticed. The South-West (64.9%), South-East (59.7%), South-South (58.7%) and North-Central (46.1%) had rates higher than the national average of 45.6%, while secondary school enrolment in the North East and North West were 25.8% and 25.4% respectively (see Annex Table 1). The socio-economic causes of the regional variation in accessibility to education in Nigeria has been sufficiently explained by Alabi (2008).

The proportion of males aged 6-11 years enrolled in primary school in Nigeria was 63 per cent, higher than that of females (59.8 per cent) as shown in Table 7. Disaggregation of secondary enrolment by sex showed that net secondary enrolment for males was 45.4 per cent and 45.9 per cent for females (see Table 7). As for the regions, the female secondary school enrolments were higher in the South-East and South-South zones than the corresponding figures in other zones. The female secondary net enrolment ranged from 25.4 per cent in the North-West to 64.9 per cent in the South-West when compared with male figures that ranged from 26.7 per cent in North-East to 64.3 per cent in the South-West (see Annex Table 3)⁴. The low participation of female in education opportunities in Africa has been documented by other scholars. Regarding the gender effect, most studies (Gitter and Barham, 2007; Lire, 2005) find that girls are more likely to get less schooling than boys and that parental education has a positive and significant influence on enrolment and level of educational attainment.

⁴ Many of the boys in South East and South South in Nigeria do not go to school, while many of the girls in North East and North West in Nigeria do not go to school. The national average marked these regional differences.

Another source of inequality in education in Nigeria is urban-rural divide. The growth of industries brought about urban and rural settlements in Nigeria. The companies attracted educated men and women as workers in the industries. These workers on their parts struggled to ensure that their children received a good education. This brought about a situation where schools in urban areas were well staffed, equipped and financed, while rural schools experienced poor staffing, furnishing and financing. In some cases, teachers refused transfer to rural areas (Aluede, 1998). This created gaps in schooling in rural and urban areas in Nigeria. Table 7 shows that the net primary school enrolment in rural areas was 56.6%, while the net enrolment in urban area was 74.5%. Secondary enrolment in the rural areas stood at 39.6 per cent as against 59.3% in the urban areas.

However, the disparity in schooling based on location is contrary to the tenet of philosophy of education in Nigeria. According to the Nigerian Education Policy Document Section 1(4), subsection c *'Every Nigerian child shall have right to equal educational opportunities irrespective of any real or imagined disabilities each according to his or her ability'* (National Policy on Education, 2004:7). The Policy states that *'The philosophy of education therefore is based on the provision of equal access to educational opportunities for citizens of the country at the primary, secondary and tertiary levels both inside and outside the formal school system'*. Section 1(7), subsection e also state that *'Universal Basic Education in a variety of forms, depending on needs and possibilities, shall be provided for all citizens'* (National Policy on Education, 2004:9).

Generally, unequal access to education has alarming consequences as summarized in EFA (2009). It states that *'Unequal distribution of education has wider consequences. Income-based gaps in educational opportunities reinforce income inequalities and the social divisions that come with them. These also mean the benefits associated with education in areas such as public health, employment and participation in society are unequally distributed. The human costs of these inequalities are commutative and cross-generational. For example, the fact that women account for the majority of illiterate people in the world today is a reflection of historical gender disparities in access to education, but when women who have been denied an education become mothers, their children also inherit diminished life chances, they are less likely to survive, more likely to experience ill health and less likely to go to school than the children of mothers who have education'* (EFA, 2009:214)

Table 7: Distribution of Primary and Secondary School Enrolments in Nigeria Based on Location and Gender (%)

School	Average	Rural	Urban	Male	Female
Primary	61.5	56.6	74.6	63	59.8
Secondary	45.6	39.6	59.3	45.4	45.9

Source: Computed From CWIQ (2006)

6.2 Distribution of Primary and Secondary School Completion Rates in Nigeria

The primary school completion rate is defined as the ratio of the number of persons who completed primary school in the year before the survey to the number of children of primary school age (6-11 years). In Table 8, the primary school completion rate at the national level was 12.1 per cent. A break-down of the result shows 10.6 per cent completion rate in the rural and 16.3 per cent in the urban primary schools. Completion rate was higher in secondary (20.1 per cent) when compared with primary (12.0 per cent) schools. The level of secondary school completion was much lower in the rural (13.6 per cent) than urban (34.7 per cent) areas. The South-East zone had the highest primary school completion rate of 23.2 per cent, followed by the South-West (18.7 per cent), while the least rate (5.8 per cent) was recorded for the North-West. South-West zone recorded the highest secondary school completion rate of 39.6 per cent, while the South-East (27.8 per cent) and South-South (25.4 per cent) also had rates a little above the national average (see Annex Table 1). Generally, the completion rates in primary and secondary school were very low. Implication of low completion rates on education system can be better appreciated if we compare the net enrolment with the completion. The net enrolment were about 62% and 46% in primary and secondary school respectively, while their corresponding completion rates were about 12% and 20% respectively. This is an indication of poor performance, not only of the students but also that of education system generally. The low completion rate can be associated with high rate of dropout from schools. This dropout is particularly high in Nigeria and is common to the children from poor households. Annex Table 4 revealed that poverty is major cause of school drop-out in Nigeria. Annex Table 5 supports the idea that majority of the children from poor house-

holds did not complete their education. Annex Table 5 indicates that children from poorest households aged 17-22 (secondary school age) had only about 4 years of schooling, while the children from the richest households had about 10 years of schooling. Annex Table 6 also established the fact that majority of the children that are not in primary school in Nigeria are from poorest households. Annex Table 6 shows that only 5% of the children that are not attending primary school are from richest households, while 37% of the children that are not attending primary school in Nigeria are from poorest households. Lack of finance (poverty) can cause disruption in schooling as a result of two principal reasons, namely, inability of the parent to bear the high cost of education and the withdrawal of their children or wards from school to assist the parent on the farms or in their enterprises. Osiruemu (2007) demonstrated that many parents in Nigeria are poor and are not able to pay for the education of their children which forced many of the children to street trading.

Rural- urban disparity noticed in primary and secondary completion rates in Nigeria has also attracted attention of other scholars. For example, Sahn and Stifel (2004) point out that the extent of educational inequality (rural and urban) is significantly greater and that attainment levels are significantly lower in rural areas than in urban areas. Lloyd and Hewett (2004) find that African countries have the lowest primary school completion rates of any region in the world. Regarding the levels of primary school completion they argue that *“the poor are the least likely to send their children to school and their children, when enrolled, are most likely to perform poorly and drop out”* (Lloyd and Hewett 2004:14).

Table 8: Distribution of Primary and Secondary School Completion Rates in Nigeria Based on Location (%)

School	Average	Rural	Urban
Primary	12.1	10.6	16.3
Secondary	20.1	13.6	34.7

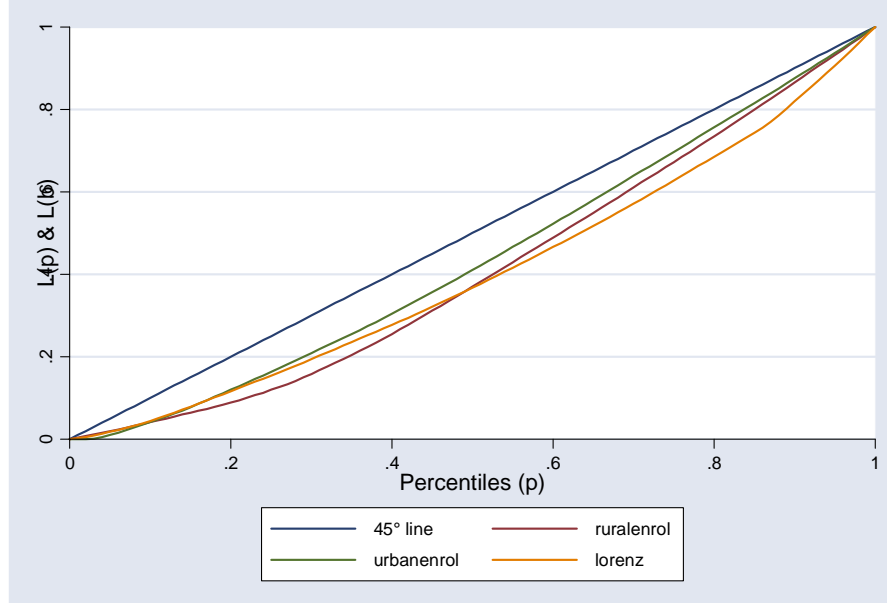
Source: Computed From CWIQ, 2006

6.3 Concentration of Primary and Secondary School Enrolment based on Location

Figure 1 and figure 2 paint the picture of the concentration of primary and secondary school enrolment in rural and urban areas in Nigeria. In the two figures, the concentration curves of school enrolment in urban areas lies above that of the concentration curves of school enrolment in rural areas. This implies that school enrolment in rural areas is concentrated among the few rich in the area. This also suggests that education spending in urban areas is less regressive than in the rural areas. However, because the concentration curves of enrolment in rural and urban areas intercept, the concentration indices can be used to make the final judgment on the distribution of enrolment.

Figure 1: Progressivity of Primary School Enrolment in Urban and Rural Areas in Nigeria

Lorenz and Concentration Curves for Primary School Enrolment in Rural and Urban Areas

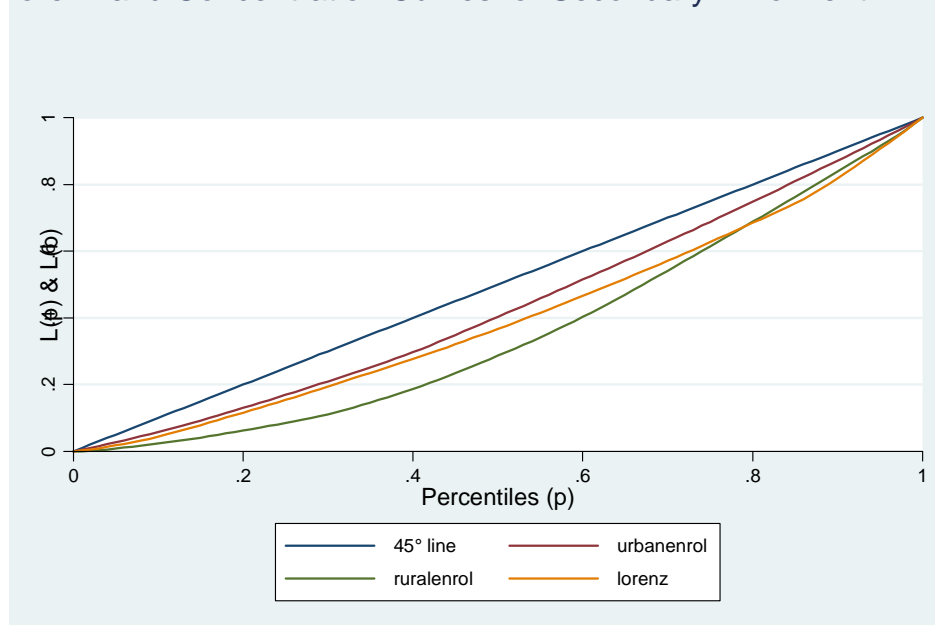


$L(p)$ = Cumulative percent of income, $L(b)$ = Cumulative percent of School Enrolment.

Source: Computed from NBS (2004)

Figure 2: Progressivity of Secondary Enrolment in Urban and Rural Areas in Nigeria

Lorenz and Concentration Curves for Secondary Enrolment in Rural and Urban Areas



$L(p)$ = Cumulative percent of income, $L(b)$ = Cumulative percent of School Enrolment.

Source: Computed from NBS (2004)

Table 9 presents the concentration indices for primary and secondary enrolment in rural and urban areas of Nigeria. Since all the concentration indices are positive, it indicates that the education spending in Nigeria is regressive in absolute terms (non-pro-poor)⁵. However, the regressivity of spending is higher in rural areas than in the urban areas. The concentration indices for primary and secondary school enrolment in rural areas are 0.559 and 0.655 respectively, while the same figure for the urban areas are 0.507 and 0.509 respectively⁶. This confirms that the poor in the rural areas are worse off in terms of educational opportunities distribution in Nigeria. Table

⁵ Shahin (1999) estimated -0.14, 0.12 and 0.39 as concentration indices for lower primary, middle secondary and tertiary education in developing countries respectively, while Demery (2003) estimated -0.078 and 0.223 as concentration indices for lower primary school and tertiary education in South Africa.

⁶ The higher the concentrations index the higher the regressivity. It should be noted that the National Primary School Enrolment concentration index (0.536) is less than the Gini coefficient (0.580), implying progressivity in relative terms.

10 clearly reinforces this. The table indicates that to be poor in Nigeria is not only bad in terms of educational opportunities but even worse when the poor is located in the rural areas. While about 64%, 45%, 15% and 17% of the children from the poor households in urban areas enrolled in primary and secondary, completed primary and secondary school respectively, the same figures for the children from the poor households in rural areas were about 50%, 29%, 9 and 6% respectively. The disparity between rural and urban schooling has also been established by Morley and Coady, (2003). They indicated that school drop-out rates are so much higher among rural households than among the urban households in developing countries. Abebaw et al. (2007) demonstrated that the major demand side factors determining schooling progress in rural Ethiopia include poverty, parental education, land and non-land asset ownership, village fixed effects and a child's demographic characteristics. On the supply side, differences in (accessibility) availability of primary and junior schools in the village significantly explain variation in children's primary education achievement. Previously published other studies (Gitter and Barham, 2007; Lire, 2005) have also found several explanations for the inadequate schooling and educational attainments of children particularly in developing countries of Africa, Asia, and Latin America. A common thread running through these studies is that child schooling experience in rural areas is related negatively with household poverty, and child age.

The fact that clearly emerges out of Table 10 is that inequalities in educational opportunity in Nigeria cannot solely be attributed to income, and other factors such as location count. The fact that income based disparities intersect with wider inequalities in terms of education opportunities has attracted the global attention. According to EFA (2009) rural children in many developing countries are less likely to attend school and more likely to dropout. EFA (2009) reveals that in Senegal, children in urban areas are twice as likely as those in rural areas to be in school and that slum dwellers face a distinctive set of challenges, with high levels of poverty, ill health and limited provision restricting access. EFA (2009) reports that social culture inequalities linked to ethnicity and language are also important. Disadvantages in each of these areas is related to, and compounded by, poverty and income-based inequalities.

Table 9: Concentration Indices of Primary and Secondary School Enrolment in Nigeria as based on Location

Concentration Index	Estimates
National Primary School Enrolment	0.536
Primary School Enrolment Rural	0.559
Primary School Enrolment Urban	0.507
National Secondary School Enrolment	0.597
Secondary School Enrolment Rural	0.655
Secondary School Enrolment Urban	0.509
Gini Coefficient	0.580

Source: Computed From CWIQ (2006)

Table 10: Primary and Secondary School Enrolment among the Rural and the Urban Poor in Nigeria

	Rural Poor (%)	Urban Poor (%)	National Average (%)
Primary School Enrolment	49.9	64.3	61.5
Secondary School Enrolment	29.4	44.8	45.6
Primary School Completion	8.8	15.2	12.1
Secondary School Completion	6.2	17	20.1

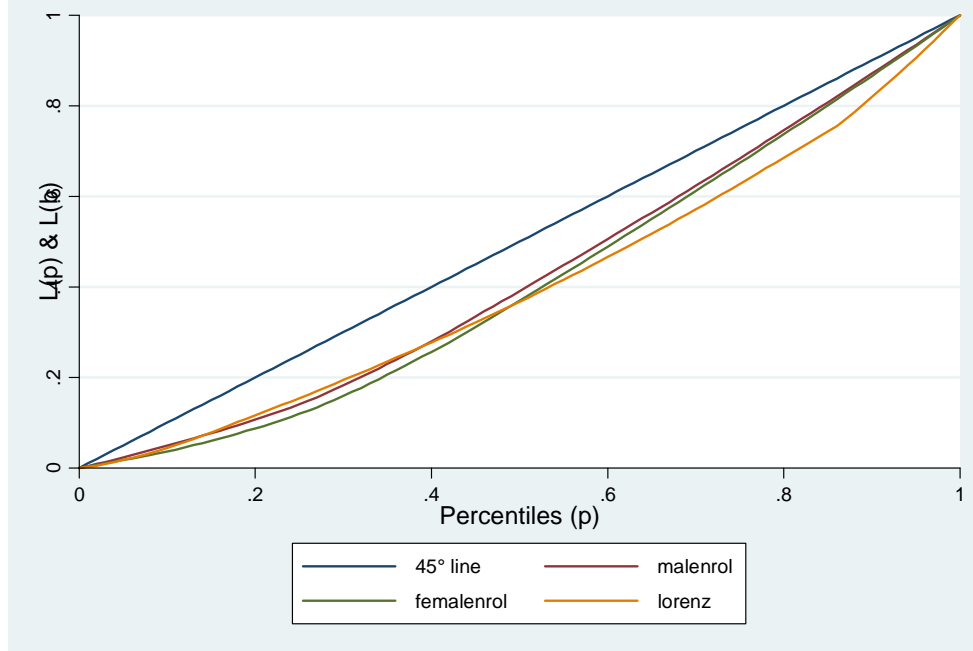
Source: Computed From CWIQ (2006)

6.4 Concentration of Primary and Secondary School Enrolment based on Gender

The distribution of school enrolment in primary and secondary school based on gender indicates that school enrolment is more evenly distributed among male than female as indicated in Figures 3 and 4, as the concentration curves of male enrolment lie above that of female enrolment. This implies that male from poor household has chance of enrol in primary and secondary school than female from poor household. However, since the concentration curves for male and female enrolment crosses, the best judgment can be made using concentration index as presented in Table 11. The Table shows that the concentration index for primary enrolment for primary school are 0.520 and 0.559 for male and female respectively, suggesting that the distribution of male enrolment in primary school is more even than the distribution of female enrolment in primary school. However, since the indices are less than the Gini coefficient of 0.580, the distribution is relatively progressive, being positive implies regressivity in absolute term. The table also shows that the concentration indices of enrolment in secondary school are 0.582 and 0.640 for male and female respectively. These indices are greater than the Gini coefficient of 0.582, implying that the enrolment of male and female in secondary school are regressive in relative and absolute terms (non-targeting of the poor). Moreover, since concentration index of female enrolment (0.640) is greater than male enrolment (0.582), the distribution of male enrolment is more regressive than that of the male. This reveals that the girls from poor households are limited in many fronts in having education opportunities. This fact has attracted the attentions of other education economists. For example, Gitter and Barham (2007) find that girls are more likely to get less schooling than boys, especially if these girls are from poor parents.

Figure 3: Progressivity of Primary School Enrolment by Gender in Nigeria

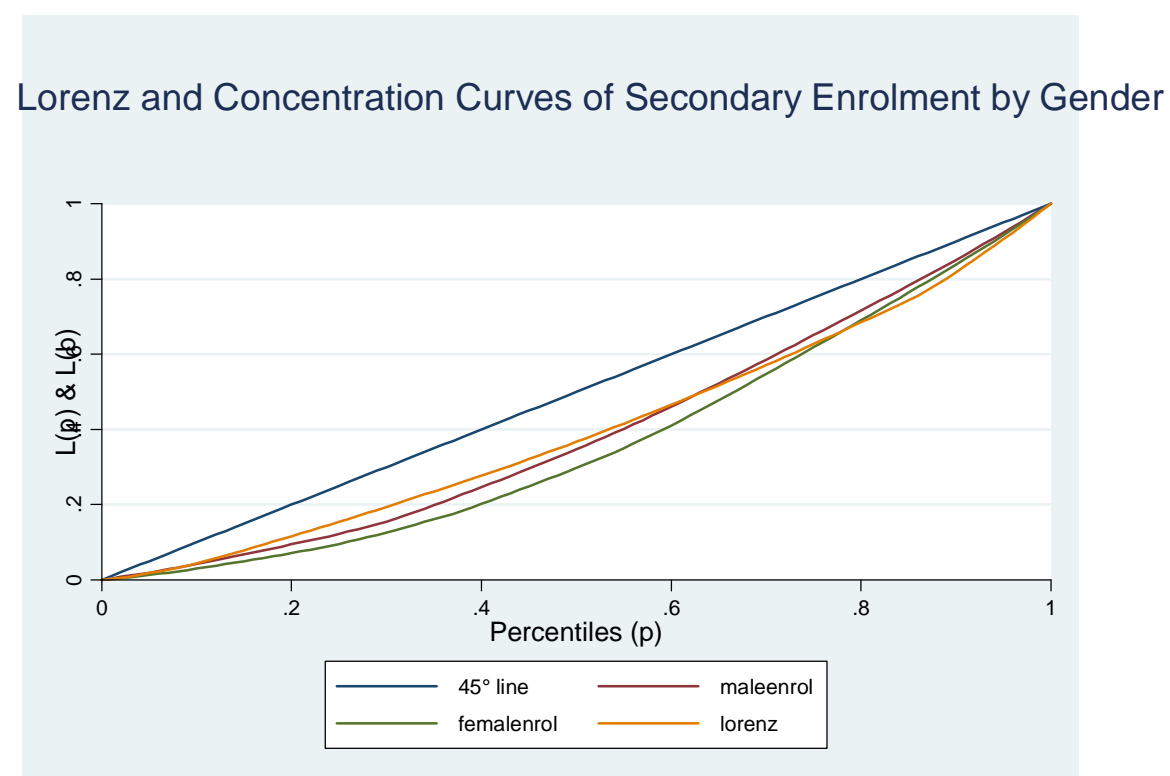
Lorenz and Concentration Curves for Primary School Male and Female Enrolment



$L(p)$ = Cumulative percent of income, $L(b)$ = Cumulative percent of School Enrolment. Source:

Computed from NBS (2004)

Figure 4: Progressivity of Secondary Enrolment by Gender in Nigeria



$L(p)$ = Cumulative percent of income, $L(b)$ = Cumulative percent of School Enrolment.

Source: Computed from NBS (2004)

Table 11: Concentration Indices for Primary and Secondary School Enrolment in Nigeria

Concentration Index	Estimates
Primary School Enrolment for Male	0.520
Primary School Enrolment for Female	0.559
Secondary School Enrolment for Male	0.582
Secondary School Enrolment for Female	0.640
Gini Coefficient	0.580

Source: Computed From CWIQ (2006)

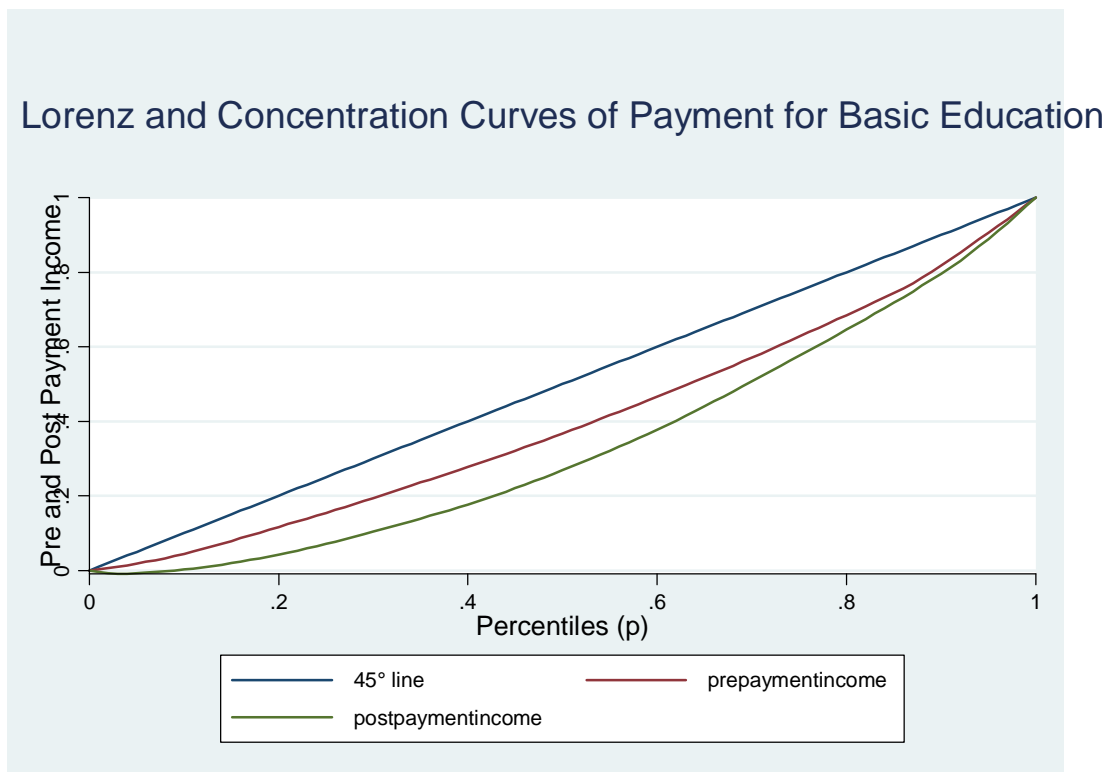
6.5 Redistributive Effects of Education Spending in Nigeria

The idea of the redistributive effects of education spending in Nigeria is painted in Figure 5. The Lorenz of prepayment income lies above the concentration curve of post payment income, indicating that after the people paid for the education of their children they become worse off than before the payment (the payment worsened income inequality). The fact that Lorenz of prepayment income lies above the concentration curve of post payment income is supported by the fact that the Reynold's – Smolensky Index of Redistribution (π^{RS}) estimated in Table 12 is negative (-0.12). According to Kakwani (1977), if the prepayment Lorenz lies above the post payment concentration curve, then π^{RS} is negative and in this case education-financing system worsens inequality on prepayment distribution.

The finding in Table 12 suggests that education funding in Nigeria cannot redistribute income in Nigeria. According to EFA (2009), public spending on education has the potential to redress inequalities but often reinforces them; wealthier regions and advantaged groups often attract more financing than poorer regions and disadvantaged groups. EFA (2009) reveals that public spending is often not pro-poor.

The negative redistributive effect of education spending estimated in this study indicates that if status quo is maintained in education financing in Nigeria, income inequality may be worsening over time. This worsening income inequality in Nigeria over time has been noticed in Nigeria. Oyekale et al. (2006) have indicated that income inequality in Nigeria increased from 0.46 in 1998 to 0.58 in 2004. Redistributive education funding in Nigeria has potential not only to reduce educational opportunities inequality but it also has potential to reduce income inequality, poverty and promote growth. According to Kakwani (2001), an increase in inequality neutralises the growth benefits to the poor. Also, the World Bank study on pro-poor growth in 14 countries in the 1990s admits that low initial inequality accompanied by broad-based economic growth was critical for poverty reduction (World Bank, 2005). Going by Bourguignon (2004) argument, poverty cannot decrease in Nigeria with worsened income inequality position. Bourguignon (2004) isolates changes in inequality during a growth spell and shows how the poor benefit from a given level of growth. He finds that in a high inequality country, a drop in inequality (causing the *Gini coefficient* to fall from 0.55 to 0.45) would cause poverty to drop by more than 15 percentage points in 10 years.

Figure 5: Income Redistributive Effect of Payment for Primary and Secondary Education in Nigeria



Source: Computed from NBS (2004)

Table 12: Reynold's – Smolensky (RS) Index of Redistribution

Index	Estimate
Gini Of Pre-Payment Income (G_x)	0.580
Concentration Index of Post-Payment Income ($C_{x-T.}$)	0.700
Reynold's – Smolensky (RS) Index of Redistribution ($G_x - C_{x-T.}$)	-0.12

Computed From CWIQ (2006)

7.0 CONCLUSIONS AND POLICY RECOMMENDATIONS

This study establishes the low levels of and the regional, gender and location biases in school enrolment and completion rates in primary and secondary schools in Nigeria. However, the study indicates that all these forms of disparities in primary and secondary schooling is contrary to the tenet of philosophy of education in Nigeria. Education policy in Nigeria intends to ensure that every Nigerian child has right to equal educational opportunities and be provided for all citizens. Moreover, less equitable education can have an equal and opposite effect. Evidence from the world points towards inequality in education as a cause of wider income inequalities. For example, over the past three decades, growing wage differentials between secondary school graduates and secondary school dropouts has been a major source of rising inequality and serial polarization in the United States (Heckman, et al. 2006).

The Reynold's – Smolensky Index of Redistribution estimated to be -0.12 indicates that the education-financing system worsens the income inequality in Nigeria. One obvious danger is that, in the absence of redistributive transfers from the rich to the poor, from urban to rural areas, the current education financing in Nigeria will widen the gaps in income and in access to education, with damaging consequences for equity. It is on this basis that the following policy recommendations can be made:

- Nigerian government may need to integrate education planning into wider poverty strategies. This could be done by introducing transfer for education in

its poverty alleviation programmes. This Conditioned transfer for Education (CTE) can target the poor in rural areas of Nigeria. By placing conditions on transfers to poor households related to human capital accumulation, the CTE combines social assistance with social development. The continued eligibility to receive benefits from CTE is conditioned on households keeping their children in school⁷. According to Lipton and Ravallion (1994), such a policy which attempt to identify the poor and to target benefits to them can serve important redistributive and safety net roles in market economy. The CTE can be particularly relevant in North Western Nigeria with lowest school enrolment. This is an important area where NAPEP (National Poverty Eradication Programme) can play a greater role in this arrangement. In this arrangement, the condition for benefiting from this poverty alleviation organ of the government must be enrolment of the children of the beneficiary in the schools.

- The CTE may increase net enrolment in the schools as it has happened in some Latin American countries, which may necessitate the introduction of double shifts. Splitting shifts can make it possible to accommodate the large, rapid enrolment as done in Tanzania (HakiElimu, 2005).
- The Policy of free tuition for Universal Basic Education in Nigeria should be made effective by abolishing payment of formal and informal charges in primary and secondary school in Nigeria as done in some Sub Saharan African countries.
- There may be need to scale up scholarship for girls and disabled children at primary and secondary level as done in Nepal (World Bank, 2007d). This is an important area of intervention for Education Trust Fund (ETF). The fund should be restructured to provide sufficient support for area states that needed help. The restricting should also be done in such a way to provide scholarship for children that need them most.
- There may be need to harmonize aid support to education in Nigeria. Annex Tables 8 and 9 indicates that a lot of educational financial aid flows to Nigeria. However, because this use is not harmonized the effect is limited on education of the poor. It should be directed more to provide infrastructures for schools in the rural areas as done in Nepal.

⁷ None of the poverty transfers in Nigeria is conditioned on education.

- The policy of Public-Private Partnership of the Obasanjo government should be rigorously pursued. In the partnership arrangement, the private organizations are expected to take care (provide financial support) of the primary schools located close to their firms. This serves as community and social responsibility. The Government should promote a child-friendly school climate i.e. effective learning, healthy and protective of children and encouraging the involvement of parents and the communities.
- There should be policy consistency in education sector in Nigeria. A situation where a new minister comes with a new policy and education initiatives may not augur well for the education sector. So, rather than change the policy as new ministers were wont to do, the new education minister should concentrate on harmonising the various policies that the nation had experimented with in the past with a view to saving quality time in moving the sector forward. There is need to review and update the Universal Basic Education Act to enforce the provisions that stipulate compulsory enrolment and retention of children in schools.

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ANNEXES

Annex Table 1: Enrolment and Completion Rates in Primary and Secondary Schools in Nigeria on a Regional Basis (%)

	NorthEast	NorthWest	NorthCentral	South East	SouthWest	SouthSouth
Primary Enrolment	43.7	42.2	72.5	81.6	82.3	76.8
Secondary Enrolment	25.8	25.4	46.1	59.7	64.9	58.7
Primary Completion	6.3	5.8	12.8	23.2	18.7	17.5
Secondary Completion	7.0	7.4	15.7	27.8	39.6	25.4

Source: Computed From CWIQ (2006)

Annex Table 2: Teaching Staff and Pupil/Teacher Ratios in Primary and Secondary Education, 1999 and 2006

	Primary school				Secondary school			
	Teaching staff		Pupil/teacher ratio		Teaching staff		Pupil/teacher ratio	
	1999 (000)	2006 (000)	1999	2006	1999 (000)	2006 (000)	1999	2006
World	25795	27192	25	25	24180	28906	18	18
Developing Countries	20466	21811	27	28	15109	19637	21	20
Developed countries	4485	4633	16	14	6286	6595	13	13
SSA	2004	2581	41	45	872	1238	24	27
Nigeria			41	37				

Source: Computed From EFA (2009)

Annex Table 3: Primary and Secondary Enrolment Based on Gender and Region in Nigeria

	NorthEast	NorthWest	NorthCentral	SouthEast	SoutWest	SouthSouth
Male Primary	45.7	45.3	72.9	83.1	83.4	77.5
Female Primary	41.5	38.6	72.1	80.0	81.2	76.1
Male Secondary	26.7	27.5	47.9	58.0	65.4	56.8
Female	24.7	22.7	43.8	61.4	64.3	60.9

Source: Computed From CWIQ (2006)

Annex Table 4: Reasons for School Drop-out from Primary and Secondary Schools in Nigeria

	Reasons	%
1.	Poverty	36.37
2.	Health	27.27
3.	Failed Examination	18.18
4.	Lack of Interest	18.18
5.	Pregnancy/Marriage	0.00
6.	Dismissal	0.00
7.	Other Reasons	0.00
	Total	100.00

Source: Computed from NBS (2004)

Annex Table 5: Average Years of Education for Poorest and Richest 20% of 17-22 Year-olds for Selected Countries

Country	Poorest 20%	Richest 20%	Difference
Bangladesh	3.7	8.1	4.4
Burkina Faso	0.8	5.6	4.8
Ethiopia	1.6	7.4	5.8
Ghana	3.2	9.2	6.0
Guatemala	1.9	8.3	6.4
India	4.4	11.1	6.7
Mali	0.4	4.8	4.4
Mozambique	1.9	5.0	3.1
Nicaragua	2.5	9.2	6.7
Nigeria	3.9	9.9	6.0
Peru	6.5	11.1	4.6
Philippines	6.3	11.0	4.7
U. R. of Tanzania	3.9	8.1	4.2
Zambia	4.0	9.0	5.0

Sources: Harttgen et al. (2008)

Annex Table 6: Distribution Across Wealth Quintiles of Children not attending Primary School in 2004/2005

Country	Q1 Poorest	Q2	Q3	Q4	Q5 Richest
Malawi	28	23	21	20	8
India	40	25	17	11	7

U.R. Tanzania	28	22	23	17	10
Cambodia	35	26	20	13	6
Nigeria	37	27	20	10	5
Zambia	30	24	19	18	8
Benin	31	29	21	13	6
Mozambique	30	29	24	12	5
Senegal	30	24	22	14	9
Ghana	33	27	19	13	8
Guinea	27	27	24	17	6
Cote d 'Ivoire	30	23	22	17	8
Niger	28	26	19	16	5
Chad	30	26	24	15	9
Mali	25	23	22	21	8
Ethiopia	27	26	25	18	4
Burkina Faso	25	25	25	19	7
Kenya	53	25	10	6	5
Uganda	47	20	16	14	4
Cameroon	42	27	21	7	3
Namibia	36	23	21	12	7
Madagascar	45	29	19	6	3
Rwanda	27	22	22	19	10

Source: Harttgen et al. (2008)

Annex Table 7: Education Expenditure Components in Urban and Rural Areas of Nigeria (%)

S. No.	Items	Urban	Rural
1.	School fees	28.8	38.0
2.	Contributions to Teacher's association	5.2	3.6
3.	Uniforms	2.3	8.3
4.	Books	21.4	25.2
5.	Transport	10.4	6.3
6.	Accommodation	14.3	10.5
7.	Extra activities	14.3	6.7
8.	Other	3.3	1.5

Source: Computed From NBS (2004)

Annex Table 8: ODA Aid flows to the World, Sub Saharan Africa (SSA) and Nigeria, 2006

	World	SSA	Nigeria
Total ODA (constant 2006 US \$ millions)	121566	37772	8509
Per Capita ODA (constant 2006 US \$ millions)	22	51	59
Sector-allocable ODA (constant 2006 US \$ millions)	79296	19635	1171
Debt relief and other actions relating to debt (constant 2006 US \$ millions)	17072	10821	7330

Source: Computed From EFA (2009)

Annex Table 9: Foreign Aid to Basic Education in Nigeria in Global Perspective, 2006

	World	SSA	Nigeria
Total aid to education (constant 2006 US \$ millions)	11289	3811	80
Total aid to Basic education (constant 2006 US \$ millions)	5063	2070	18
Total aid to Basic education per primary school child (constant 2006 (US \$ millions)	9	17	1
Direct aid to education (constant 2006 US \$ millions)	10190	3051	80
Direct aid to Basic education (constant 2006 US \$ millions)	3376	1205	10

Source: Computed From EFA (2009)

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