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RONALD LEE AND ANDREW MASON

# Population Aging and the Generational Economy

A Global Perspective



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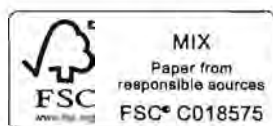
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## 25. The structure of generational public transfer flows in Nigeria

**Adedoyin Soyibo, Olanrewaju Olaniyan, and Akanni O. Lawanson**

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This chapter reports that only children are net receivers of public transfers in Nigeria, mainly in the form of health care and education. Net public transfers are negative for the elderly owing to Nigeria's limited public pension programs and its lack of health care for degenerative diseases. Public cash transfers to all age groups are non-existent, and this has several negative implications for social protection. For children it places a heavy burden on families to provide quality health care and education, while for the elderly it means they must rely on asset-based reallocations and support from their families to make up for their lifecycle deficit.

Nigeria is blessed with many natural resources. It produces 2 million barrels of oil per day and is the sixth largest producer among the Organization of Petroleum Exporting Countries (OPEC). According to the US Energy Information Administration, Nigeria had an estimated 36.2 billion barrels of proven oil reserves as of January 2009 (EIA 2009). The economy's dependence on the performance of oil in the international oil market has led to a series of booms and busts over the years. The oil shocks of the 1980s were so severe that Nigeria, formerly a middle-income country, was reclassified as a low-income country. The situation has not changed since.

Nevertheless, after experiencing negative growth for a substantial part of the 1980s, Nigeria introduced structural adjustment reforms in the late 1980s that led to positive growth in GDP. During that period the military ruled the country. Since the return of civilian rule in 1999, Nigeria's economy has shown strong improvement. Real GDP growth averaged 5.7% between 2000 and 2005 and was driven mostly by non-oil growth (World Bank 2006, p. 1). In fact, the GDP growth of 6.51% in 2005 exceeded the government's forecast of 6% for that year in the country's NEEDS document.<sup>1</sup> The growth rate declined to 5.63% in 2006, mainly as a result of disruptions in oil production (World Bank 2006, p. 1).

Despite positive economic growth in the last decade, poverty is still widespread in Nigeria. According to the National Bureau of Statistics (NBS 2004, p.12), 54.6% of Nigerians live below the poverty line. Although the government has adopted numerous economic policies and programs to ensure continued economic growth and stability, they have not significantly reduced poverty. Economists and demographers have argued that Nigeria's economic and social problems cannot be separated from its rapid population growth and young age structure. Yet there has been little research on this relationship.

Each tier of Nigeria's federal system of government – federal, state, and local – has specific fiscal responsibilities dictated by the country's 1999 Constitution. Moreover, each tier has its own procedure for appropriating funds for public spending. Appropriations depend on the various state houses of assembly, whose policy directions for any particular year may differ. This process has implications for economic management, poverty alleviation, and social protection, as well as for public transfers.

The 2006 national census put the population of Nigeria at 140 million, making it Africa's most populous country (UNDP 2008). Nigeria is in the early stage of demographic transition, and the population is expected to reach 175.7 million by 2015. The total fertility rate, which was 6.8 births per woman between 1970 and 1975, fell to 5.9 in 2000–05. The population is young, with 44.3% under age 15 in 2005, but the relative size of that age group is expected to decline marginally to 41.3% by 2015. The proportion of the population aged 65 years and older is still small, at 2.9% in 2005, and is expected to increase only marginally, to 3.0%, by 2015.

Many studies have made the economic case for public investments in the dependent age groups. For example, Mason et al. (2009) have argued that investments in children's health and education at early ages can have significant multiplier effects. Developing countries face many challenges in making such investments, however. Parents have few resources or are not fully aware of the benefits of formal education and improved health. Accordingly, they may not use those resources optimally for the benefit of their children. Governments therefore have a duty to finance education and health care for children. Most societies also help care for those who have contributed to the general welfare during their productive lives, especially if the elderly can no longer support themselves. Many governments have designed social security programs for those citizens.

In describing the government's social protection role in Nigeria, we focus on the structure of intergenerational public transfers. We examine the mechanisms used by the government to satisfy the consumption needs of the population over the lifecycle through its reallocation of resources from productive to dependent groups. We have applied the National



Transfer Accounts (NTA) methodology to data from the 2004 National Transfer Flows Accounts of Nigeria to analyze the public transfer flows.

The NTA framework defines a transfer as a transaction that transfers a good, service, or cash from an individual belonging to one age group to an individual belonging to another age group with no expectation of compensation or an explicit *quid pro quo* (Mason et al. 2009). These transfers can be made by both the private and the public sectors, but here we focus on public transfers.

In the next section we present a brief profile of the revenue and expenditure system of Nigeria. Then, after describing the methodology and data used for the study, we analyze Nigeria's lifecycle deficit in 2004 and discuss how public transfer flows are used by the government to meet the needs of the dependent population. In the concluding section we discuss the implications of the government's approach.

## **NIGERIA'S PUBLIC REVENUE AND EXPENDITURE SYSTEM**

Most of the revenues to the various tiers of government come from Nigeria's mineral resources. Between 2003 and 2006 tax revenue accounted for less than half of total government revenue (NBS 2008, p. 38). The federal government collects most revenues before sharing them with state and local governments. Besides the federally collected taxes and other revenues, each tier of government has its own internally generated revenues, but they represent less than 10% of all revenues collected.

The National Assembly, comprising the Senate and House of Representatives, determines expenditures for the federal government. In the states the respective state houses of assembly determine the budget, and for local areas the legislative councils have this responsibility. All the tiers of government have allocated large sums of money for economic and social development, yet the results have tended to be extremely disappointing.

### **Education and Health Systems**

Formal education and modern health care were pioneered by Christian missionaries. Since the 1970s the government has assumed most of the responsibility for those services. The social indicators for Nigeria are still below average, however. Only 42% of adults are literate in some language. In 2006 only 76% of primary-school-age children had access to formal schools, and only 55% of the population had access to medical services (NBS 2006, p. 28).

**Education**

Nigeria's education system consists of six years of primary school, three years of junior secondary school, three years of senior secondary school, and four years of tertiary education. The government developed a national policy on education in 1981 and has since revised it several times, most recently in 2007. The policy stresses the importance of achieving universal access to basic education, providing publicly financed secondary and tertiary education to those who want it, achieving universal fluency in English (Nigeria's official national language), and building national capacity in science and technology. Education is the responsibility of all levels of government. The private sector is also involved in its provision at all levels; its schools are subject to registration and recognition by the government.

To increase Nigerians' access to basic education, a program called Universal Basic Education (UBE) was established in 1999, which seeks to make primary and junior secondary education universal, free, and compulsory. In 2004 UBE was approved by the National Assembly and the state houses of assembly. As a result, by 2007 the net enrollment rate in primary schools had risen to 64.4% and the completion rate in the primary schools was 36% (NBS 2007, p. 4).

Federal spending on education fell from 8.7% of the total federal budget in 2000 to 7.9% in 2002 (CBN 2005, p. 165). Between 2004 and 2007, however, federal spending on education grew by more than 158% in nominal values, from ₦79.5 billion (US\$562 million) to ₦205.1 billion (US\$1.44 billion) (CBN 2007, pp. 202–203). The introduction of a UBE Intervention Fund in 2005 and a Virtual Poverty Fund in 2006 contributed to this sharp rise. In 2006 the federal education budget represented 13.2% of the total federal budget. Nevertheless, federal education allocations have not kept pace with GDP growth, declining from 1.8% of GDP in 2001 to 1.4% in 2007.

**Health**

Local governments have major responsibility for primary health care. State governments provide secondary care in hospitals, which also serve as referrals for primary health centers. Tertiary care is provided mostly by the federal government in teaching and specialist hospitals and federal medical centers. Besides the government, many private for-profit and not-for-profit organizations own health institutions.

Households paid 67% of total health costs in 2005 (Soyibo et al. 2009, p. 17). Although the proportion is about the same as in some other African countries, it was far higher than the world average of 18% in 2006 (WHO 2006). The Nigerian government's share of total health

expenditure was 26% in 2005 (Soyibo et al. 2009, p. 17). The balance of 7% was paid by firms and development partners. Although government funding on health care rose between 1998 and 2005, it did so at less than 1% per year.

The federal government established a National Health Insurance Scheme in 2005 to improve access to health care by all Nigerians at affordable cost. The number of participants has grown over the years, especially with the registration of all federal workers and their dependents, numbering 1.5 million by the end of 2006. The program is currently limited to workers in the formal sector, although efforts are under way to include the informal sector through a community-based health insurance program.

## METHODOLOGY AND DATA

We used the NTA methodology described in Chapter 3 and Mason et al. (2009) to focus on governmental transfers as a way of financing the life-cycle deficit. Details of the estimation procedure are provided elsewhere in this volume.

The macrodata used for the estimation of the National Transfer Accounts came from the National Income and Product Accounts (NIPA) of Nigeria (NBS 2007). As the NIPA do not provide information by age group, we used data from the 2004 National Living Standard Survey, conducted by the National Bureau of Statistics, to estimate the age profiles of the relevant variables. The survey is the most comprehensive household survey in Nigeria. It contains information on consumption and expenditure by individuals and households.

For public expenditures and transfers we used information on Nigeria's tax structure. Since the government revenue profile contains all sources of revenue, we reclassified those sources into three categories: direct tax income, indirect tax income, and asset income. Taxes collected by the three tiers of government were added together to derive total government revenue. We thus included all the sources of revenue for all three tiers. To avoid double counting we deducted the federally collected revenues from the revenues of the individual tiers of government and added the internally generated revenues of the tiers on the basis of their classification. The calculated public-sector revenues for all tiers of government are presented in Table 25.1. It reveals that 52% of federal revenue comes from asset income, thus confirming the government's dependence on its oil assets. Direct taxes account for 33%, and indirect taxes for 15%, of total government revenue.

Table 25.1 Government revenues by source: Nigeria, 2004  
(all tiers of government)

Source	Amount (N million)
<i>Direct taxes</i>	956.05
Firms' income tax	113.00
Individual income tax	134.20
Education tax	17.10
Property tax (tenement rates)	4.85
Petroleum profit tax (PPT)	686.90
<i>Indirect taxes</i>	417.10
Custom and excise	217.20
Value-added tax	159.50
Customs levies	40.40
<i>Asset income</i>	1,481.15
Crude oil/gas export	1,043.50
Domestic crude sales	358.20
Other oil revenue	3.00
Independent non-tax revenue of federal government	58.90
State government non-tax	17.55
<i>All revenues</i>	2,854.30

Source: Computed from CBN (2008, tables B1.1, 2.1, and 3.1).

## LIFECYCLE DEFICIT AND PUBLIC TRANSFER FLOWS

The age profiles of lifecycle consumption and labor income for Nigeria in 2004, presented in Figure 25.1, reflect the young age structure of the population: dependent children and youths have a much greater lifecycle deficit than the elderly. The 30-year lifecycle surplus starts at age 33 and ends at age 63. Within the surplus age group the surplus is greatest at age 46.

### Public Transfers

The government serves as a key agent in reallocating resources from the surplus age group to the deficit age groups. Working individuals make public transfers, called outflows, to the government in the form of taxes and receive in-kind transfers and other general-purpose transfers (inflows). Public transfer inflows are the activities and associated spending of the public sector on services that are of direct and indirect benefit

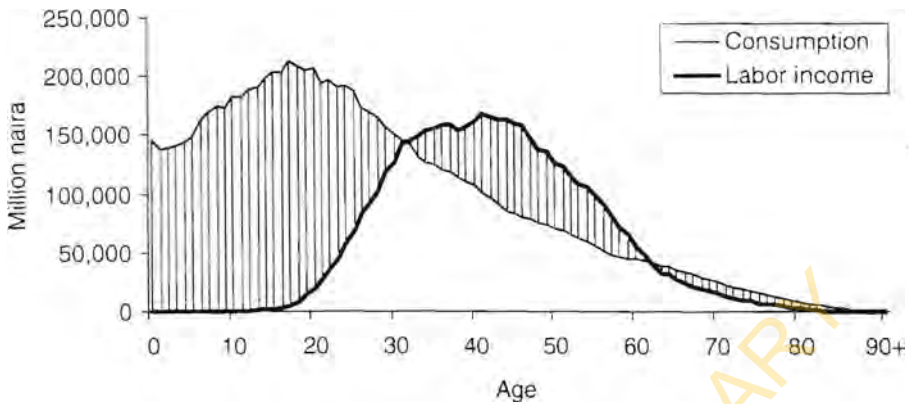


Figure 25.1 Age profiles of consumption and labor income: Nigeria, 2004

to the population. Some of the benefits, such as education and pensions, accrue to certain ages, whereas others, such as security and public infrastructure, accrue to the entire population. We focus here on two in-kind public transfers to individuals – education and health care – as well as on general-purpose transfers. We do so because of the importance of education and health care as investments in human capital. We have not dealt with transfers to older people because there was no public pension for the elderly in 2004.<sup>2</sup>

### Public transfer inflows

For all age groups, in-kind transfers for education and health combined represented about 16% of public transfer inflows in 2004. There were no cash transfers by the public sector, either to the young or to the elderly, in that year.

Furthermore, the results as shown by the age profiles of public transfer inflows show that, general transfers aside, in-kind transfers of education dominated for ages 8–28, and that in-kind transfers of health provisions dominated for the other age groups. Total in-kind public transfers were tilted toward ages 20–24. As we have shown elsewhere (Soyibo et al. 2008, p. 16), the proportion of in-kind public transfers to ages 30–49 was less than 5% of the mean values of labor income for that age group. Thus public transfers beneficial to investment in the human capital of younger generations seem to have low priority in Nigeria.

Table 25.2, which presents the public transfer inflows in NTA aggregate percentages by broad age group in 2004, indicates that 8.8% and 7.3% of all public transfer inflows were spent on education and health, respectively. The remaining 83.9% was spent on other forms of consumption. Most of the inflows on education were spent on children and youth 25

Table 25.2 Percentage distribution of public transfer inflows, NTA aggregate totals by age group: Nigeria, 2004

Inflow	0–17	18–25	26–55	56–69	70+	All age groups
Education	9.2	21.1	3.1	0.0	0.0	8.8
Health	5.2	6.7	10.5	12.8	14.0	7.3
Other	85.6	72.2	86.4	87.2	86.0	83.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

years old and younger. For example, among the 18–25 age group, 21.1% of public transfer inflows were in the form of education. In contrast, health inflows increased with age: whereas only 5.2% of public inflows to children under age 17 years were for health care, for the oldest age group (70+), 14% of all public inflows were for health consumption.

Nigeria's social security system is minimal. No social cash transfer program existed until a defined-contribution system called the Pension Reform Act was established for the formal sector in 2004. Retirees from the public sector, who represent less than 15% of the elderly, have been incorporated into the new social security system (Olaniyan 2007). The proportion of the federal government's total expenditure on the social sector grew from 12.9% of total expenditures in 2003 to 16.1% in 2007. The absolute amount of fiscal spending on education and health also witnessed increases over the period from 2001 to 2007 (CBN 2007, pp. 202–203). In-kind public transfers for health increased with age, from 5.2% of all public transfer inflows for those under age 17 to 14% for individuals aged 70 and older.

### Public transfer outflows

Public transfer outflows to the government in Nigeria comprise taxes on income, taxes on capital, and indirect taxes. The results indicate that the personal income tax burden falls mainly on individuals aged 20 and above, peaking at around age 47. Younger individuals are taxed indirectly because the goods they consume have taxes embedded in them. Tax on capital income continues to rise with age until nearly age 80, as older individuals tend to have more property than younger ones, even than those in the prime working ages. But as we have already noted, the elderly (ages 65+) represented only 2.9% of the population in 2005.

Public transfer inflows (cash and in-kind transfers received) are equal by definition to public transfer outflows. Public transfer outflows can be funded by tax revenues, public asset income, public dissaving, and net transfers to the government from the rest of the world. In Nigeria's

Table 25.3 Structure of public flow account by broad age group: Nigeria, 2004 (in thousand naira)

Item	0-17	18-25	26-55	56-69	70+	All ages
Net public transfers	221,920	42,824	-184,966	-60,572	-19,206	0
Public in-kind transfer inflows	390,378	136,665	211,145	34,964	12,665	785,819
Education	31,719	28,732	8,824	0	0	69,276
Health	19,932	9,071	21,987	4,419	1,757	57,168
Other	338,726	98,861	180,332	30,545	10,907	659,374
Public transfer outflows	168,458	93,841	396,111	95,536	31,871	785,819
Personal income tax	293	5,292	79,357	12,082	1,796	98,821
Corporate income tax	24	1,858	51,573	26,767	10,402	90,624
Net indirect tax	78,584	43,001	97,118	17,046	6,398	242,150
Transfer surplus (+)/deficit (-)	51,055	32,452	147,564	36,168	12,034	279,275
Duties on exports	38,501	11,237	20,497	3,471	1,239	74,947

case in 2004, tax revenues were much less than public transfer outflows because of the government's heavy reliance on asset income. The Nigerian government relies on public asset-based flows to generate resources for its transfer programs. As the sixth largest oil exporter among OPEC nations, Nigeria receives most of its income from oil royalties (shown in Table 25.1). Thus, in addition to the government's income from taxes, transfer outflows are funded by revenues from oil-import earnings. Table 25.3 presents the structure of public transfer flows with all age groups above 25 years having net public transfer outflows.

Figure 25.2 presents the per capita age profiles of public transfers in 2004. Whereas transfer inflows were stable from age 33 onward, the burden of outflows increased from the teenage years and reached its maximum at about age 55.

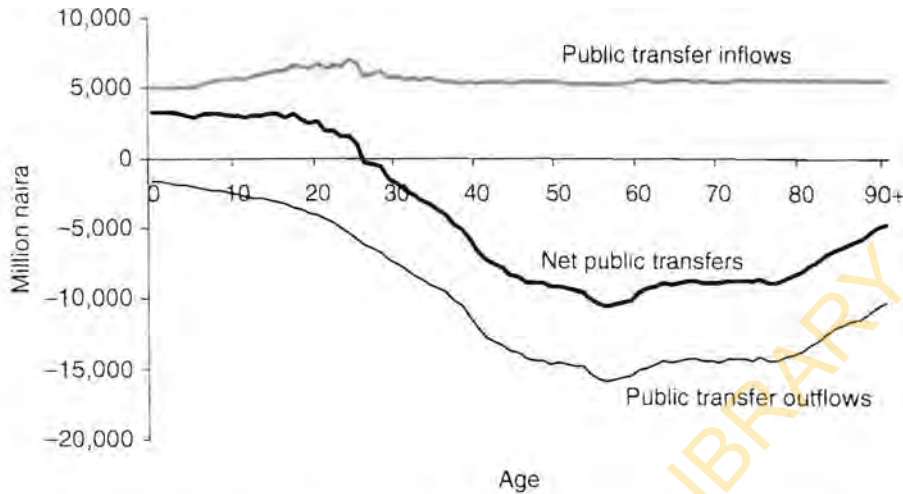


Figure 25.2 *Per capita age profiles of public transfer flows: Nigeria, 2004*

Per capita net public transfers, inflows less outflows, were negative for all adults over the age of 26, including the elderly. The reason is that social protection programs for adults do not exist. Children and young people below age 26 were the only group with positive net public transfers, because they had small outflows and somewhat larger inflows that were almost entirely in-kind. There were essentially no cash transfers to any group, whether children or adults.

Nigeria has no significant scholarships or grants for students. Neither are there cash transfers to vulnerable groups such as the poor, disabled, or elderly. There are no significant cash subsidies for health care either. Although public transfer inflows and outflows should be equal, Nigeria has a public transfer deficit because the government's tax revenues are less than the public transfer flows to the people. A balance is achieved by the flows generated from asset-based reallocations and the payments from foreign sources.

Furthermore, the peak net public transfer flow of about ₦10 000 shown in Figure 25.2 was almost three times the net inflow to children. This pattern reflects Nigeria's young age structure, which is also a peculiar feature of labor income in Nigeria: labor income is low for young adults but remains at a relatively high level in later years, declining only slowly in old age (Mason et al. 2010). Our analysis thus reveals how age structure can work against spending on children. The high proportion of children and young adults in the population, coupled with low labor income for those age groups, helps to explain why public spending and human capital investment are low in Nigeria. The study just cited (Mason et al. 2010, p. 24) estimates that the lifetime normalized human capital investment in



Nigeria in 2004 was 2.0 years' worth of labor income, with only a small portion coming from the public sector. A comparison of human capital spending per child in the economies included in this volume, presented in Mason et al. (2010), shows how low public human capital investment is in Nigeria as compared with other countries.

## CONCLUSION

As in many other low-income countries, public transfers are made mainly to younger cohorts in Nigeria. Our findings indicate that only children are net receivers of public transfers and that the transfers are mainly services in the form of health care and education. Although it is common for the working population to have negative net public transfers, this is also the case for the elderly in Nigeria. This is due largely to Nigeria's limited public pension programs and its lack of health care for degenerative diseases. The elderly must fund their lifecycle deficit from private transfers and asset reallocations.

Net public transfers are positive until age 33 – that is, Nigerians consume more than they produce through their labor for the first 33 years of their lives – whereas net outflows are concentrated in the 50–80 age span. Taxes paid by young Nigerians of working age are low because of high unemployment and underemployment in that group. The underemployment situation is captured by the low level of factor income (labor income and asset income) earned by those in their 20s and early 30s. In addition, the small proportion of elderly in the population and the low incomes of young Nigerians, combined with the tax system's emphasis on asset income from oil royalties and consumption taxes rather than on taxes from labor income, tilt the proportion of public transfer outflows toward the middle-aged and elderly population groups.

The lack of cash transfers to all age groups has several implications for social protection. The lack of scholarships and bursaries to school-age children puts a heavy burden on households trying to provide quality education to their children. The lack of direct cash support from the government for health care, particularly for the poor, also inhibits human capital development. Finally, the lack of cash transfers to the elderly means that the elderly must rely on asset-based reallocations and support from their families to make up for their lifecycle deficits. This is probably why poverty remains high among the elderly. Nigeria needs to learn from other countries on how to improve its social protection.

## ACKNOWLEDGMENTS

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## NOTES

1. The National Economic Empowerment and Development Strategy (NEEDS) document is Nigeria's strategy paper on poverty reduction; see NPC (2004).
2. Although public-sector retirees were paid a gratuity after completing their service, it was not regarded as a transfer because it was part of their total package for being public-sector workers.

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