HARNESSING THE DEMOGRAPHIC DIVIDEND FOR SUSTAINABLE DEVELOPMENT
2016 Demographic Dividend Report of Nigeria

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By

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LIST OF ACRONYMS

AfDB	African Development Bank
ASFR	Age Specific Fertility Rates
AU	African Union
AUC	African Union Commission
CBN	Central Bank of Nigeria
CIT	Corporate Income Tax
CPR	Contraceptive Prevalence Rate
DD	Demographic Dividend
DHS	Demographic and Health Survey
ECA	Economic Commission for Africa
EFA	Education for All
EFCC	Economic and Financial Crimes Commission
ERGP	Economic Recovery and Growth Plan
FCT	Federal Capital Territory
FDI	Foreign Direct Investment
FMoE	Federal Ministry of Education
FMoH	Federal Ministry of Health
FP	Family Planning
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GPI	Gender Parity Index
HDI	Human Development Index
HPTRP	Health Programme Training and Research Programme
HRH	Human Resource for Health
ICPC	Independent Corrupt Practices and Other Related Offences Commission
ICPD	International Conference on Population and Development
ICT	Information and Communication Technologies
IMF	International Monetary Fund
JAMB	Joint Admission and Matriculation Board,
LCD	Lifecycle Deficit
LFS	Labor Force Survey
LGAs	Local Government Areas
MDGs.	Millennium Development Goals

MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Ratio
MSME	Micro Small and Medium Enterprises
MTEF	Medium Term Expenditure Framework
NAFDAC	National Agency for Foods and Drugs Administrative Control
NAP	National Action Plan
NAR	Net Attendance Ratio
NBS	National Bureau of Statistics
NCD	Non-Communicable Diseases
NCE	Nigeria Certificate in Education
NDHS	Nigeria Demographic and Health Survey
NER	Net Enrolment Rate
NHA	National Health Accounts
NHIS	National Health Insurance Scheme
NHRHIS	National Human Resources for Health Information System
NHRHP	National Human Resources for Health Policy
NHRHSP	National Human Resources for Health Strategic Plan
NMR	Neonatal Mortality Rate
NPE	National Policy on Education
NTA	National Transfer Accounts
NTTA	National Time Transfer Accounts
OOPE	Out-of-pocket expenditure
PHC	Primary Health Care
PIT	Personal Income Tax
PPI	Post-Partum Insusceptibility
PPP	Purchasing Power Parity
ROW	Rest of the World
SME	Small and medium scale enterprises
SMOH	State Ministries of Health
SNA	System of National Accounts
SON	Standard Organization of Nigeria
SR	Support Ratio
SSA	Sub-Saharan Africa
SDGs	Sustainable Development Goals
SUBEB	State Universal Basic Education Board

TFR	Total Fertility Rate
TSS	Task Shifting and Task Sharing
UBE	Universal Basic education in Nigeria
UBEC	Universal Basic Education Commission
UHC	Universal Health Coverage
UN	United Nations
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations
USAID	United States Agency for International Development
USD	United States Dollars
VAT	Value Added Tax
WCARO	West and Central Africa Regional Office
WDI	World Development Indicator
WEF	World Economic Forum
WGI	Worldwide Governance Indicators
WHO	World Health Organisation

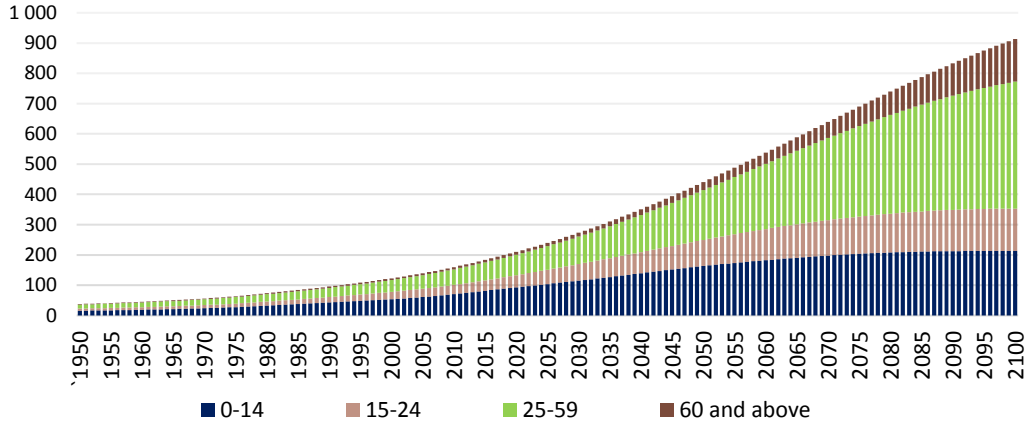
Executive Summary

Introduction

Nigeria is the most populous country in Africa and the 7th most populous country in the world with an estimated population of approximately 182.2 million (UN 2015 World Population Prospect). At the current annual growth rate of 3.2 percent, it is projected that Nigeria will be the 3rd most populous country in the world by 2020 and the population is expected to double by the year 2030. The rapid population growth rate can be attributed to the high total fertility rate (TFR) of 5.8 and low contraceptive prevalence rate of 13.4% (MICS, 2016). Like many African countries, Nigeria is currently in the middle of demographic transition with fertility and mortality beginning to fall. This has enormous implication for the development of the continent because of the changes that it brings into the age structure of the population.

African Union dedicated the year 2017 to "*Harnessing Demographic Dividend through Investments in Youth*" and adopted a Roadmap for its realization. The Union thereafter encouraged each member-country to develop a country specific roadmap for putting in place measures for creating a conducive environment for harnessing Demographic Dividend, to which Nigeria responded promptly by successfully launching its Roadmap in July 2017. Specifically, the Roadmap sought to guide and facilitate the implementation of programmes that will put Nigeria back on the path to reaping demographic dividend within the shortest possible time. With the working population of age 25-59 on the increase over years, along with appropriate policies, there is a greater opportunity for Nigeria to harness demographic Dividend.

Figure 1 Nigeria's Past and projected Population (million)



Source: United Nations Population Division

Methodology

The core method of estimation of demographic dividend in this project is premised on the National Transfer Accounts (NTA) theoretical and basic accounting framework. While issues and estimation of demographic dividend has been approached with different methods, the emergence of the NTA method has depicted some element of reality into the process. The NTA framework is based on intergenerational transfer research whose foundation is usually traced to the pioneering work of Samuelson (1958) and Willis (1988). This framework has been applied to many settings, often under a restrictive set of assumptions. While public and private institutions are recognized as mediator of all economic transaction, the fundamental analytical unit in NTA is the individual. All economic transactions are treated as flows from and to individuals and are classified on the basis of the age of those individual. With consumptions

and productions allocated to single years of age, the influence of age structure on growth becomes the fundamental driver of demographic dividend.

The basis for the computation of the demographic dividends using the NTA approach rests on the consumption and labour income estimates by age group. In the NTA approach, the age profiles of consumption and labour income are calculated for each age in the population to give the age profiles of consumption and labour income. In the period of simulation for the demographic transition and dynamics, the associated economic support ratio is calculated holding the shape of the age profiles of consumption and labour income fixed. The economic support ratio measures the effect of age structure on the capacity of a population to contribute to current production. The economic support ratio is given as the: Ratio of effective producers (i.e. population weighted by a function of labour income) to effective consumers (i.e. population weighted by a function of consumption). This is based on the belief that the age profiles of production and consumption reflect a wide variety of behavioural, institutional, and cultural factors and thus will affect the productivity in different economies. Demographic dividend is thus defined in this study as the growth rate of the economic support ratio.

Labour Income and Consumption

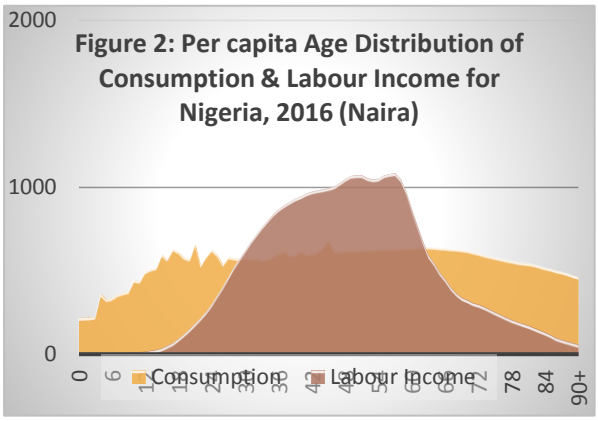
Consumption by an individual within the NTA framework refers to the sum of private and public consumption, each of which is further disaggregated into education, healthcare, and other consumption. While consumption takes place throughout the entire lifecycle of an individual from birth to old age, the pattern of consumption not only differs over different ages, but also varies from society to society in magnitude and composition. The labour income is defined as all compensation to workers, including labour income of employees (earnings), the proportion of entrepreneurial income (self-employment income) that is a return to labour, employer-provided benefits (fringe benefits), and taxes paid to the government by employers on behalf of employees (Lee and Ogawa, 2011). Usually, the labour income is not significantly different from zero at the first decades of life. The reason is not far-fetched as children are not expected to be in the working population at that age range.

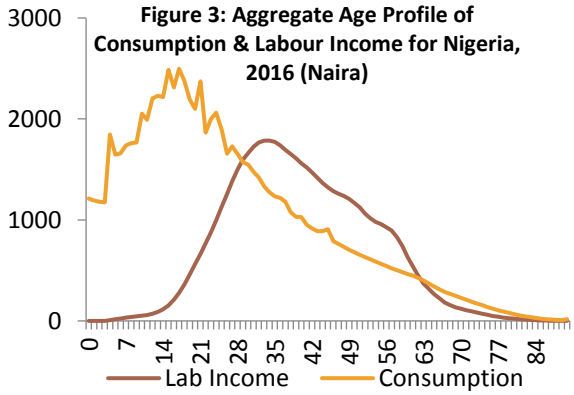
In Nigeria, the labour income profile shows that the bulk of the income is earned by the working age group of the population. However, the total labour income earned is less than the total consumption by the population resulting in what is known as the lifecycle deficit.

Lifecycle Deficit

The economic lifecycle deficit (LDC) is measured by the difference between consumption and labour income at each age, which gives us an empirically based, continues measure of economic dependency (Olaniyan, et al., 2011). Thus, whether the country has an economic lifecycle deficit or surplus is inherent in the relationship between income and consumption. The per capita values of the lifecycle deficit for Nigeria is represented in Fig 1.2. it shows that that lifecycle deficits exist for the young between ages 0 and 30 years and exists for the elderly between ages 62 and above. Thus, the age profiles of the lifecycle deficit in Nigeria imply that the young and the elderly consume more than they produce.

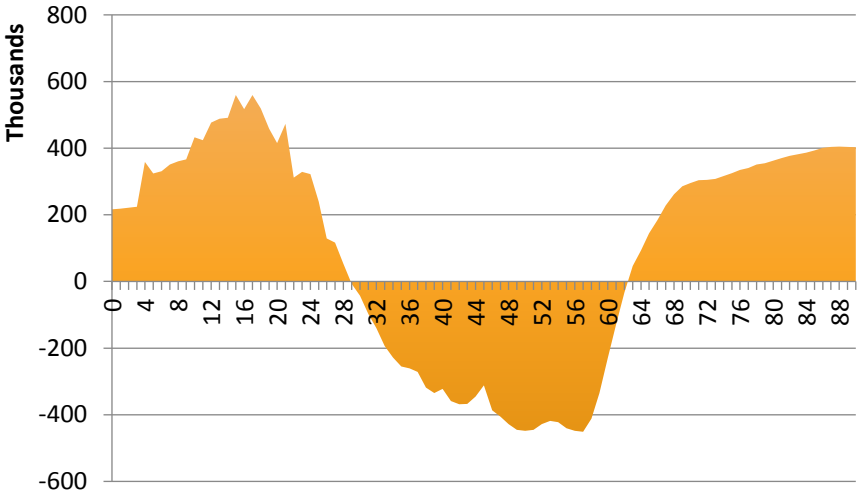
Thus, with extended three decades of dependency on each end of child and old age dependency, there is need for formation and adoption of appropriate social policies to improve the quality of life of both the young and the old so that Nigeria can begin to reap from its investment on her children very early and the elderly can have comfortable and less stressed life at old age.





Source: 2016 Nigeria Demographic Dividend Report

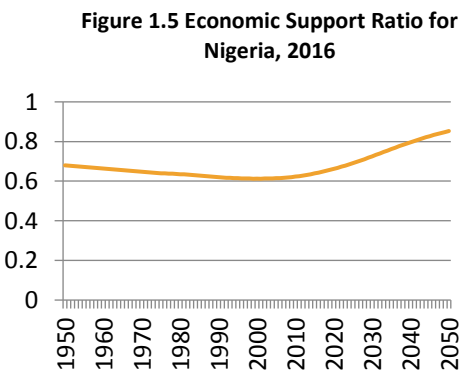
Figure 4: Per capita Lifecycle Deficit for Nigeria, 2016 (Naira)

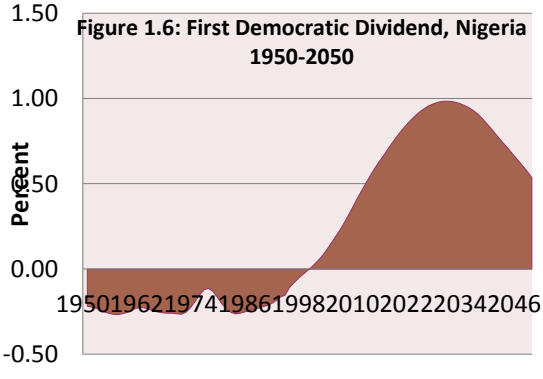


Economic Support Ratio and Demographic Dividend

The support ratio is ratio of the effective number of producers to the effective number of consumers (United Nations, 2013). In harnessing the demographic dividend in Nigeria, there has to be an improvement in the number of effective producers. This difference between the growth rates of the number of effective producers and effective consumers gives the economic suppor ratio. The profile of the support ratio for Nigeria is given in Figure 5. There has been an improvement in the situation of workers, as the growth of support ratio has turned positive, which opens the door for the enjoyment of the first demographic dividend.

The first demographic dividend is the growth rate of the economic support ratio and presented in Figure 6. For close to two decades, Nigeria have started to enjoy her first demographic dividend. The number of dependents can be reduced considerably by giving considerations to lowering the fertility rate, thus, reducing the total number of effective consumers.





Policy Options to Harnessing Demographic Dividend in Nigeria

Although Demographic dividend is simple and straightforward, it requires concerted actions to make it work. It does not translate to an automatic economic dividend. Key policies must be initiated and implemented for any country to reap the dividend. Some of the key policies are presented in Box 1. In harnessing demographic dividend in Nigeria, there are policy options that needs to be considered, these create the enabling environment in attaining the demographic dividend.

Some of the policy recommendations from the report are as follows:

Health and Fertility

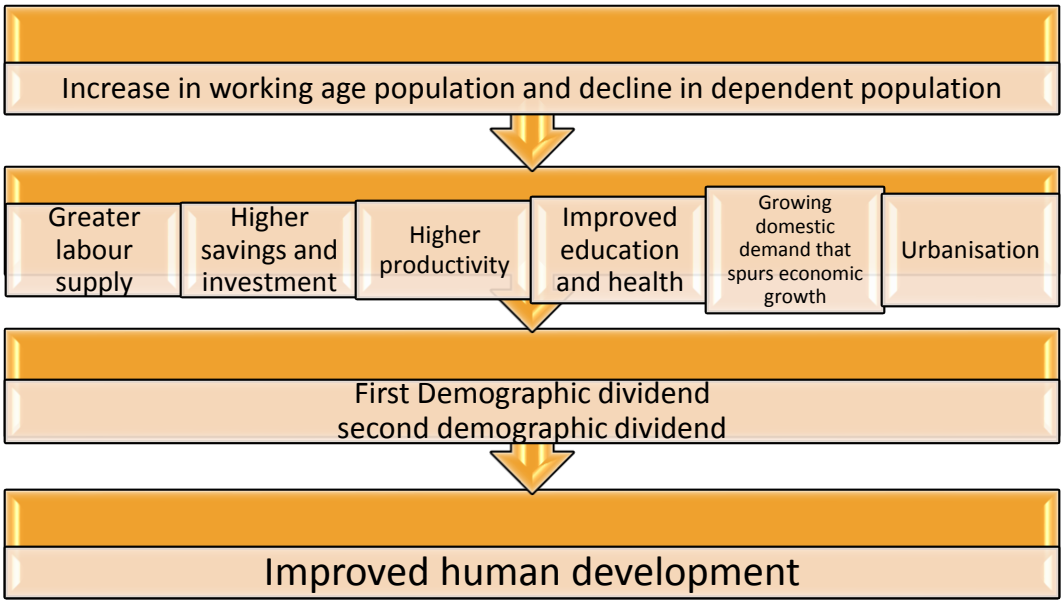
Fertility plays a major role in shaping the population structure of any country. Some of the factors being attributed to the increased fertility rate in Nigeria, among which are biological factors (such as the use of contraceptives), economic factors (such as the rate of adolescent pregnancies, teenage marriage, child education, and income), as well as social factors (culture and early marriage).

In order to keep fertility rate lower, the following policy options are recommended to facilitate harnessing of demographic dividend in Nigeria:

- One of the basic propositions for resolving the fertility issue is through quality education. According to Eloundou-Enyegue *(2013),* fertility reduction can enhance schooling via several mechanisms that include reductions in (1) the incidence of pregnancy-related dropouts, (2) schooling cohort sizes, (3) age-dependency, and (4) sibling-ship size.
- Furthermore, low level of education most especially of girl-child could spur fertility rate. An out-of-school girl child has higher tendency of entering into child-bearing period earlier than what it would have been if such a female child had the opportunity of furthering her education beyond secondary education level. Also, low level of education in women has the chance of reducing the women bargaining power on the decision to have a child, hence this could trigger fertility rate. Furthermore, women with low level of education are more likely to be less receptive to use of contraceptives. Thus, female education is crucial to reducing fertility rate.
- Government at all level should promote girls education as this is capable of reducing the child-bearing period of females. Also, promoting girls education will improve the bargaining power of female/women in the decision to have child, simply because an educated woman is likely to have gainful employment. Thus the opportunity cost of pregnancy and child-bearing becomes enormous on her. In the same vein, promoting female education will tend to enlighten female/women on the use of contraceptive hence, making them more receptive to the use of contraceptive. Girls who stay in school longer, get married and start bearing children later, which eventually makes them bear fewer children. Thus, primary and secondary education should be made a priority among teenagers, especially for the girl child

Box1: Drivers of the Demographic Dividend

With appropriate policies and a conducive environment, demographic changes can improve human development by several channels



Source: UNDP, 2016

- There is the need for a new comprehensive national policy on population. The earlier ones are now obsolete and fresh idea and policies to drive optimal population are needed through a new population policy. The first National Population policy adopted in Nigeria was in the year 1988 after which a second one was adopted in 2004 which states that "to achieve sustainable development and a higher quality of life for all people, Nigeria shall promote appropriate policies including population-related policies, to meet the needs of current generations, without comprising the ability of future generation to meet their own needs" (National Population Policy, 2004).

- Need to keep the fertility rate on a decreasing trend through reduction in teenage pregnancy and early marriages in the country, as well as. Awareness of the dangers inherent on the health of the girl child in early marriage should be publicized to the rural areas where such is prevalent. Many parents are ignorant of this; thus, awareness should be made at all levels from the cities down to the grassroots on the dangers inherent on the child.
- In the same vein, health institutions are paramount to achieving demographic dividend in the country. Awareness on the need to increase the use of contraceptives to keep fertility rate at a level that is required to harness demographic dividend in the country must be stirred-up by the government. As at 2016, the use of contraception stood at 13.4 percent while fertility rate stood at 5.8 births per women (MICS, 2016). The implication is that there is need for more awareness to be done on the need to embrace contraception in order to keep fertility rate at a level that will foster harnessing of demographic dividend in the country. This could be achieved if giant steps are taken by the legislature in ensuring that larger percentage of public resources are devoted to health sector in the country. At the moment, less than 5 percent of country's budget is allocated to health. This could be disastrous to the window of opportunity that has opened to Nigerian economy on the change in its population structure. Also, national youth parliament must be strengthened to create avenue through which views and opinions of youths will be expressed.

Education and Out of School Children

Investment in education is vital to the attainment of demographic dividend. So many factors can be attributed to the reasons why the number of children who are of age to attend school are actually out of school such as early marriage, teenage pregnancy, insurgencies, etc. However, the following policy options can be considered in lifting such bane, as well as harnessing demographic dividend in Nigeria.

- Government should put in place safety net to improve economic opportunities of parents. Most of the out of school children are as a result of the inability of their parents fund the schooling of their wards.
- It is highly recommended that government at all levels institutes laws that will prohibit child labour. In this wise, government at all level should domesticate Child Right Act to protect and promote interest of children in the country and also reduce incidence of early marriage among female children.
- Government at all level should engage traditional and religious leaders on the benefit of formal education to children. Most parents refuse to send their children to school on the basis that those who have gone to school have nothing to show for it in terms private returns to them. This disturbs many parents and as such they refuse to send their children to school even if they could afford it. Therefore, government should put in efforts to reposition the importance of formal education to children in the parents' mind.
- Most children especially in the Northern region are out of school due to the fact that they have been displaced on the account of insurgency in the region while those that are not displaced are afraid of attending school. Therefore adequate security measures should be put in place in the region to protect children and their family, to create conducive environment for schooling and allay fear of kidnapping and other forms of insurgency in the region. Adequate investments should also be put in place to improve school structures that has been pulled down by insurgencies
- Policy measures for the reabsorption of school dropped out children should be put in place by government to provide another opportunity to go back to school.
- Harmful practices such as child marriage, child labour and other activities that prevent school enrolment and attendance should be greatly discouraged and metted with appropriate sanctions
- Policies should be put in place to levy heavy fines on parents that put out their children for trading or hawking during school hours. There should be adequate enforcement of the Universal Basic Education system in Nigeria, such that parents will be willing to send their children to school, as well as ensure effective Monitoring and evaluation activities.
- School feeding programmes should be expanded to serve as incentives for school enrolment and attendance.

Youth Unemployment and Economic Growth

The youths constitute the change-agent to an economy. Any negative shock to well-being of the youth, such as unemployment, could generate devastating effects on the economy thus, inhibiting the economy from tapping into demographic dividend. Unemployment is disastrous if it is well pronounced among youth. On average, unemployment rate in Nigeria stood at 24.95 percent in 2014 and increased to 26.75 percent and 37.75 percent in 2015 and 2016 respectively (NBS, 2017). Thus, the following policy options need to be considered:

It is a clear fact that failure to address youth unemployment in the country will amount to failure of Nigeria government availing the opportunity of harnessing demographic dividend in

the country. It is against this backdrop that the following policy options are suggested to policy makers to address the underpinning issue of youth unemployment in the country.

- Nigerian children and youths must have access to adequate and quality education and health that will build their human capital so that they can be found employable and contribute to the development of the country
- Government at both federal and state level should create greater economic opportunities for youth across socio-economic strata, rural-urban divides, and gender and age group. Government should make economic environment conducive in terms infrastructure (reliable energy supply, communication and transportation network and others) to attract local and foreign investors.
- Institutionalizing sound regulatory structure to make informal and private sectors triumph, protect the interest of workers and guide against corruption in service delivery channel in order to promote effectiveness, value-for-money and efficiency of service delivery in the private and informal sectors.
- In recent times, Nigerian youths are coming up with some entrepreneur skills in information communication technology (ICT), entertainment industry and so on. It is high time Nigeria government started hunting for them and catch them young.
- Collaborative efforts in terms of credit facility between public and private sector must be strengthened. At the moment, there are existence of various scheme both in the private sectors and public sectors that provide credit facility to small and medium enterprises in the country

The Role of Legislature in fostering good governance

The Nigeria government play key role in law making and budget appropriation in the attainment of demographic dividend in Nigeria. The ability of governing institutions to respond to people's expectations through credible policy commitments is crucial for a country in achieving long-lasting economic and political progress (African Economic Outlook, 2017). Thus, the following policy options can be considered:

- The Legislative arm of government should spearhead the domestication of International Roadmap on harnessing demographic dividend in Nigeria. The domestication should be extended to all the states of federation with full awareness of its important to economic growth and development.
- The legislative arm should ensure that the Nigeria Roadmap on harnessing demographic dividend shapes the finance structure and resource allocation to various sectors, most especially sectors that have direct link to harnessing demographic dividend in the country. These sectors include health, education, population, skills acquisition and development and job creations. It is highly recommended that resource allocations to MDAs in-charge of the highlighted sectors above be improved.
- It is recommended that oversight function of the Legislature is extended to children and youth education and health financing and old age insurance scheme. Children and youth are propellers of demographic dividend. Financing their health and education is critical to harnessing demographic dividend. Such oversight function should ensure adequate resources allocation to the sectors (health, education, employment, skill acquisition and development, job creation) and also guarantee value-for-money, effectiveness and efficiency of public resources allocated to the sectors.
- Youths are crucial to tapping demographic dividend. Policies to encourage youth participation should be formulated and strengthened while the existing policies should be consolidated to widen youth participation in Nigeria political system. It is high time

youth take active roles in process of law making and implementation at national and state levels.

- Legislations to promote efficiency and effectiveness in service delivery should be enacted Such lawas would include those that will guide against corruption and promote accountability, transparency and responsibility in the service delivery and reward system of labour in the country.
- Information is crucial to harnessing demographic dividend. Based on this, Nigerian Legislative arm of government should pioneer the awareness of demographic dividend in the country and across the states and ensure domestication of international convention on harnessing demographic dividend both at national and states levels. *Every Nigerian must speak demographic dividend!*

Savings and Financial Dividends

The Youth bulge and decreased dependency rates means that more resources are available to the working population that they would need for their current status. Hence, it creates opportunity for saving and investing excess labour income that are available during the period. There must be policies that encourage and stimulates savings and investment of these surpluses. The country must prevent a way in which the excess funds are extravagantly spent on consumption with little or nothing for investment. Even while the consumption are made efforts must be made to internalise the dividend so that the dividend is not created for those outside the country. If the returns on investment are made and saved outside the country, it might be counterproductive.

Conclusion

Harnessing demographic dividend rests on appropriate policies in health, education, economic growth and good governance. In changing the population age structure, there has to be a decline in the fertility rate so as to fully maximize the opportunities to harnessing the demographic dividend. More commitments in terms of investments in voluntary family planning can be put in place in order to reduce the total fertility rate. Furthermore, agitations towards the education of the girl child can go a long way in reducing fertility. Various schemes both in the public and private sectors will provide opportunities for the youths to be engaged in productive activities.

In all, good governance is important in carrying out all other policies and programmes of the government of the country. This will help in shaping the economy as a whole, as well as create favourable grounds in harnessing demographic dividend in Nigeria.

CHAPTER ONE
INTRODUCTION

Nigeria is the most populous country in Africa and the 7th most populous country in the world with an estimated population of approximately 182.2 million (UN 2015 World Population Prospect). At the current annual growth rate of 3.2 percent, it is projected that Nigeria will be the 3rd most populous country in the world by 2020 and the population is expected to double by the year 2030. The rapid population growth rate can be attributed to the high total fertility rate (TFR) of 5.8 and low contraceptive prevalence rate of 13.4% (MICS, 2016). Like many African countries, Nigeria is currently in the middle of demographic transition with fertility and mortality beginning to fall. This has enormous implication for the development of the continent because of the changes that it brings into the age structure of the population. The beginning of the transition had adversely affected many countries as the share of the population at young ages increased and the share in the working ages declined. The age structure of the population is dominated by largely youthful population many of whom are either entering or will be entering into the working age in the next few years. This is the reasoning behind the demographic dividend concept.

Demographic dividend is the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of the population (14 and younger, and 65 and older). This means that there is a boost in economic productivity that occurs when there are growing numbers of people in the workforce relative to the number of dependants. However, the dividend does not happen automatically. It is expected that the demographic transition and changes in the population structure be accompanied by sustained investments in education, skills development, health, job creation and good governance. It is only a country with both increasing numbers of young people and declining fertility that has the potential to reap a demographic dividend (Bloom et al, 2010).

There are two phases/types of demographic dividends. The first dividend, which potentially occurs as a consequence of demographic transition, is time bound and can only last for 30 – 50 years. If well harnessed, it can lead to second demographic dividend. The second dividend is associated with population ageing, and where there has been anticipation of the future decline in the support ratio [this] leads to an increase in wealth and possibly assets. The second dividend is a consequence of the actions and policies taken during the period of first dividend. The extent to which the first dividend is harnessed will determine the degree to which the second dividend will be realized. The first dividend yields a transitory bonus while the second transforms that bonus into greater assets and sustainable development. These outcomes, as indicated earlier, are not automatic but depend on the implementation of effective policies (Lee and Mason, 2006). Unfortunately, there are limited evidences on the nature and magnitude of the dividends that African countries stand to gain as well as the ways of harnessing the dividends.

However, the best opportunities many times turn out to be the biggest challenges. Demographic dividend comes with its own complexities and will need nurture and complementary policies. A demographic dividend can however degenerate into a violent youth bulge and youth bulge can lead to *a 'demographic disaster' or 'demographic doom'.* Reaping the demographic dividend means that the productive population is engaged. Where there is a high unemployment, mechanical improvements in age-based dependency ratios cannot be a proxy for improvements in actual economic dependency ratios (Hendrixson, 2014). However, the current population growth puts substantial pressure on the country's capacity to provide quality social services such as new schools, more clinics, adequate sanitation, as well as food and provisions to meet basic needs.

Many African countries appreciate the importance of this demographic change and dividend to their development. In realization of the importance of Demographic Dividend in facilitating the implementation of Agenda 2063 for socio-economic transformation of Africa, and the Agenda 2030 for Sustainable Development, African Union dedicated the year 2017 to "*Harnessing Demographic Dividend through Investments in Youth*" and adopted a Roadmap for its realization. The Union thereafter encouraged each member-country to develop a country specific roadmap for putting in place measures for creating a conducive environment for harnessing Demographic Dividend, to which Nigeria responded promptly by successfully launching its Roadmap in July 2017. Specifically, the Roadmap sought to guide and facilitate the implementation of programmes that will put Nigeria back on the path to reaping demographic dividend within the shortest possible time. Demographic dividend is a window of opportunity, which opens and closes within a specific period given the speed of demographic transition of the country. Hence, the sustainable development of the country is dependent on how the country can harness its demographic dividend. One of the most popular definitions of sustainable development is given in the Brundtland report as "development that meets the needs of the present, without compromising the ability of future generations to meet their own needs". Sustainable development consists of three pillars: economic, social and environmental protection. Sustainable development suggests that in the ordinary ways and business of life, all these should be done with the objective of making sure that that the standard of living of the next generation is not jeopardized. This is one of the underlying principles of demographic dividend. It is therefore important to examine and identify the period and duration of window of opportunity that is expected to generate the demographic dividend to the country.

Thus, the study to identify the structure of existing policies and how they can be shaped to enable the citizens to harness and benefit from the dividends. Accordingly, the analysis will help policy makers to understand the nation's prospects and potentials for the demographic dividend and come up with appropriate policies and programmes to harness it. Also, the analysis will inform the development of advocacy resources that will fully integrate population dynamics and demographic dividend framework into the socio-economic transformation of Nigeria.

CHAPTER TWO

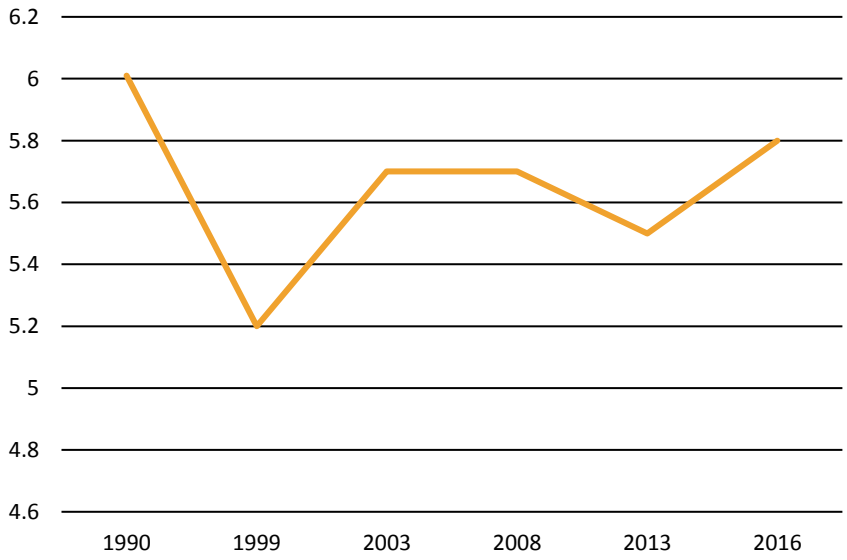
FERTILITY, HEALTH AND POPULATION DYNAMICS OF NIGERIA

2.1. Nature of Fertility and Mortality Trends and magnitude in Nigeria

2.1.1 *Nature of Fertility trends and magnitude in Nigeria*

With an estimated population of about 188 million in Nigeria, there is no doubt that the fertility rate is a major contribution of the increase in population over time. The fertility rate has increased considerably between the year 2013 and 2016. Fertility rate is the average number of children that would be born to a woman over her lifetime if she was subject to the prevailing age-specific fertility rates and if she were to survive throughout her child bearing years. At the current annual growth rate of 3.2 percent, the rapid population growth rate can be attributed to the high total fertility rate (TFR) of 5.8 births per women (Figure 2.1). The trend in fertility in the country shows that the TFR was as high as 6.01 when compared with that of 2003 at 5.7%, and remained at that in 2008, after which it declined again in 2013 to 5.5 births per woman. It however increased to 5.8 in 2016.

Figure 2.1: Trend in the Total Fertility Rate in Nigeria



Source: NDHS data 1990, 2003, 2008, 2013, MICS 2016.

Generally, women have high fertility rate at above 20 years of age and keeps increasing until they get to their late twenties, after which it declines gradually. The age specific rate shows that women in the mid-twenties to late twenties have a higher TFR as compared to those of older age groups (Table 2.1). While the age specific fertility rate for women in the early twenties have been increasing over time, it begins to decline upon reaching thirty years of age.

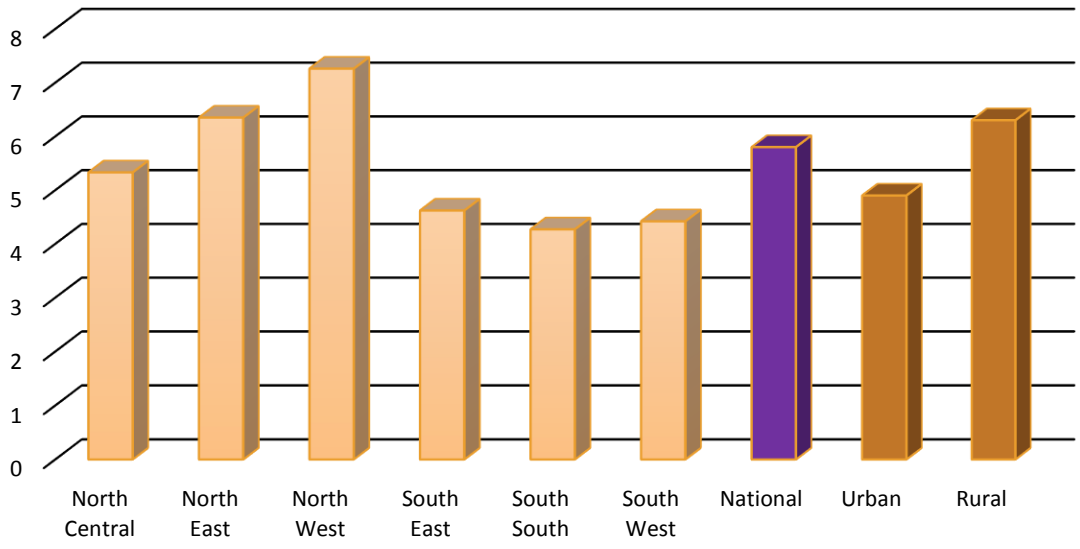
Table 2.1 Trend in Age Specific Fertility Rate

	1999	2003	2008	2013	2016
15-19	111	126	121	122	120
20-24	220	229	225	235	238
25-29	239	274	265	253	263
30-34	226	244	241	234	234
35-39	138	168	161	160	165
40-44	71	72	87	78	99
45-49	24	18	44	29	49

Source: NDHS 1999, 2003, 2008, 2013, MICS 2016.

The total fertility rate is generally higher in the Northern part as compared to other zones. For instance, in 2016 (Figure 2.2), the TFR for the North-West was 7.26, which is far higher than the national figure of 5.8. The North-East also records a TFR of 6.35, also higher than the National TFR. This suggests that the Northern parts contribute more to the total fertility rates as compared to other zones.

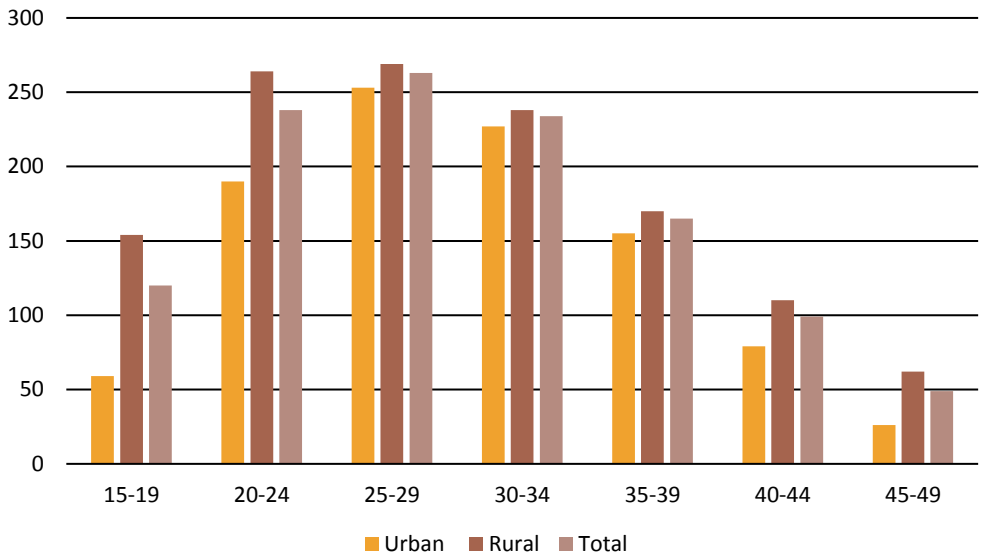
Figure 2.2 Total Fertility Rates by Geo Political Zones (2016)



Source: Drawn from Multiple Indicator Cluster Survey data 2016.

Furthermore, total fertility rate is higher in the rural areas as compared to the urban areas at 4.9 and 6.3 births per woman respectively. More so, at every of the age groups (Figure 2.3), women in the rural areas bear more children than those of the urban areas.

Figure 2.3 Age Specific Fertility Rate by Rural and Urban Regions



Source: Multiple Indicator Cluster Survey data 2016.

2.1.2 *Some Drivers of High Fertility*

High fertility rate can be attributed to biological factors (such as the use of contraceptives), economic factors (such as the rate of adolescent pregnancies, teenage marriage, child education, and income), as well as social factors (culture and early marriage).

Some of the drivers of high fertility rate in Nigeria identified are:

i. Use of contraceptives
ii. Rate of adolescent pregnancies
iii. Girl child education
iv. Early Marriage

i. Use of contraceptives

One of the prominent methods of family planning in Nigeria is the use of contraceptives. It is a successful developmental intervention with so many benefits to maternal and child health outcomes. The use of contraceptives can be a reason for low fertility in some areas, while the non-use of contraceptive as family planning method can also be a cause of high fertility in some other areas. In order to reduce fertility rate in the country, effective use of contraceptives is a key driver. However, a larger percentage of the population has not been able to meet the needs of the use contraceptives, most especially in the Northern regions.

Table 2.2: Percentage of Married Women aged 15-49 with Met and Unmet need for Family planning by Geo-Political zones, 2016

	Met Needs	Unmet Needs
National	**13.4**	**27.6**
North Central	16.6	26.3
North East	7.6	26.9
North West	8.4	26.9
South East	23.3	24.7
South South	16.7	35.5
South West	25.8	28.4
Rural	10	27.7
Urban	21.1	27.5

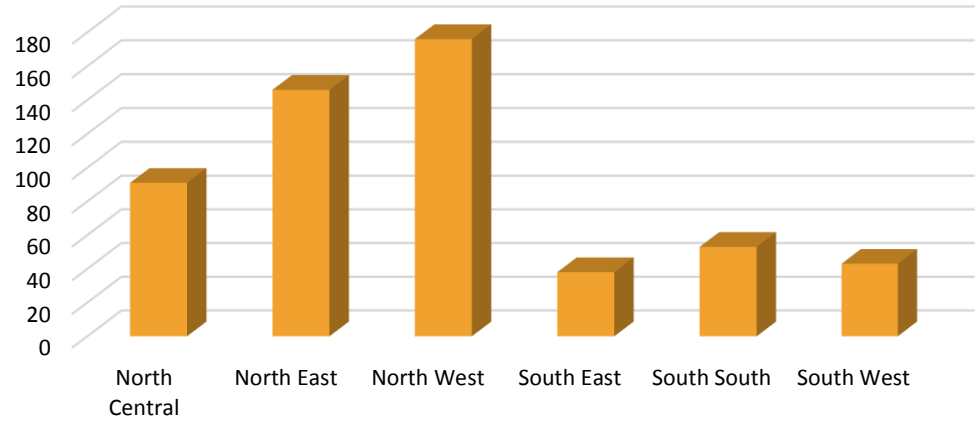
Source: Multiple Indicator Cluster Survey data 2016.

The table 2.2 reveals that fewer women from the Northern part of the country have their needs for contraceptives met. This is also revealed in the needs for contraceptive met of about 10% of the rural population. Hence, a reason for the high fertility rate in these regions. The government should also make priority investments in family planning at state level and the local government, particularly for women in the North Western and North Central part of the country. Awareness on family planning and the use of contraceptives should also be inculcated into the plans of the government

ii. Rate of adolescent pregnancies

Another driver of high fertility rate is the rate of adolescent pregnancies. Figure 2.4 reveals that the rate of adolescent pregnancy is higher in the North generally and is highest in the North-Western part of the country as compared to other zones. This explains better the reasons for the high fertility rate in the zones.

Figure 2.4: Adolescent Birth Rate



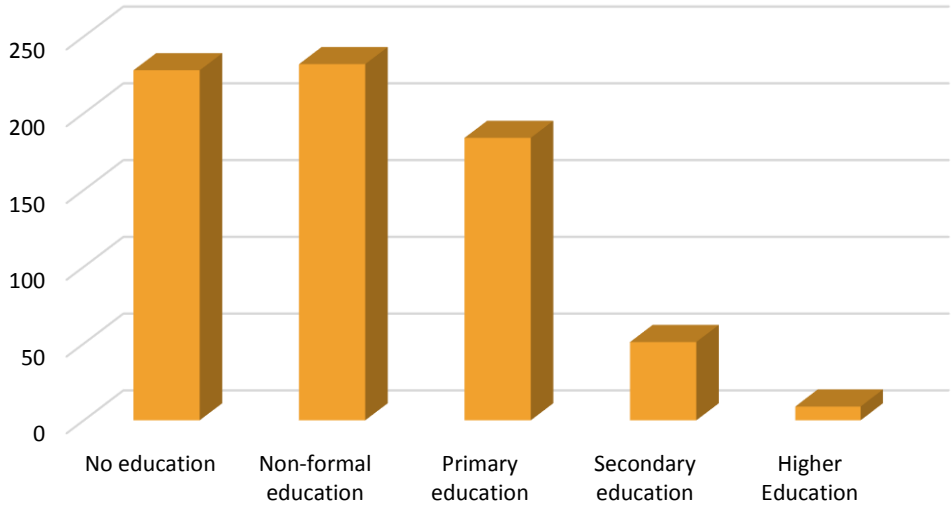
Source: Multiple Indicator Cluster Survey data 2016

iii. Girl Child Education

The level of exposure of the girl child to education is also a key driver of the fertility ratio. In Nigeria, young girls with higher level of education have lower age specific

fertility rate, and they also have lesser tendencies of getting pregnant at teenage. However, those with no education are at higher chance of getting pregnant at adolescent ages. Girls who stay in school longer, get married and start bearing children later, which eventually makes them bear fewer children. Furthermore, their exposure to education will give them an edge over those who are not educated in terms of their use of contraceptives and other child survival services. It is important that for Nigeria to harness a good level of demographic dividend coming from demographic transition, the general empowerment of women should be looked into critically. The major effort should be efforts geared at reducing the fertility rate in the country. This can be done by improving the level of girl child education.

Figure 2.5: Adolescent birth rate (Age-specific fertility rate for women age 15-19 years)



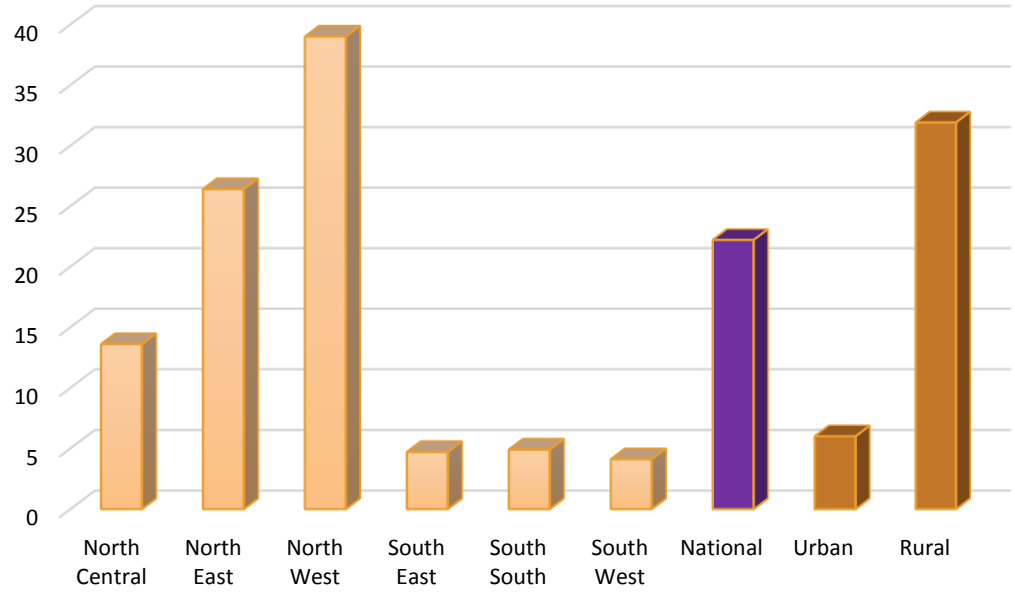
Source: Multiple Indicator Cluster Survey data 2016.

Women can be empowered by investing in their education as well as enhancing their participation in economic activities. Improving educational attainments for adolescents and young girls can also reduce fertility rate as this can cause delay in childbearing by adolescents. School progression should go beyond primary school level.

iv. Early Marriage

Early child marriage increases the total fertility rate in Nigeria as it gives them more opportunities to give birth to more children over their life span. In Nigeria, this is more prominent in the North-West, as evidently shown from the graph below that 39% of teenagers get married in the North-West. Furthermore, because of the low level of education among the rural dwellers in understanding the risks associated to child marriage to the health of the child, the parents give their children away in marriage at such ages. This can also be traced to the culture of such people. This should be discouraged in order to reduce fertility rate.

Figure 2.6: Percentage of teenagers age 15-19 who are currently married/in union

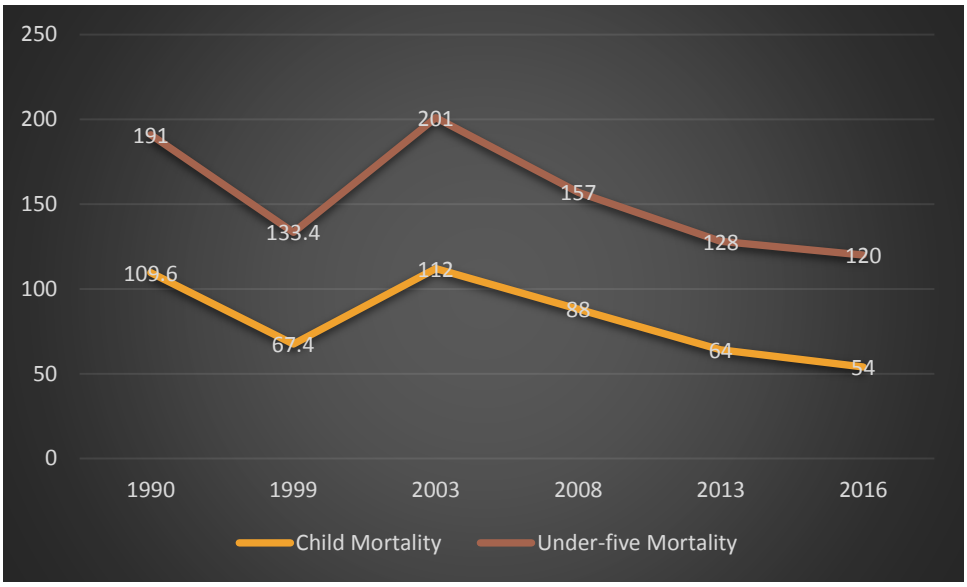


Source: Multiple Indicator Cluster Survey data 2016.

2.1.3 *Nature of Mortality Trends and Magnitude in Nigeria*

In Nigeria, child survival has improved considerably over the past few years. The child mortality and under-five mortality rates, expressed as the number of births per thousand, has been declining since 2003. There was a sharp drop in the mortality rate in 1999, however, it increased rapidly in 2003, after which a continuous fall has been observed.

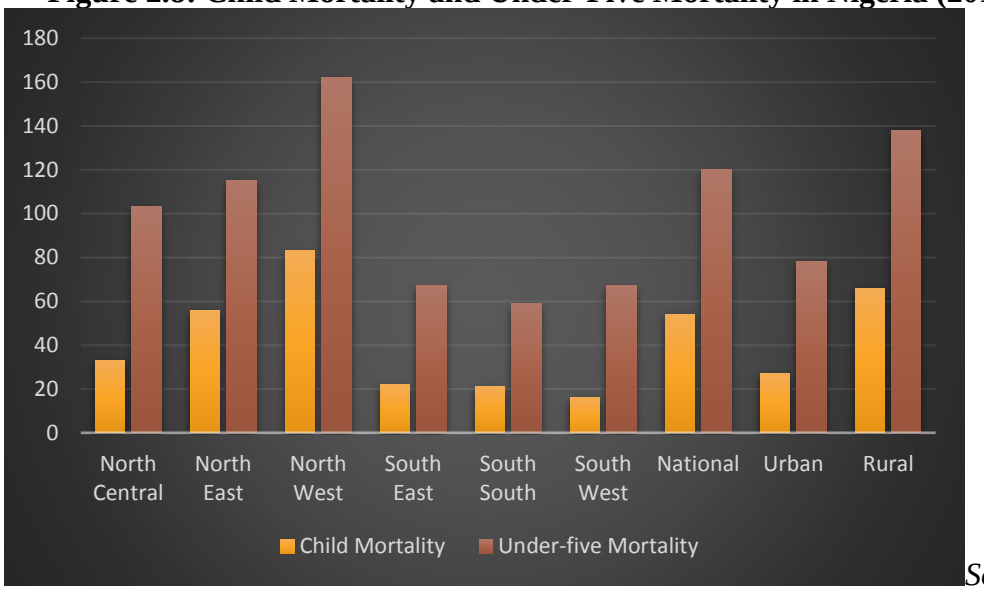
Figure 2.7: Trends in Child Mortality and Under-Five Mortality



Source: NDHS 1990,1999,2003,2008, 2103, MICS 2016.

Under-5 mortality declined from 201 deaths per 1000 live births in 2003 to 120 deaths in 2016. Similarly, child mortality declined from 112 deaths per thousand in 2003 to 54 deaths per thousand in 2016. Thus, if interventions in reducing child mortality are sustained and improved upon, child mortality will consequently reduce to the barest minimum. The NDHS (2013) reported also revealed that infant and child survival are strongly influenced by some socioeconomic characteristics such as place of residence, zone, mother's education, and household wealth. Mothers that are more educated have less mortality rates than those who are less or not even educated at all. Child mortality also decreases as wealth increases. This can be attributed to the availability of resources needed for survival. Furthermore, the child mortality and under-five mortality are more prevalent in the rural areas as compared to the urban areas. These can also be attributed to factors such as the education level of the mother, as well as the availability of resources and facilities for the survival of the child in these regions.

Figure 2.8: Child Mortality and Under-Five Mortality in Nigeria (2016)



Source: Multiple Indicator Cluster Survey 2016.

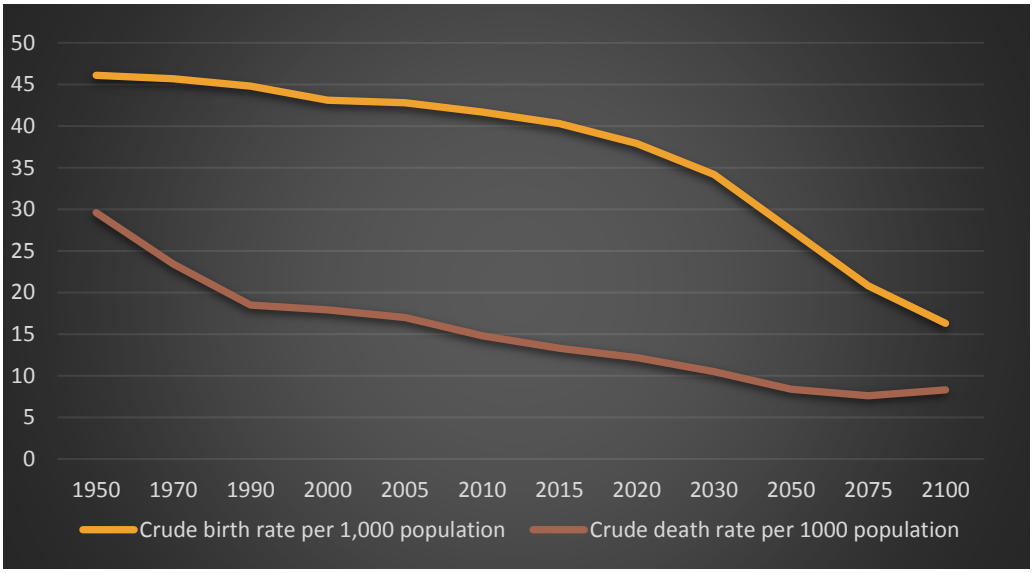
There are also variations in the mortality rates at the geo-political zones from the national level. Mortality rate per thousand is low in the South-South for both child mortality and under-five mortality. Under-Five mortality is highest in the North-West.

2.2 Demographic Transition

Demographic transition is referred to as the transition from high birth and death rates to lower birth and death rates as a country or region develops from a pre-industrial system to an industrialized economic system. Whether the population of a country is growing or shrinking has a huge effect on the development of the country. The important variables that interact in the transition are: the birth rate and the death rate, and the rate of natural increase. The birth rate is the number of births per thousand per year; the death rate is the number of deaths per thousand per year. There are typically four stages of the transition from high birth rates and death rates to low birth rates and death rates, and also from the agrarian to industrialized economies.

The first stage is majorly dominated by very high birth rate and high death rate. The birth and death rates fluctuated rapidly due to natural events such as flood, disease, and drought. Family planning was non-existent as they had no means of child birth control and spacing. Life expectancy rate is also low in this stage. At stage two, the death rate drops rapidly due to improvement in sanitation, health care, food and water supply. Fertility rate increases leading to population explosion. This stage portrays an increase in the age structure. At stage three, death rates are low and birth rates diminish. This can be traced to the enhanced economic conditions, an expansion in women's status and education, family planning and access. During this period, there is a demographic window of opportunity that can potentially produce economic growth through an increase in the ratio of working age to dependent population; which is known as the demographic dividend. However, stage four occurs where birth and death rates are both low. Fig. 2.9 shows trend in demographic transition in Nigeria.

Figure 2.9: Trend of Demographic Transition in Nigeria



Nigeria is currently in the middle of demographic transition with morality rate falling, and if right policies are put in place, there will be a considerable decline in the fertility rates. This has enormous implication for the development of the country and the continent of Africa because of the changes that it brings into the age structure of the population. Improving child survival is very critical in reducing the mortality rate. Also, the use of contraceptives and discouragement of early marriage are vital to reducing fertility rates in the country.

2.3 Burden of disease and Health Transition in Nigeria.

The burden a particular disease has in a particular area as measured by the cost of the burden, morbidity and mortality is usually referred to as ***burden of disease***. These diseases and their burdens eventually have implications on the population. The mortality rate in the country, especially at the primary health care level, tends to push up the mortality rate of women and children. This eventually affects the population structure and demographic dividend.

The 2015 World Health Organization Report shows that Nigeria's neonatal death rate is 33.3/1000 live births and maternal mortality ratio is 814/100,000 live births. Besides, the country's burden of disease (BOD) is very high with 70 per cent of the BOD occurring at the Primary Health Care (PHC) level. The 2008 NDHS and 2013 Institute of Health Matrix and Evaluation respectively show that causes of morbidity and mortality among women of reproductive age group are: Haemorrhage has reduced from (23%) to (22%), Hypertensive diseases increased from (11%) to (17%) and Unsafe abortion from (11%) to (13%). However, there is evidence that other few causes are on the decline; such as Infections: from (17%) to (15%) and Obstructed labour: from (11%) to (8%). High BOD has affected productivity negatively. The implication of this is that the population age structure will be affected negatively and demographic dividend accruing to the nation as a whole will shrink.

2.4 Access and Quality of Healthcare in Nigeria

2.4.1 *Health Care Access*

Universal health coverage (UHC) guarantees every citizen access to acceptable and quality healthcare, as well as provides financial protection to them, thus cushioning them from the impoverishing effects of ill health and the costs thereof. Universal access to healthcare improves health system's outcomes, improves productivity and positively correlates with economic development.

The Nigerian healthcare system is organised into primary, secondary and tertiary healthcare levels. The Local Government Areas (LGAs) are responsible for primary healthcare, the State Governments are responsible for providing secondary care while the Federal Government is responsible for policy development, regulation, overall stewardship and providing tertiary care. These tiers of government are expected to ensure financial access to health care services. As at December 2011, there were 34,173 health facilities from the 36 states and FCT listed in the health facilities directory, of this number 30,098 (88%) are primary health facilities, 3992 (12%) are secondary level facilities, while 83 (1%) are tertiary level facilities. More than 66% of the facilities are public or government-owned. In terms physical access, the UHC conference report recommended that there should be at least one functional PHC per ward, one General Hospital per LGA, one Tertiary Hospital per State and three mobile PHC clinics per LGA. Other issues included, strengthening of the supply chain management systems in conformity to minimum standards for supply chain management of health products and ensuring minimum quantity and skill mix of human resource for health at each level.

The Nigerian government established the National Health Insurance Scheme (NHIS) under Act 35 of 1999 with the aim of improving access to healthcare and reducing the financial burden of out-of-pocket payment for health care services (NHIS, 2012). The Nigerian government considers health critical to engendering sustainable national development as it enhances national productivity and competitiveness. Thus, access to quality health care and prevention services are considered vital for poverty reduction and economic growth, which is key to the attainment of Nigeria's Vision 2020. Expansion of access to health care services is also of urgency if the nation is to attain the Sustainable Development Goal 3 of universal access to health care services, particularly, as she failed to attain the health-related MDGs.

Overall, out-of-pocket expenditure (OOPE), as a proportion of total health expenditure ranges from 78% in 2010 to 73% in 2014 (Federal Ministry of Health, 2017). The high level in OOPE poses a barrier to accessing health services, thereby fueling inequity in health outcomes and further exposing the already poor to impoverishment and financial catastrophe. Movement towards UHC can be achieved by expanding pooled financing across the following three dimensions Population coverage, Cost coverage and Service coverage (WHO, 2010).

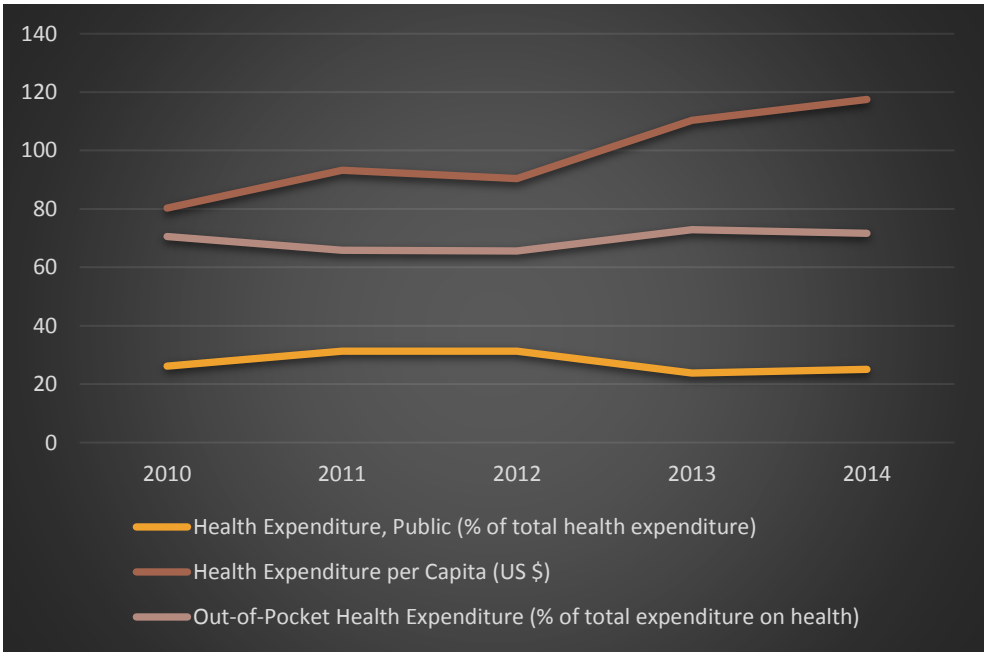
2.4.2 Health Care Quality

Health Care quality describes the intricate relationships between quality, cost, and accessibility of health care within a community. In order to ensure health care quality, governments at all levels need to conduct health systems needs assessment for improvement of quality of services, strengthen existing system for supervision and monitoring of health care in Nigeria, strengthen existing consumer protection agencies and improving health care infrastructure and equipment. The Institute of Medicine in 1999 released six domains to measure and describe quality of care in health. Quality health care should be:

i. Safe – avoiding injuries to patients from care that is intended to help them.
ii. Effective – avoiding overuse and misuse of care.
iii. Patient-Centered – providing care that is unique to a patient's needs.
iv. Timely – reducing wait times and harmful delays for patients and providers.
v. Efficient – avoiding waste of equipment, supplies, ideas and energy.
vi. Equitable – providing care that does not vary across intrinsic personal characteristics.

i. Health Expenditure

Figure 2.10: Health Expenditure Statistics



Source: World Development Indicator

Expenditure made by government on health as a proportion of total health expenditure in the economy was 26.2% in 2010. In 2011, government spent only ₦31.2 of every ₦100 spent on health in the economy. In 2012, this rose almost insignificantly to 31.3%, only to later experience a decline in 2013 to 23.9%. Following this decline is another slight rise to 25.1%. In essence, government has spent lower than individuals spent on healthcare in the economy. In fact, the government has not, at any period between 2010 and 2014, spent up to one-third of the total health expenditure, leaving households to bear over two-thirds of health expenses by themselves.

Conclusively, there has been an upward trend in health spending on an average person in Nigeria ever since 2010, continuing until 2014, even though there was a slight decline in 2012, which is the same year the proportion of health expenditure in GDP dropped.

Individuals made significant spending on health between 2010 and 2014. In 2010, direct payments of individuals for health services were as much as 70.6%. Although this declined in the consecutive years of 2011 and 2012 to 65.8% and 65.6% respectively, it rose again to 72.9% in 2013. According to Figure 2.10, in 2014, it experienced a fall back to 71.7%. Notably, individuals spent much more than government in all the years; in fact, individual Nigerians as households spent over two-thirds the total health expenditure in all the years, on average.

ii. Human Resource for Health

Nigeria has one of the largest stock of human resources for health in Africa. The World Health Organisation (WHO) describes health workforce as people who are "primarily engaged in action with the primary intent of enhancing health" diagnosing illnesses, healing, caring for people, monitoring health outcomes, supporting treatment adherence, providing medical information and preventing diseases. This workforce consists of physicians, nurses, midwives, dentists, pharmacists, laboratory workers, environment & public health workers, community health workers, other health workers and health management and support staff. The performance of a health system and its impact on health outcomes is influenced significantly by the size, distribution, and skill mix of its health workforce. Table 2.2 shows the regional distribution of health workers in Nigeria.

Table 2.2: Regional distribution of health workers in Nigeria

Health Workers Categories	Total Number	North Central %	North East %	North West %	South East %	South-South %	South West %
Doctors	52,408	9.73	4.06	8.35	19.59	14.37	43.9
Nurses	128,918	16.4	11.65	13.52	15.29	27.75	15.35
Radiographers	840	14.3	3.66	5.97	15	18.3	43
Pharmacists	13,199	19.94	3.8	7.79	11.74	12.39	44
Physiotherapists	1,473	10.8	2.73	8.32	8.58	7.93	62
Medical Lab Scientists	12,703	6.82	1.72	3.6	35.26	23.89	29
Environmental & Pub HW	4,280	9.39	11.27	18.94	12.36	15.69	32.08
Health Records Officers	1,187	13.34	4.85	11.6	14.64	29.9	26
Dental Technologists	505	14.08	5.92	5.92	12.96	16.62	44.5
Dental Therapists	1,102	13.19	10.29	21.86	10.19	12.99	31.5
Pharmacy Technician	5,483	6.17	9.12	18	8.58	11.8	46

Source: Human Resources for Health Country Profile Nigeria, October 2008 (Professional Regulatory Agencies 2008).

iii. Policy and Institutional Arrangements

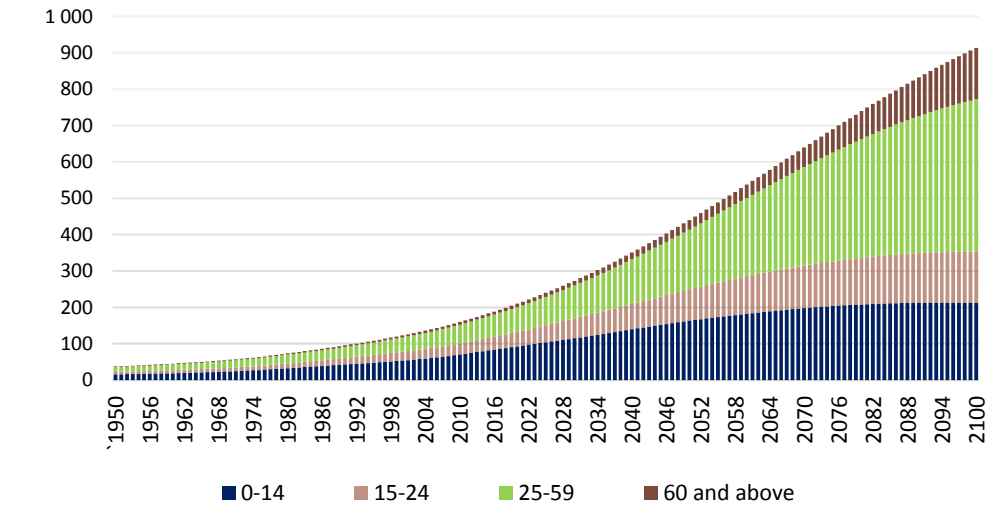
Government has done much in the development of Human Resources for Health (HRH) in Nigeria in relation to the development of appropriate legislations and policies. For example, the National Health Act 2014 (Section 5) provides for the enablement of HRH development in the country. Additionally, the FMoH has developed policies such as the National Human Resources for Health Policy (NHRHP) and National Human Resources for Health Strategic Plan (NHRHSP). Both the NHRHP and NHRHSP provide templates for guiding the States and the FCT Abuja, in the development of their respective policies and plans. However, as of date less than a half of them have leveraged on this guidance. In line with the policy provisions, states, are expected to establish HRH units in their respective State Ministries of Health (SMOH) but as of date about one-third of the States and FCT were yet to do so. A National Task Shifting and Task Sharing (TSS) Policy with Standard Operational Procedures has also been developed by the FMoH. There is also the establishment of National Human Resources for Health Information System (NHRHIS) - Health Workforce Registry. This is to inform efficient performance of HRH management functions such as forecasting, recruitment, deployment, retention, motivation and performance management; while the Registry project is to enable tracking and accounting for health workers.

2.5 Population and Urbanization

2.5.1 *Population Structure*

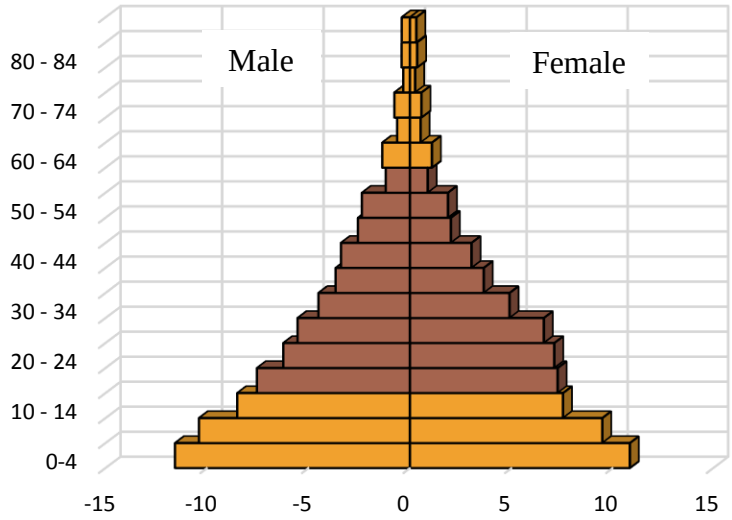
Going by the magnitude and dynamics of population in Nigeria, there is a growing concern as regards the fertility and mortality issues in the country. The age structure Nigeria's population is shown in Fig, 2.11 for the years 1950 to 2100.

Figure 2.11: Nigeria's Population (million)



The age structure of the country's population as at 2006 is explained in Fig. 2.12 using the population pyramid, which displays the population's age-sex distribution. The very wide base of the population pyramid for the entire country, indicates a high birth rate, possibly due to the drivers of fertility such as child/teenage marriage, low girl child education, limited use of contraceptives as well as increased rate of adolescent pregnancies.

Figure 2.12 Nigeria Population Pyramid

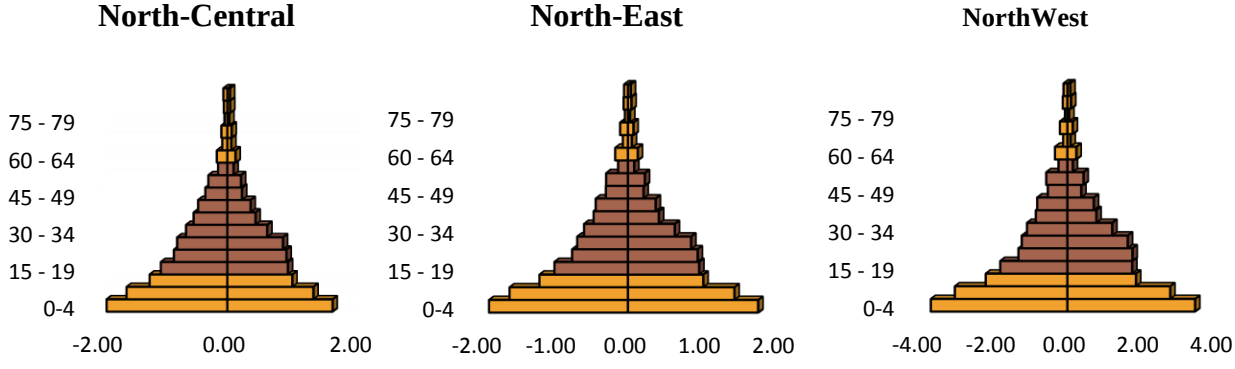


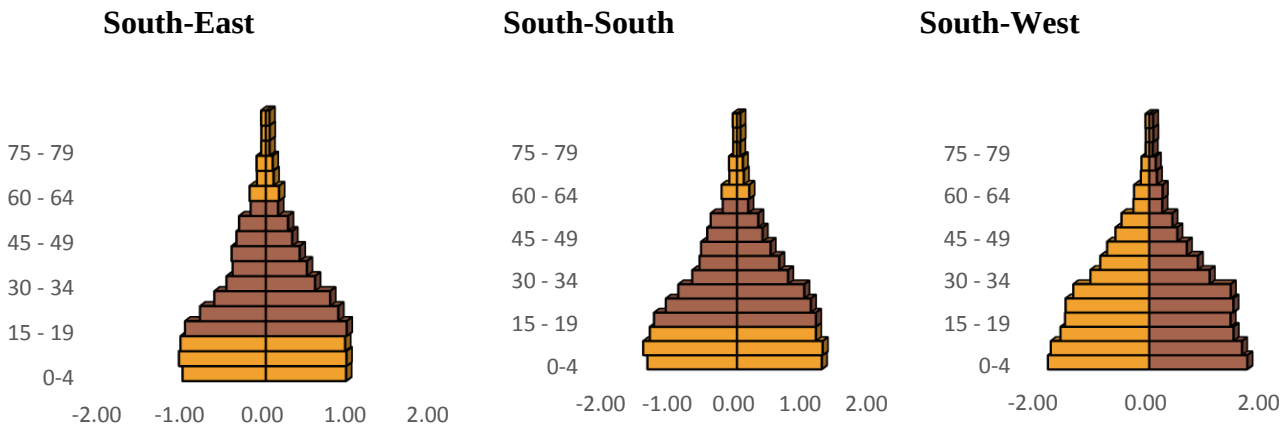
Source: 2006 Population Census

The peak of the pyramid indicates that the country has a high mortality rate. Nigeria's population pyramid is expansive, thus, there is a need for substantial investments in reproductive health and family planning, particularly in the regions and zones where there is a high level of fertility. Education is another area to consider in investing largely upon in order to reduce the country's fertility rate.

The shapes of the population pyramids by geo-political zones show that there is higher fertility and mortality rates in the Northern regions of the country. However, the fertility rates in the Southern regions are not as high as those of the North. Thus, in harnessing demographic dividend, there has to be improvement in access and quality of education and health care services which are enablers of fertility reduction.

Figure 2.13 Nigeria Population Pyramid by Geo-Political Zones





Source: 2006 Population *Census*

2.6 Rural - Urban Distribution

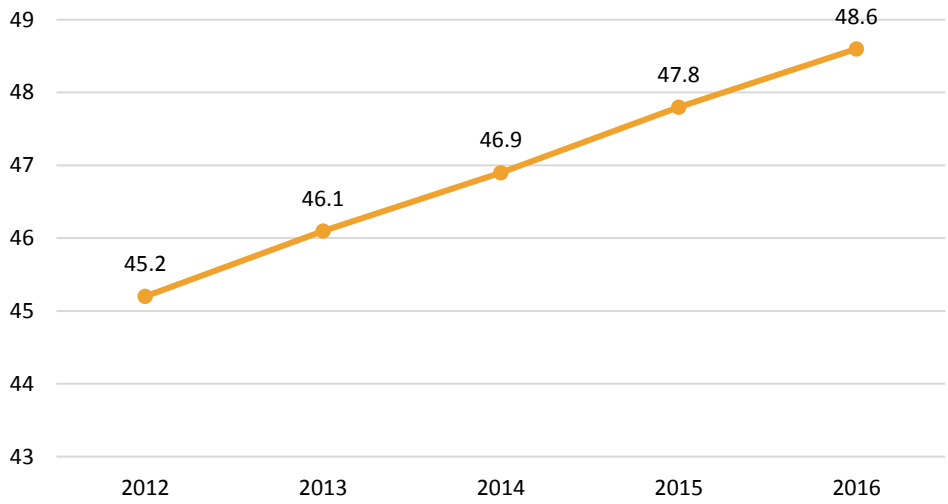
Because of the great influx of people into urban areas, the growth rate of urban population in Nigeria in 1986 was estimated to be close to 6 percent per year, more than twice that of the rural population. Between 1970 and 1980, the proportion of Nigerians living in urban areas was estimated to have grown from 16 percent to more than 20 percent. Although Nigeria does not have the highest proportion of urban population in sub-Saharan Africa (in several of the countries of francophone Central Africa, for example, close to 50 percent of the population was in the major city or cities), it has more large cities and the highest total urban population than any sub-Saharan African country.

Urbanization is the progressive concentration of population in towns and cities. The process proceeds through an increase in the number of towns and also as a result of the increase in the size of individual towns. The essential feature is a steady increase in the proportion of urban dwellers in the population. Urbanization is a component of the process of modernization of the economy and society and it is a major factor that affects the re-distribution of population in any country. A major pointer to the fact that urbanization is happening in Nigeria is the rise in population of major cities in Nigeria such as Lagos, Abuja, Ibadan, etc. Some factors responsible for urbanization are:

1) Job Opportunities available in the urban areas
2) Marriage
3) Education
4) Security

Urbanization brings about rapid development of the country, as well as industrialization. However, there are also problems attached to the influx of people from the rural to the urban regions, such as adding pressure to the available facilities available to health and other facilities.

Figure 2.14: Urban Population of Nigeria (% of total)



Source: World Development Indicator

Thus, there has been a rapid increase in the urban population over the years. Because of some economic advantages of urbanization, such as increased labour force for the manufacturing and service sectors, it is important that there should be an effective management of the urbanization process.

CHAPTER THREE

EDUCATION AND SKILLS DEVELOPMENT IN NIGERIA

3.1 Introduction

Over the past decades, there has been rapid growth in the population of Nigeria, which has mounted so much pressure on the available resources of the country in providing public services, especially in the area of education. Nigeria ranked 103 of 118 countries in UNESCO's Education For All (EFA) Development Index (2015), taking into account universal primary education, adult literacy, quality of education and gender parity. Thus, there is need for major improvement in the education system in order to harness demographic dividend in Nigeria.

In Nigeria, education is the shared responsibility of the federal, state and local governments. There are three subsectors of the education sector. First is the basic (nine years) schooling comprising the primary and the junior secondary, second is the post-basic/senior secondary for three years, and finally the tertiary which is between four to seven years, depending on the course of study. The tertiary comprises the university and non-university, with the latter being categorized as polytechnics, monotechnics and colleges of education

Beyond the four walls of the classroom, education has to ensure that people are given vital skills and knowledge that can support their movement to industries and the corporate world, as well as find solutions to the problems of the society. Education and skills development is very crucial for the working population in building evidence and capacity for demographic dividend in Nigeria. Education at all levels must be given adequate investment in order to maximize the economic potential of the citizens of Nigeria. It is expected that tertiary education will have greater impact on economic growth than primary and secondary education (Oketch, McCowan and Schendel, 2014) while, primary school education determines the outcome of tertiary education level. Investing in education and skills for the young age is vital to human development and the preparation of a productive future workforce (UNDP, 2016).

An important pillar in harnessing demographic dividend in Nigeria is access to basic education. Education is not just literacy, it is also more than the accumulation of facts and learning to read and write. It is the overall development of an individual, aimed at producing middle-level and high-level manpower with the requisite skills and know-how needed to facilitate the society's drive to prosperity and growth. Furthermore, education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous, exploitative labor, sexual exploitation, promoting human rights and democracy, protecting the environment and influencing population growth. In Nigeria, 30 percent of children of primary school age (6-11 years) do not attend primary school and 46 percent of children of secondary school age (12-17 years) do not also attend secondary school (Multiple Indicator Cluster Study, 2016). Thus, to reap demographic dividend in Nigeria, adequate measures should be put in place to develop human capital, most especially in the area of education.

In order to harness demographic dividend in Nigeria, there has to be a change in the age structure, as well as the working population. There has to be an improvement in the quality of the labour force in terms of quality education and skill development. Despite the fact that education at all levels is important, tertiary education provides a better effect on economic growth of the country. Thus, in Nigeria, the National Policy on Education

(NPE) was formulated in order to improve higher education and skill development. This is because of the understanding that the level of development of the country depends largely on the investment on human resources. The NPE sets out to contribute to national development through high level relevant manpower, as well as acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the family, among several other objectives.

Universal Basic Education very wide base was introduced by the government in 1999 in Nigeria to provide free primary and secondary education for all. Furthermore, Distance Learning was considered by the previous governments in bringing an alternative means of delivering education to a larger population of students as well as meet demands for university admissions.

Despite the country's commitment to education, as well as its Vision 2020 in placing education at the heart of the development of Nigeria, there are a lot of challenges facing the educational system in Nigeria, some of which are:

1. Inadequate funding for education at the federal, state and local government levels. Even where funds are available, they may not be accessed by the agencies in charge of delivering services such as State Universal Basic Education Board (SUBEB).
2. The security situation in the country with cases such as the abduction of Chibok girls, and Dapchi girls is also a threat to the educational system in the country. These were perpetrated by some groups, especially in the Northern region of the country, and they have issued threats inhibiting the attendance of primary and secondary schools in the North.
3. Disparity in educational level and standard of education across the six geo-political zones and between the poor and the rich still remain a challenge in Nigeria.
4. Poor quality of education in primary, secondary and tertiary institution most especially in the provision of educational material and sustaining quality teachers. Textbooks and school materials are also in short supply in some areas. Poor infrastructure is also a reason why pupils sit on bare floors, or even under trees to learn. This ultimately leads to loss of interest in studying and adds to the phenomenon of out-of-school pupils.
5. Social and cultural barriers that hinders female children from participation which exists in some parts of the country, especially the Northern region.
6. The system of collecting comprehensive and relevant data for planning in the country is weak.
7. The habit of using children for labour, instead of enrolling them in schools.

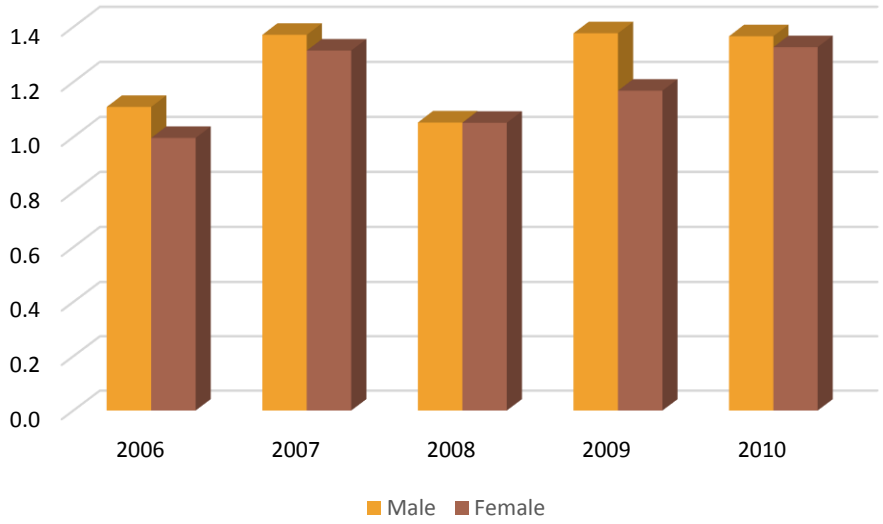
3.2 School Participation Status in Nigeria

3.2.1 *Pre-Primary Education*

Pre-Primary schooling is the education given to children before primary school level. In Nigeria, it comprises of day-care, kindergarten and nursery school. As at 2006, about 53 percent of male children were enrolled in pre-primary education while about 47 percent of female children were enrolled. In 2008 the gross enrolment both male and female stood at 50.03 percent However, the enrolment increases to 54.26 percent in 2009 for a

male child and fell to 46 percent for female children. Surprisingly, in 2016/2017, pre-primary enrolment dropped to 35.7 percent for male and 35.4 percent for female.

Figure 3.1: Gross Enrolment in Pre-Primary Education (million)

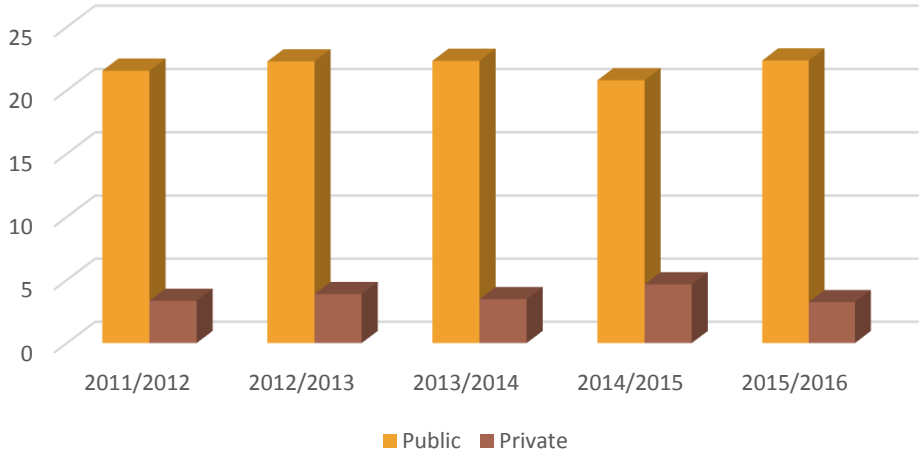


Source: Nigeria Digest of Education Statistics, 2010

3.2.2 *Primary Education*

The primary educational level in Nigeria involves six years of schooling for children between ages 6-11 years. Primary education is provided by both public and private sectors in the country. Figure 3.1 presents the enrolment in primary schools in both public and private owned primary schools in Nigeria. Figure 3.1 shows that larger proportion on primary school enrolment in the country was being taken care of by the publicly owned primary schools with less proportion in privately owned primary schools. The implication is that there still exist a wider gap in terms of provision of primary school education between public and private sector in the country. Be that as it may, a collaborative effort between the two sectors is needed to absorb the enrolment in the country.

Figure 3.2: Enrolment in Primary School by Ownership (million)

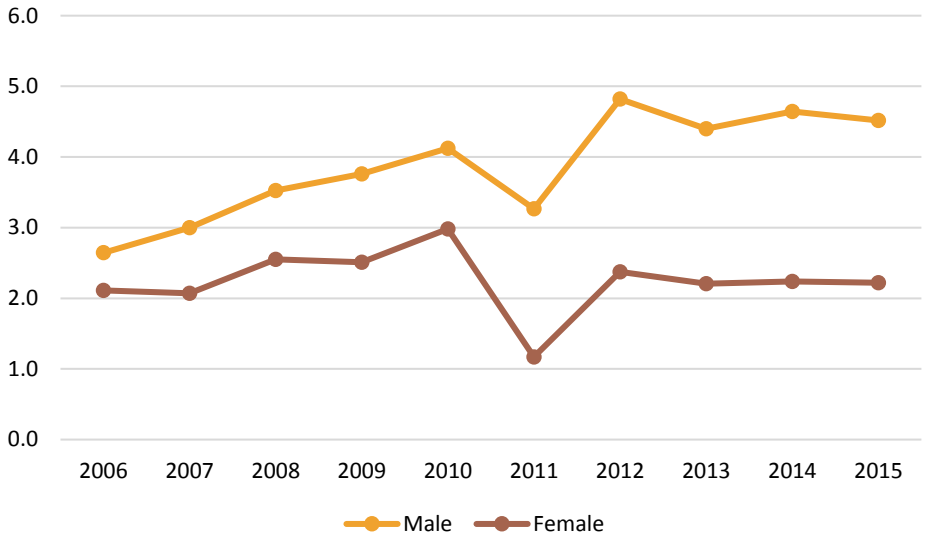


Source: Nigeria Digest of Education Statistics, 2016

3.2.3 *Secondary Education*

The next phase after the primary education is the secondary education. The Gross Attendance Ratio is the total number of students attending secondary schools- regardless of their age- expressed as a percentage of the official secondary school age-population. Figure 3.2 shows the gross attendance ratio for secondary school in Nigeria from 2007 to 2016.

Figure 3.3: Trend in the Secondary Schools Enrolment (million)



Source: Nigeria Digest of Education Statistics, 2010, 2016

The gross attendance ratio into the secondary schools irrespective of the official age has been on the increase over the years. Furthermore, the figure shows over the years GAR for males are higher than females counterpart.

3.2.4 Access to Tertiary Education in Nigeria

Tertiary education refers to the third phase of the academic system, as well as other post-secondary studies. It ranges from the universities, to the polytechnics, monotechnics as well as colleges of education . The demand for tertiary education in Nigeria has continued to rise. This is evidenced in the number of applications for tertiary education in the country. Access to tertiary education in the country has been hampered as very much less than 40 percent of candidates that applied for tertiary education gained admission. Table3.1 shows the number of applications and percentage of candidates that were given admission between 2010 and 2015.

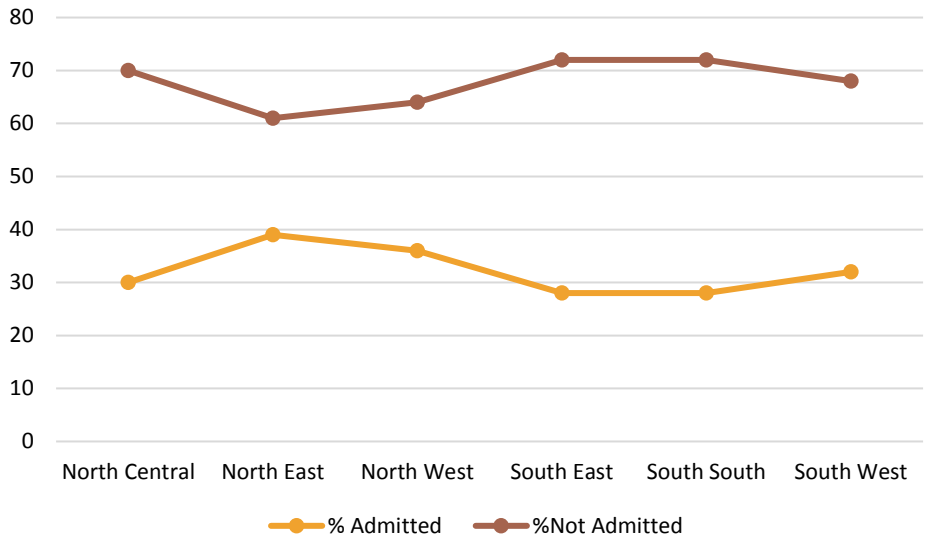
Table 3.1: Applications and Admissions into Tertiary Institutions

Year	Number of Applications	Number Admitted	% of Students Admitted
2010	1,513,940	423,531	28.0
2011	1,636,356	417,341	25.5
2012	1,632,835	447,176	27.4
2013	1,924,393	463,395	24.1
2014	1,785,608	437,704	24.5
2015	1,612,247	485,338	30.1

Source: National Bureau of Statistics/Joint Admission and Matriculation Board (JAMB)

Table 3.1 confirms the increased demand for tertiary education year-in-year-out in the country as number of applications continue to increase every year. However, only a limited percentage of applicants could access tertiary education. The proportion of students offered admission varies over the years with 27.98 percent being offered admission in 2010 while the proportion of those admitted fell to 25.5 percent in 2011. Furthermore, larger percentage of admission was recorded in the year 2015 with about 30 percent of the applicants being admitted. Yet, accessibility of tertiary education is germane to harnessing demographic dividend in the country. With the high demand for tertiary education in the country, government must come in to provide necessary infrastructure to cater for the increasing demand. Education is key to tapping of demographic dividend hence, the is onus on Nigerian government to formulate policies that ensure adequate access to tertiary education and provision of necessary facilities that guarantee quality graduates are produced Figure 3.4 shows the distribution of application and admission of candidates into public universities across geo-political zones in the country for the year 2015. It is evident that the percentage of those admitted are less than those not offered admission each except in the case of the North East.

Figure 3.4: Admission into Public Universities across Geo-Political Zones (2015)



Source: Joint Admission and Matriculation Board JAMB, 2017

3.3 Education Quality in Nigeria

3.3.1 *Quality of Education in Primary Schools in Nigeria*

Indicators such as quality of teachers in terms of qualified teachers, teacher pupil ratio and classroom/student ratio are useful measures of education quality. Quality education provides all learners with all capabilities required to become economically productive, develop sustainable livelihoods, contribute to peaceful and democratic societies and enhance individual well-being that will harness demographic dividend. It is important that there be investment in the educational system in terms of the employment of qualified and sufficient school teachers at all levels of education. In Nigeria, to ensure that quality education is dispensed in schools, the National Policy on Education has prescribed the Nigeria Certificate in Education (NCE) as the minimum teaching qualification.

With the introduction of UBE in Nigeria in ensuring free education for all, there is still need to invest more in education, based on the fact that there is so much pressure to ensure that a significant proportion of the population is enrolled in schools in the country. Thus, there has to be matching investments in education; particularly in the provision of adequate infrastructure to increase the rate of enrolment. This, to a large extent will reduce the cases where children have to receive their classes on bare floors or under the tree. Furthermore, this investment should involve the provision of academic materials such as textbooks and notebooks. Government at all various has continued to ensure education gets to every pupil in the country. Table 3.2 below shows the summary statistics of public primary schools in Nigeria.

Over the years, the total number of public schools have been on a decrease. This calls for attention in terms of building more schools for the rising population of children in the country. While the total enrolment in the country has continued to vary over the years, percentage of male enrolment continues to be higher than female enrolment except in the year 2013. In spite of increasing total enrolment of pupils in the country, the total

number of teachers decreased persistently from 2006 to 2009. However, the number of teachers started increasing from 2010 till 2013. The implication of this is that more manpower is now being made available to cater for the enrolment in the country.

Table 3.2: Summary of Public Primary school statistics in Nigeria

	2006	2007	2008	2009	2010	2011	2012	2013
Total Number of Schools	70,822	65,731	68,715	68,715	66,979	59,225	60,085	60,064
Total Enrolment	21,717,789	20,469,395	18,980,395	18,818,544	19,042,167	20,920,582	21,481,215	21,315,789
% of Male Enrolment	55	54	54	54	54	55	53	50
% of Female Enrolment	45	46	46	46	46	45	47	50
Total Teachers	439,330	285,968	198,756	130,040	519,854	528,289	533,224	536,231
% of Male Teachers	51	51	53	52	55	50	58	54
% of Female Teachers	49	49	47	52	45	50	42	46
Student Teacher Ratio	49.4	71.6	95.5	144.7	36.6	39.6	40.3	39.8

Source: Nigeria Digest of Education Statistics 2010, 2016

3.3.2 Quality of Education in Secondary Schools in Nigeria

The total enrolment into secondary school has been on the increase over the years. However, male enrolment has always been higher than female enrolment. Between 2006 and 2007, number of available teachers fell while it started increasing from 2008 till 2010. However, teacher/student ratio remains highly fluctuating from 2006 to 2010. It is highly recommended that the number of teachers employed should increase to cater for the increase in the enrolment into public secondary school in Nigeria.

Table 3.3: Summary of Public Secondary School Statistics

	2006	2007	2008	2009	2010	2011	2012	2013
Total Number of Schools	18,530	21,581	19,244	18,238	18,433	21,784	31,924	37,213
Total Enrolment	4,754,457	5,067,787	6,072,159	6,266,696	7,103,598	11,845,352	11,379,705	10,495,583
% of Male Enrolment	56	59	58	60	58	52	53	54
% of Female Enrolment	44	41	42	40	42	48	47	46
Total Teachers	166,463	118,725	154,961	153,503	229,561	530,786	529,424	780,067
% of Male Teachers	61	63	63	59	57	54	52	51
% of Female Teachers	39	37	37	41	43	46	48	49
Student Teacher Ratio	28.6	42.7	39.2	40.8	30.9	22.3	21.5	13.5

Source: Nigeria Digest of Education Statistics 2010, 2016

Another important measure of quality of education is the number of available qualified teachers in the school. Table 3.4 shows the numbers of qualified teachers in Secondary Schools in Nigeria between 2005 and 2010.

Table 3.4: Summary of Qualified Teachers in Secondary School by Qualification

YEAR	Total Teachers	Total Qualified Teachers	Proportion of qualified teacher to total number of teachers (%)
2005/2006	120575	93116	77.2266224
2006/2007	43986	41823	95.0825263
2007/2008	154961	145499	93.8939475
2008/2009*	0	0	0
2009/2010**	112840	42523	37.6843318

***So**urce: Nigeria Digest of Education Statistics, 2010*

Note: ** Only Public Schools Teacher and not all States disaggregated into Qualified and Unqualified.

**** No data available for 2008/2009***

Qualified Teachers are those with minimum requirements to teach. Over 77 percent of total number of teachers in secondary schools in Nigeria in 2005/2006 were qualified teachers while the ratio increased to 95 percent in the 2006/2007. As at 2009/2010, the ratio fell to 37 percent. This could account for poor quality education in the country. Harnessing demographic dividend in the country could be difficult if quality of education is not addressed and monitored. The poor quality of education in Nigeria is reflected in the fall in the proportion of qualified teachers employed in secondary schools. The National Policy on Education stated two objectives of secondary education which are: preparing recipients for higher education and preparing recipients for useful living within the society. However, if the education system is poor in terms of quality, these objectives may not be achieved.

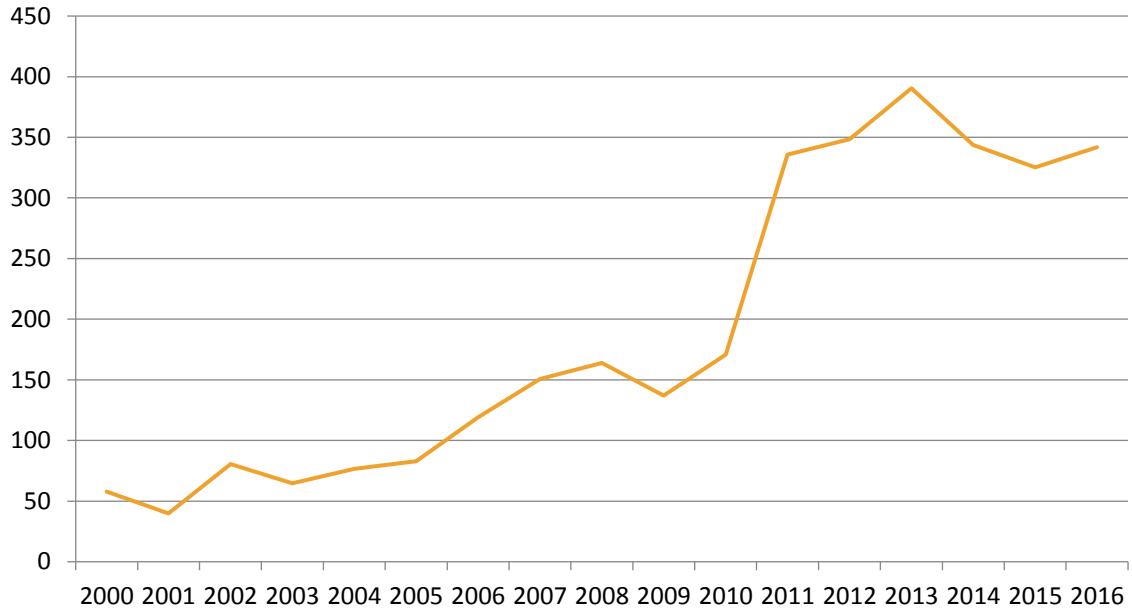
Despite the country's participations in all relevant international education fora, as well as her collaborations with development partners, it's important that increased investments be made in the education sector in order for her to harness demographic dividend. Furthermore, adequate investments in funding the Colleges of Educations as well as Teaching Institutes should be made so as to produce quality teachers.

3.4. Financing Education for Youth Development in Nigeria

Funding of education in Nigeria involves Federal, States and Local Government appropriation bills for recurrent and capital expenditure. Government spending on education cut across primary, secondary and tertiary education systems. While Local Government focuses on funding of primary education, State Government manages the funding of secondary school and Tertiary institutions and Federal Government funds mainly tertiary education in Nigeria. Over time, because of poor management and poor funding of primary schools, the Federal Government has placed funding of primary education under the management of Universal Basic Education Commission UBEC while State Universal Basic Education Board SUBEB link up with this commission for the funding of basic education programmes. Figure 3.5 shows the of government

expenditure on education from 2000-2016. In 2015, the Federal Government of Nigeria allocated 67.3 billion Naira on total personnel cost for UBE while 67.3 billion Naira was allocated to total recurrent and 4.3 billion Naira for total capital.

Figure 3.5: Trends of Government Spending on Education



Source: CBN statistical Bulletin, 2016

Government expenditure on Education in Nigeria has been on the increase over the years. However, the expenditure started falling after it peaked at ₦390.42 million in 2013. The sudden fall in government expenditure in 2014 can be attributed to the economic recession experienced in the country in that period as a result of fall in government revenue on oil. However, it started gaining momentum in 2015 with an increase from ₦325.19 million in 2015 to ₦341.88 million in 2016.

3.5. Government Policies on Education

The need to improve quality of education and ensure accessibility of quality education in Nigeria has been enshrined in various policies formulated by the Nigerian government. Given the fact that education is key to harnessing demographic dividend in the country, series of policies have recognized to promote contribution of education on economic development of Nigeria. In an effort to improve and guarantee quality of education in the country, series of policies and other related actions have been formulated and instituted to promote and consolidate the quality of education in Nigeria. Among the policies are; the passing into law free Universal Basic Education Act, 2004, launching of National Action Plan (NAP) for the implementation of Universal Basic Education to achieve Education for all (EFA) in 2006 and curriculum development in 2007. Also, another reform initiative around this time was the signing of Memorandum of Understanding (MoU) in May 2006 on the maiden edition of the UNESCO National Education Support Strategy (NESSS) 2006-2015 between Nigeria and UNESCO.

National Policy on Education (NPE) was formulated in order to improve higher education and skill development. This is because of the understanding that the level of development of the country depends largely on the investment on human resources. The NPE sets out to contribute to National development through high level of relevant manpower, as well as acquisition of both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the family and society, among several other objectives.

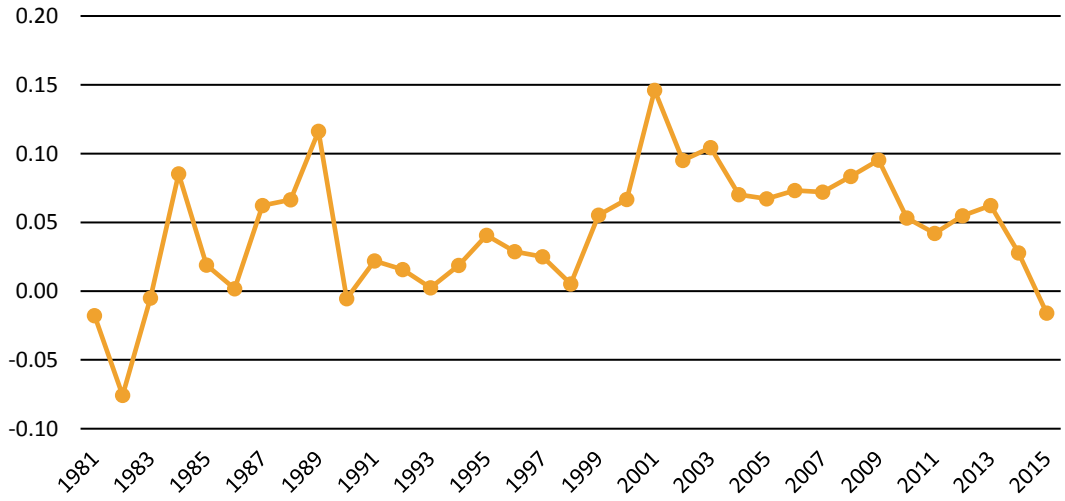
CHAPTER FOUR

ECONOMIC GROWTH, DECENT JOBS AND EMPLOYMENT

4.1 Economic growth and development in Nigeria

Between 1981 and 1984, Nigerian economy has consistently recorded positive economic growth rate averaging 4.5 percent per annum. These periods correspond to the periods the country experienced windfall gain from oil price. During the period 1987, there was a shock to economy due to changes in the economic structure brought up by introduction of some macroeconomic policies such as structural adjustment programme. GDP growth rate remained positive until late 2015 when growth rate was negative due to drastic fall in oil price in the world market. Figure 4.1 shows the trend of GDP growth rates of Nigeria. There are still windows of opportunities for Nigeria to boost the growth and development of the economy through diversification. Growth rate of non-oil between 2003 and 2016 is higher than growth rate of oil sector. The implication of this is that, it is high time the economy was diversified with the proceeds from oil sector. Evidence shows that oil sector creates less employment opportunities relative to agricultural sector hence, harnessing demographic dividend in the country calls for more employment generation to absorb the working age population in the country.

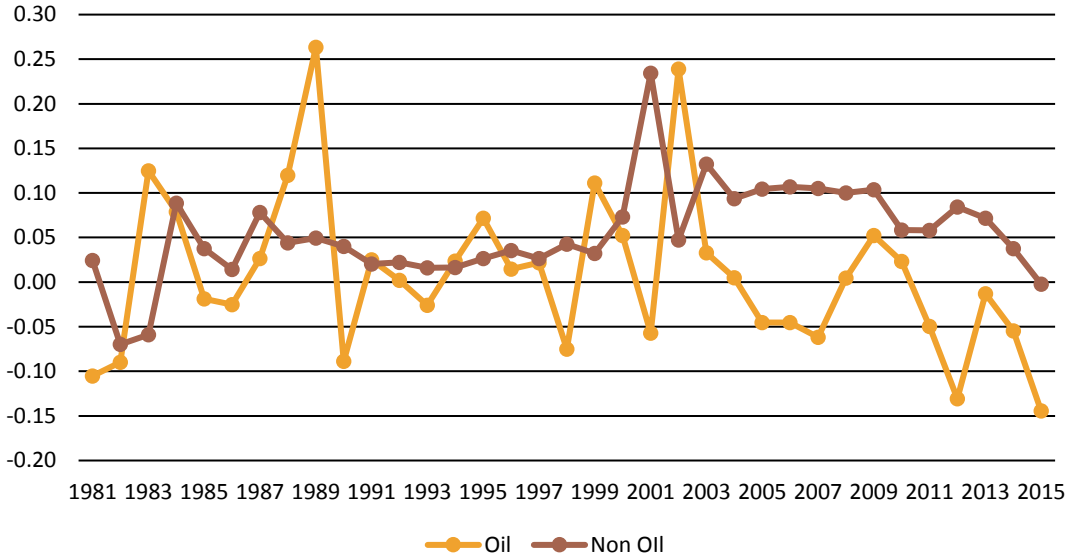
Figure 4.1: GDP Growth Rate From 1981-2015



Source: Drawn from Statistical Bulletin, Central Bank of Nigeria (CBN), 2016

Figure 4.2 shows the growth rate of Oil and Non-Oil sectors from 1980 to 2016. Over the years, growth rate of oil and non-oil sectors continue to be at logger-head. In the 1980s growth rate of oil sector was higher than non-oil sector. However, in the early 2000s, the story has changed as non-oil sector growth rate was higher than oil sector. The implication is that Nigeria government should continue with its diversification plan. In other words, other promising sectors such as agriculture needs more attention from both the public and private sectors to reduce the country over-dependence on the oil sector.

Figure 4.2 Growth Rate of Oil and Non-Oil to GDP from 1980-2016



Source: Drawn using data collected from *Statistical Bulletin*, Central Bank of Nigeria (CBN), 2016

4.2 Diversification of Nigeria's Economy to create more jobs

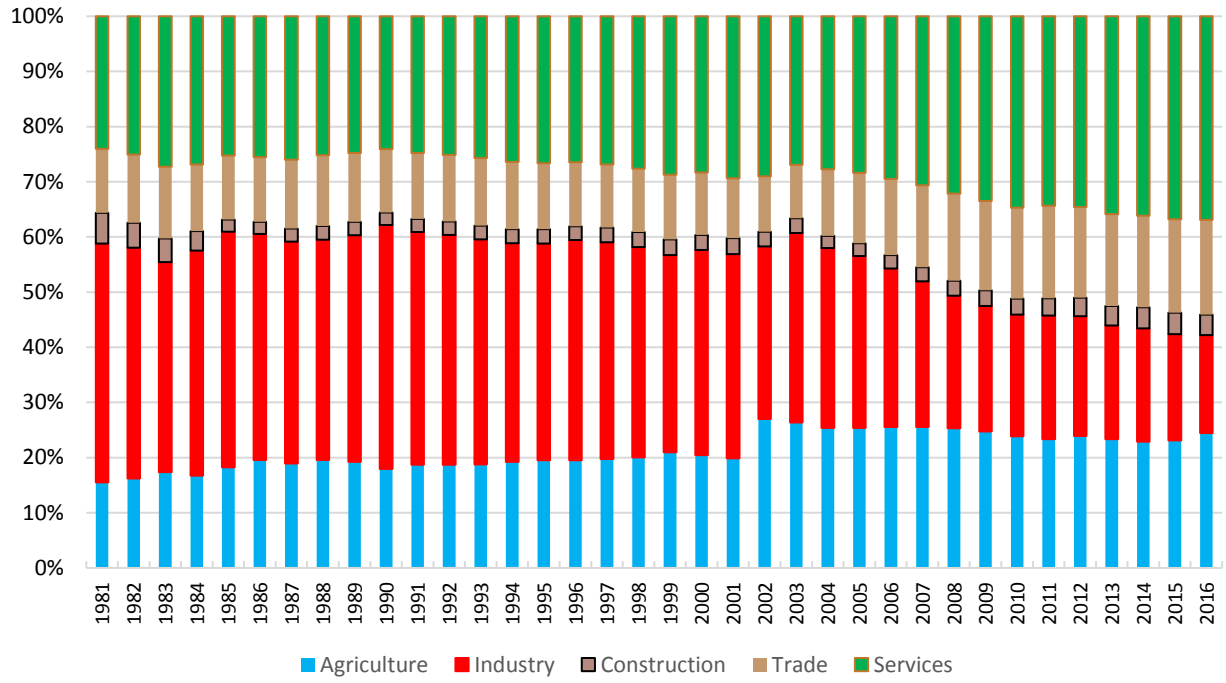
At the moment, there are several opportunities for Nigeria to diversify its economy. The country is rich in human and material resources. The country is faced with high working age population and abundant natural and mineral resources that could be utilized to develop other sectors alongside with the oil sector. Recently, Nigerian youths are beginning to come up with some entrepreneurship skills most especially in the service sector. Proper diversification of economy could increase the number of small and medium scale enterprises without inhibiting the opportunities for large scale enterprises to grow and expand. Thus leading to a situation where a larger proportion of Nigerian youths could become job creators rather than job seekers.

There are potentials for agricultural sector to boost both the export base and revenue-base of the economy. At the moment, the Nigerian agricultural sector is backward in terms of operation mechanisms. The sector is highly labor-intensive hence, there is need for urgent and persistent intervention from both public and private sector to divert huge investment to the sector. Evidence has it that agriculture is capable of absorbing a larger proportion of the country's labor force thus reducing the unemployment rate and putting the country on the path of tapping and harnessing demographic dividend. Figure 4.3 shows the percentage sectoral contribution to the country's GDP.

Furthermore, string fiscal and monetary policies are needed to be put in place to attract foreign investors into the economy. While doing that, government needs to collaborate with private sector to improve the state of infrastructure in the country. Recently, efforts by the Federal Government to ensure adequate provision of transportation networks in the country should be strengthened. With different federal roads are under construction across the nation, such efforts should be replicated across other infrastructure ranging from information and communication technology to power supply, among others. In the same vein, price level should be made to vary within a reasonable boundary.

alsoBesides, a macroeconomic policy that will continually strengthen Naira in the foreign market should be formulated and implemented.

Figure 4.3: Percentage Sectoral Contribution to GDP from 1981-2015



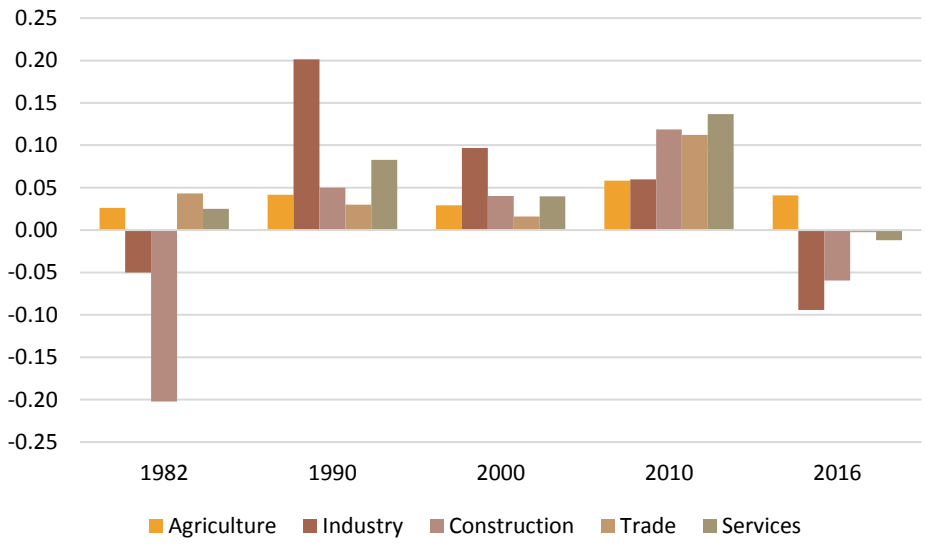
Source: Drawn from Central Bank of Nigeria (CBN) Statistical Bulletin, 2016

Figure 4.3 shows that percentage contribution of industrial sector to GDP was higher than other sectors until 2005 when the contribution of the sector began to fall relative to other sectors except trade sector. In the same vein, the contribution of service sector to the country's GDP was a huge benefit to the country as the sector's contribution kept increasing. The implication of this is that, Nigeria economy needs a well-coordinated and consolidated macroeconomic policies that can accelerate diversification in order to rescue the economy. Figure 4.4 presents the sectoral growth rates from 1982-2016. In 1982, agricultural and industrial sectors experienced negative growth while other sectors recorded positive growth. The same scenario repeated itself in 2016. However, growth rate of service sector has been encouraging over the years until 2016 when the sector recorded negative growth. In the same vein, trade sector performance has improving over the years until 2016. In the year 2016, the country started experiencing its economic downturn, this could be the reason while virtually all the sector except the agriculture sector recorded negative growth in 2016.

In spite of the different challenges and bottlenecks in setting up business, possibilities of entrepreneurship development to generate employment abound. In recent times, Nigerian youths are beginning to take keen interest in entrepreneurship. Youths are found participating more in some entrepreneurial activities skills such as entertainment and establishment of small and medium scale enterprises (SMEs) SMEs are capable of expanding employment opportunity in the country hence, necessary assistance is needed

by government in support of SMEs, in addition to protecting them from foreign competition.

Figure 4.4: Sectoral Growth Rates, 1982-2016



Source: Drawn from data obtained from Central Bank of Nigeria (CBN) Statistical Bulletin, 2016

4.3 Prospects of Entrepreneurship Development in Employment Generation in Nigeria

Establishment of Bank of Industry to support SMEs in terms of provision of finance and credit facilities shows that the Nigerian government is on the road of harnessing demographic dividend through employment generation. From private sector end, there are existing efforts to promote SMEsand increase employment opportunity in the country. Good examples from the private sector are popular Tony Elumelu Foundation (TEF) project promoting the development of 10,000 SME operators across Africa in 10 years, MTN Project Fame, Building Entrepreneurs Today (BET) by Diamond Bank Plc There are other windows of opportunity made available by the apex bank in the country, the CBN. At the CBN, there are the various monetary tools that are currently in use to encourage SMEs in accelerating employment generation.

4.4. The roles of Micro Small and Medium Enterprises (MSME) and Informal Sector in Providing Decent jobs

Evidence have it that micro small and medium enterprises and the entire informal sector are among the critical success factors for engineering economic growth and development. The informal sector in the Nigerian economy needs much support from government in terms of basic infrastructure for their potentials to be fully utilized. At the moment, the informal sector operators in Nigeria are greatly affected by activities in the

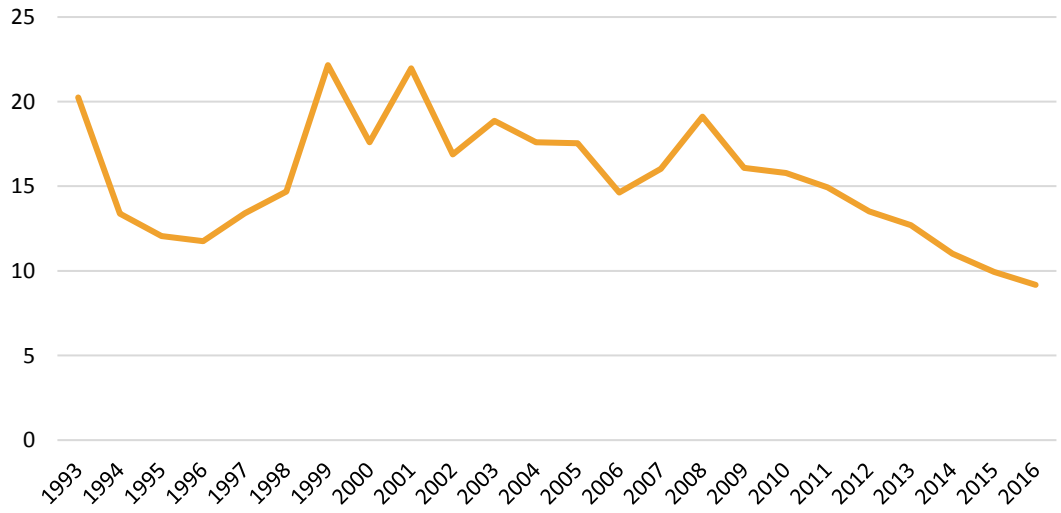
world market due to the fact that a significant proportion of their inputs are imported hence, they are prone to shocks in the world market.

Following the liberalization of the economy in 1985, different efforts have been put in place to ensure that SME triumph in the economy. Establishment of Bank of Industry among others are targeted at improving credit facility to SME. SME and informal sector in the economy stand a greater chance of absorbing the bulging population of youths hence turning them to job-creators rather than being job-searchers. It is not a doubt that SME and the informal sector have the capacity of creating employment therefore, government through its various regulatory agencies and institutions, needs to mandate them to divert their investment into this sector. At the present moment, access to credit facility is difficult for them as , some of them can hardly afford the rate of interest on loans procured. Be that as it may, concessionary interest rates are needed to revitalize this sector and to enable the sector live up to its potential of employment generation. Currently, the inflation rate is on increasing trend, this calls for urgent macroeconomic policy to arrest the inflation rate.

4.5 Government Expenditure as a Percentage of GDP

The extent to which government spends in the economy contributes to the economic growth of such economy. Nigerian government expenditure as a percentage of the country's GDP fell between 2010 and 2016. Harnessing demographic dividend may be hampered if government fails to carry out some productive spending in the economy. Figure 4.5 shows the trend of government expenditure as a percentage of GDP in Nigeria from 2010 to 2016.

Figure 4.5: Government Expenditure as a Percentage of GDP



Source: Drawn from Central Bank of Nigeria (CBN) Statistical Bulletin, 2014, 2016.

Figure 4.5 shows that government spending as a percentage of GDP has been unstable over the years. However, the proportion persistently fell from 2010 till 2016. Harnessing demographic dividend in the country calls for huge investment from the part of government on education, health, skills development and other aspects of human capital

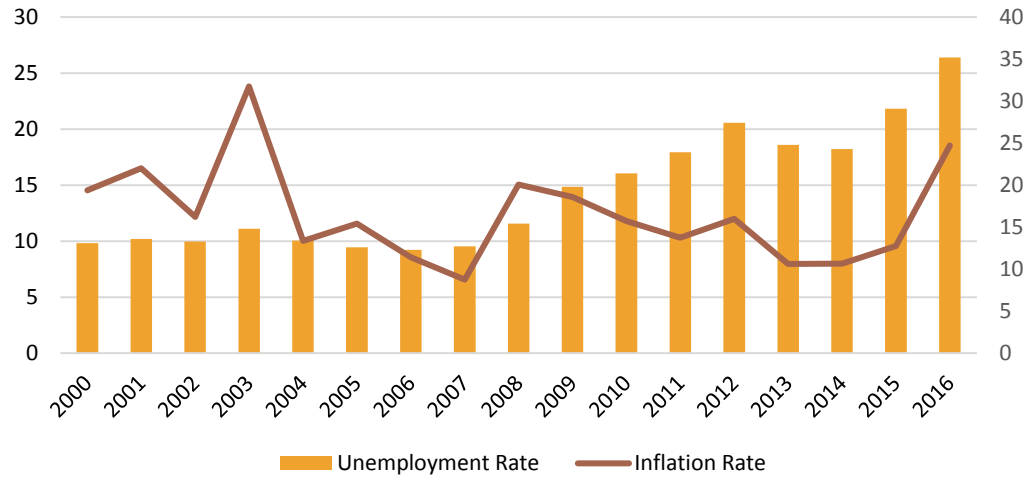
development in order to fully utilize the potential of working age population in the country. At the same time, the government of Nigeria needs to devote huge amount of resources to research and training institutes in the country and other related sector to boost and improve technological backwardness of the country.

4.6 Unemployment Rate and Inflation Rate in Nigeria

Overtime, the Nigerian economy has been plagued with unstable rate of inflation and this has continued to generate devastating effect on the economic growth of the country. Price stability is among the macroeconomic objectives of the country, but however, unstable price level could affect the capacity of various sectors to generate decent employment opportunity. Figure 4.6 shows the trend of inflation rate in Nigeria from 1981 to 2015. During this period, the highest rate of inflation stood at 76.8 percent in the year 1994. Coincidentally, this was the period the country was under military rule. The macroeconomic policies in operation could not arrest the inflation rate thus leaving the country with no choice than facing it high rate of inflation. However, inflation sharply dropped after 1994, the rate stood at 0.2 percent in the year 1999 coincidentally, this was a great moment and turning point in the political history of the country. The country returned to democratic system of government in 1999 after being under military regime for years. Since then, inflation rate has persistently been lower than what was recorded in the 1994. The rate was relatively stable and stood at 8 percent between 2012 and 2013. Ever since then, the inflation in Nigeria continues to increase.

Economists argued that there is trade-off between unemployment rate and inflation rate, in other words, higher unemployment rate grants an economy with opportunity of low inflation rate and vice- versa, all things being equal. However, this is not a case in Nigeria economy. Unemployment rate and inflation rate exist side-by-side. The two macroeconomic variables move in the same direction denoting a problem called stagflation. Harnessing demographic dividend under this condition may prove unrealistic hence, there is need for quick intervention in terms of macroeconomic policies (fiscal and monetary policies) to address the situation. Figure 4.6 shows the trend of unemployment rate and inflation rate in Nigeria from 2000 to 2016.

Figure 4.6: Trend Unemployment Rate and Inflation Rate

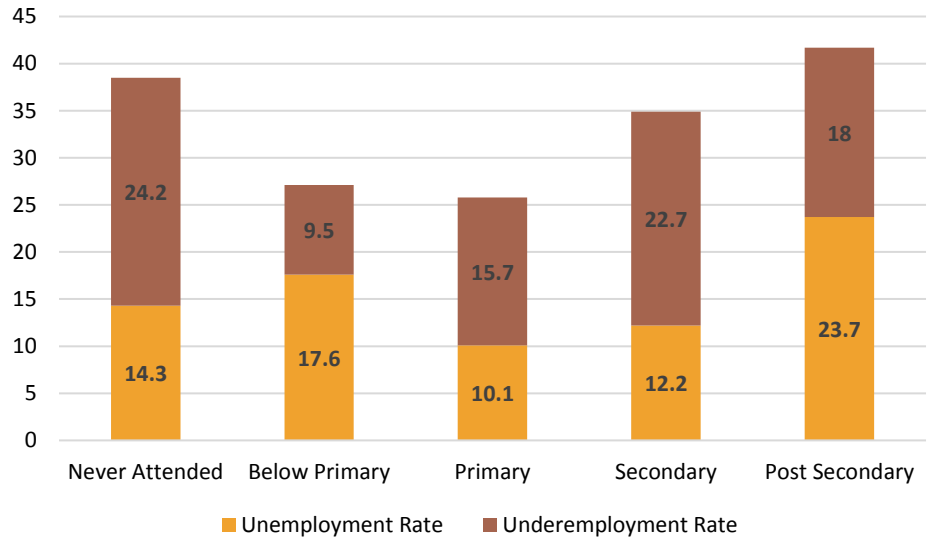


Source: Data sourced from Central Bank of Nigeria (CBN) Statistical Bulletin, 2016

4.7 Unemployment and Underemployment Rate across Education Categories, 2016

Figure 4.8 presents unemployment and underemployment rate across education categories in Nigeria in the year 2016. Unemployment rate in 2016 is more pronounced among Nigerians with post-secondary education while underemployment rate is higher among those who never attended school. This has greater implication on harnessing demographic dividend in the country. With high rate of unemployment among those with post-secondary education shows that potentials of Nigeria labor force are yet to be fully utilized. Hence, string and coordinated efforts in terms of policies are needed from government to reduce the unemployment rate in the country.

Figure 4.7: Unemployment and Underemployment Rates across Education Categories, 2016



4.8 Unemployment and Underemployment Rates Across Age-categories, 2016

Figure 4.8 shows the unemployment and underemployment rates in year 2016. The figure shows that larger percentage of Nigerian that are unemployed and underemployed falls within the age category of 15-24 years. This is among essential age categories that could facilitate demographic dividend in the country. Unemployment constitutes bane to harnessing demographic dividend. Addressing the menace of unemployment most especially among the working age population will put the country on the path of harnessing demographic dividend.

Figure 4.8: Unemployment and Underemployment Across Age-categories, 2016

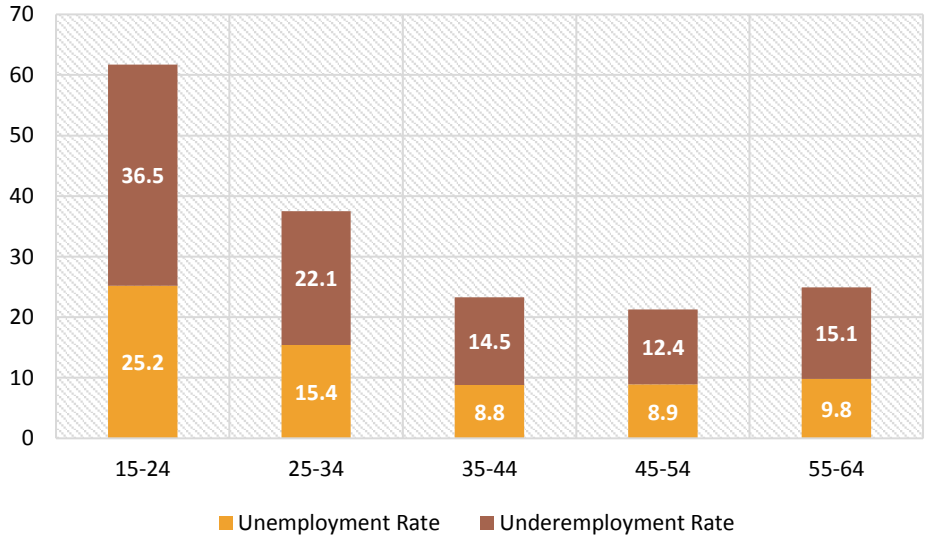
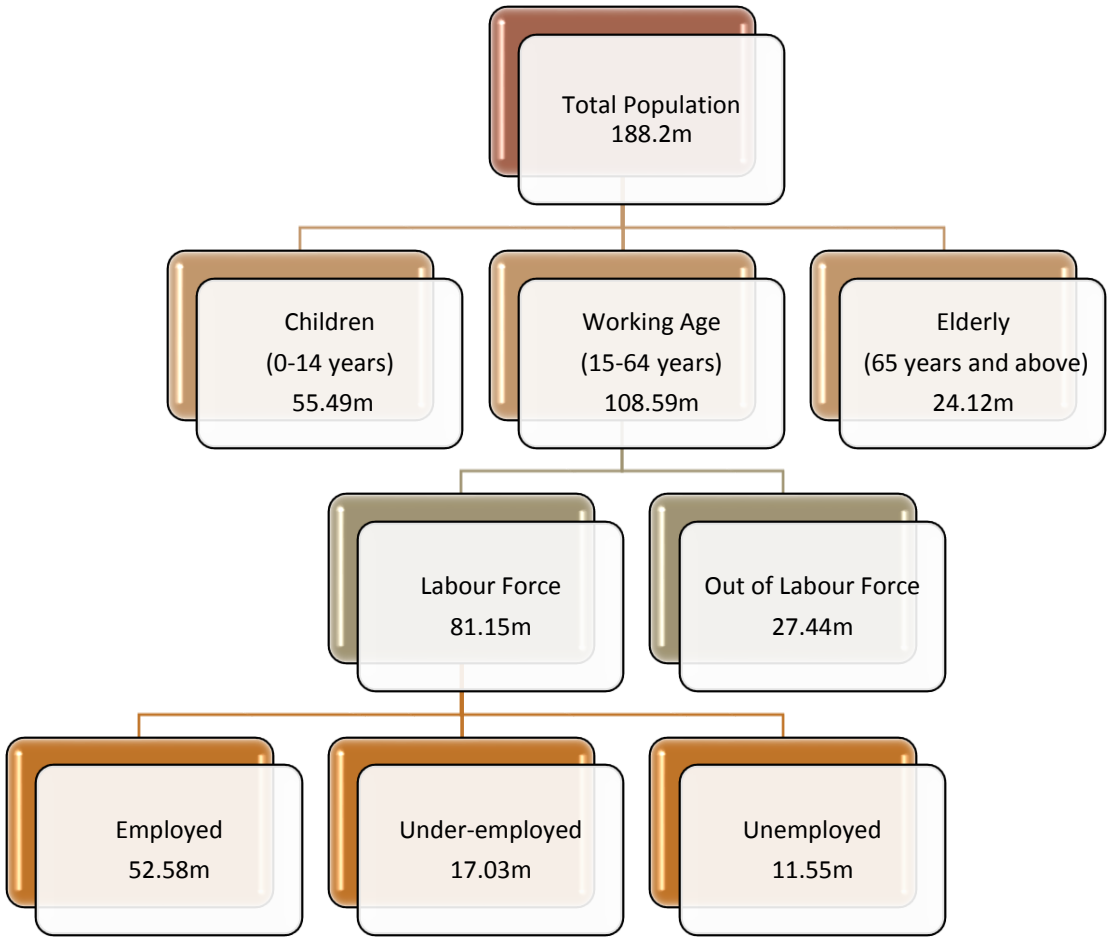


Figure 4.9: Year 2016 Total Population and Employment Structure



CHAPTER FIVE

GOVERNANCE AND ACCOUNTABILITY

5.1 Governance and Institutional Framework for Harnessing Demographic Dividend

In most developing countries, economic growth hardly translates into economic development. This is a similar case in Nigeria. Among the factors responsible for this; are poor governance and poor institutional framework in the country. Government is directly responsible for installation of sophisticated regulatory measures to administer the economy. In the absence of this, it is inevitable for growth not to translate into development. Good Governance is the arrow head of the critical success factors for harnessing demographic dividend. Hence, the ability of governing institutions to respond to people's expectations through credible policy commitments is crucial for a country in achieving long-lasting economic and political progress (African Economic Outlook, 2017). Demographic Dividend is greatly affected by dynamism in the population structure of the economy. Hence, government policies on demographic, economic and social institutions are germane to achieving demographic dividend.

Demand for good governance has continued to rise in the recent times in Nigeria due to rising rate of terrorism, violence, corruption, abuse of public offices and other challenging forces whose effects are enormous on human lives. Good governance is a decision-making process that guarantees compliance and administration of policy in accordance with public demand. Among the public requirements or demand are education, security, health facilities and so on. Government decisions and policies on public demand just listed are germane to achieving demographic dividend. The Africa Union Roadmap on demographic dividend opines that beyond the simple increment in the number and share of working-age population, the development and implementation of sound policies in education, health, including family planning and the creation of an enabling macroeconomic environment that facilitates job creation and access to decent employment would ensure increases in the productive workforce and lead to higher growth and rising income per person

Demographic Dividend most especially the first demographic dividend is a potential benefit and opportunity an economy enjoys when a larger proportion of its population is within the productive working age. With the growing rate of youth population in Nigeria, Nigeria Roadmap suggests that there is a significant potential for economic transformation. However, such potentials would be easy to tap in an economy where security of lives and properties is guaranteed, unemployment rate is on the down- turn, input to human capital development such as education and healthcare facilities are well-designed and implemented and most importantly, policy makers' interests are people's-welfare-oriented. Recent survey of opinion on public demands by Afro-barometer 2014/2015 shows that unemployment remains the most cited issues and is among the public demand that need quick government intervention in Nigeria. Unemployment rate in Nigeria has been on an increasing rate between 2014 and 2016. On average, unemployment rate in Nigeria stood at 24.95 percent in 2014 and increased to 26.75 percent and 37.75 percent in 2015 and 2016 respectively (National Bureau of Statistics, 2017).

5.2 Nigeria's rating on Various Governance Indicators

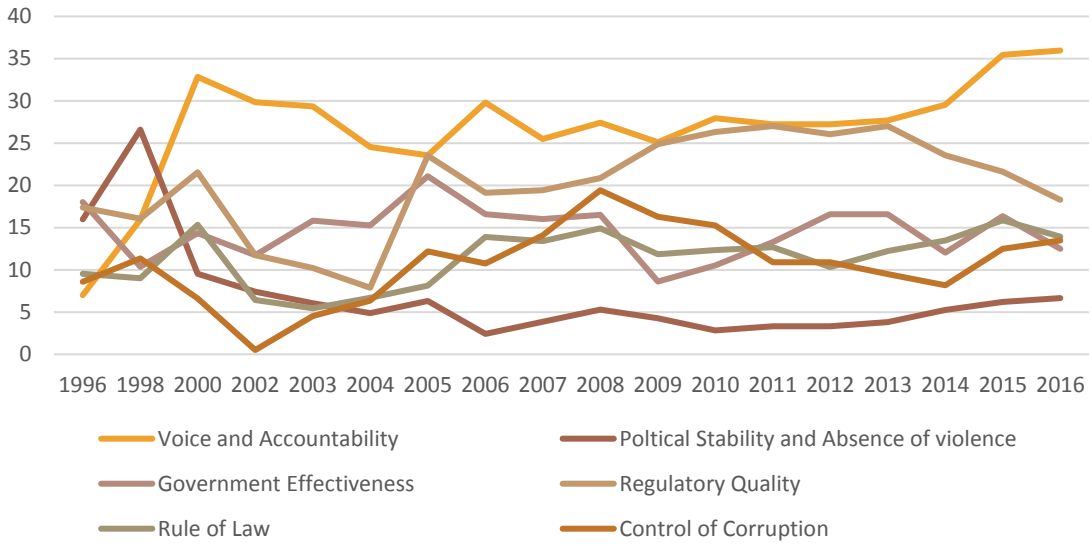
Recently, some indicators have been constructed to measure the quality of good governance. According to World Governance Indicators, there are six indicators upon which quality of good governance can be assessed. The indicators include voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law and control of corruption. The tables vividly and succinctly describe the indicators.

Table 5.1: Description of Worldwide Governance Indicators

Indicators	Descriptions
Voice and Accountability	This covers and measures the degree at which opinions, views and participation of citizens are articulated and felt in government, as well as the extent to which citizens enjoy their rights of freedom of expression and freedom of association
Political Stability	This covers the chances of destabilization and deterioration in government due to violence, civil unrest and unconstitutional take-over of government
Absence of Violence/Terrorism	This captures the prevalence of terrorism, violence and other acts that are capable of threatening human lives and properties in the country.
Governance Effectiveness	This covers the effectiveness, efficiency and value-for-money of public services as well as the extent to which government is committed to formulation and implementation of policies in the country.
Regulatory Quality	This measures the extent to which government formulates and implements policies that motivate and promote private establishment and also strengthening public-private sector relationship and ensure effective regulation of various aspects of government.
Rule of Law	This captures the extent to which laws are abided with and its supremacy on citizens and as well as the extent to which citizens enjoy their inalienable and fundamental human rights.
Control of Corruption	This captures the extent to which corruption is controlled and mitigated in the country

The percentile rank of each country is based on what each country scores regarding each indicator. The percentile rank among all countries ranges from zero (lowest) to 100 (highest) rank. For example, a percentile rank of 13.46 percent for control of corruption for Nigeria in 2016 shows that in the year 2016, Nigeria was ranked 13.46 percent on control of corruption among other countries examined. Figure 5.1 presents the percentile rank for various worldwide governance indicators presented in table 5.1a for Nigeria from 1996 to 2016.

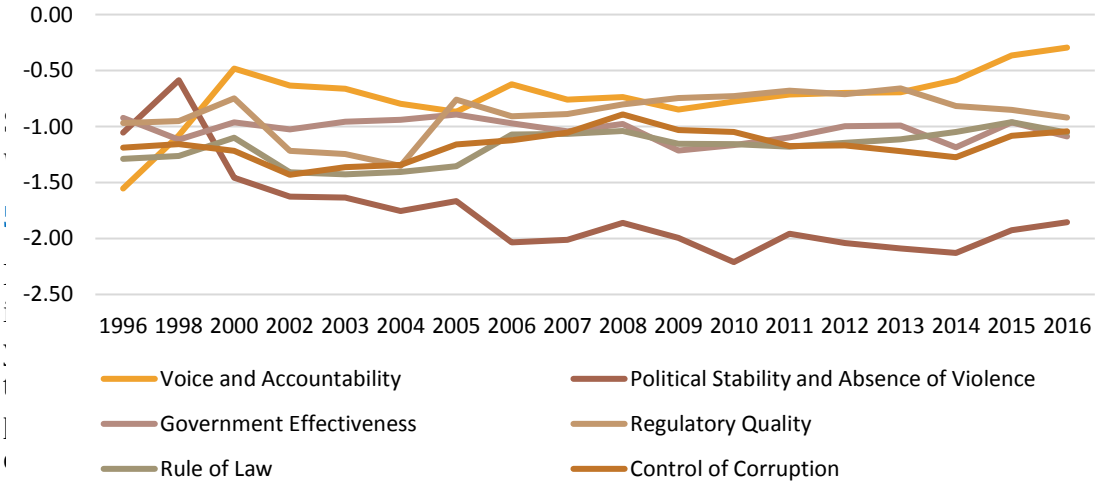
Figure 5.1a: Percentile Rank of Nigeria in Worldwide Governance Indicators (WGI)



Source: The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

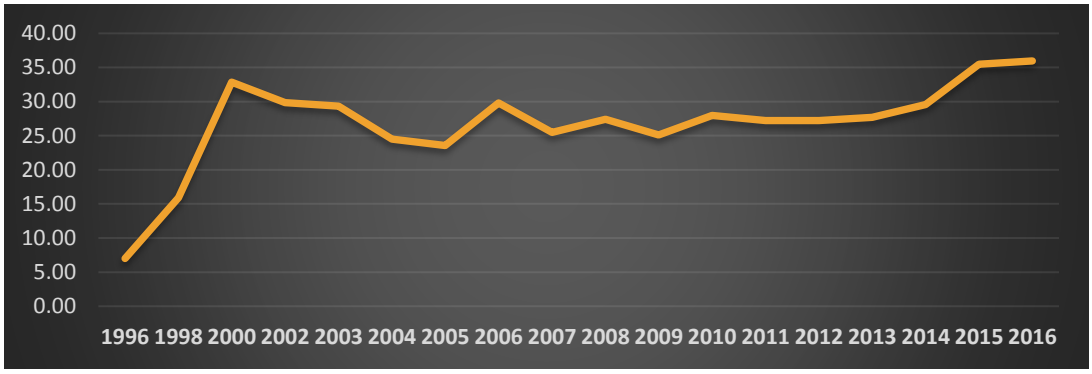
The corresponding estimates for the indicators are presented in table 5.1b. The estimate of governance indicators ranges from approximately -2.5 (weak) to 2.5 (strong) governance indicators.

Figure 5.1b: Estimates of Worldwide Governance Indicators (WGI) for Nigeria



government institutions to hold political office holders responsible and accountable to the populace has further enhanced accountability in the country. Example of such institutions include Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices and Other Related Offences Commission (ICPC). Figure 5.2 shows the trend of rank of Nigeria on voice and accountability from 1999 to 2016.

Figure 5.2: Nigeria's Percentile Rank on Voice and Accountability

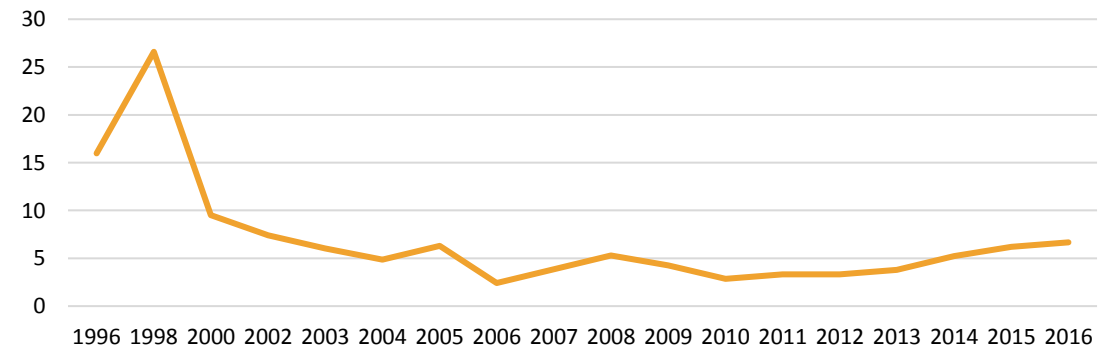


Source: The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

5.3 Political Stability and Absence of Violence

Between 1996 and 2016, Nigeria has persistently been ranked lowest in political stability and absence of violence/ terrorism. This to some extent complies with realities in the country. The implication of this on achieving demographic dividend is huge. Increase in incidence of violence and terrorism attacks and other forms of political instability are capable of scaring away both the present and potential investors hence, reducing the opportunities of employment provision in the country. Over the years, Nigeria has consistently been faced with different forms of violence and terrorism imbroglio. This has a greater effect on harnessing demographic dividend in the country due to its devastative effects on population structure. The devastating effects of Boko Haram in the North-East, Niger-Delta Avengers in the Niger-Delta region on lives and properties will continue to ring bell in Nigerian ears. Larger percentage of able hands in the North-East are currently displaced due to terrorism attacks while huge government resources are being gulp up. The trend of the rank continues to fall which implies that Nigeria as a country has been facing series of political imbroglios and violence in the country. Figure 5.4 below shows the percentile rank of Nigeria on political stability and absence of violence.

Figure 5.4: Percentile Rank of Nigeria on Political Stability and Absence of Violence

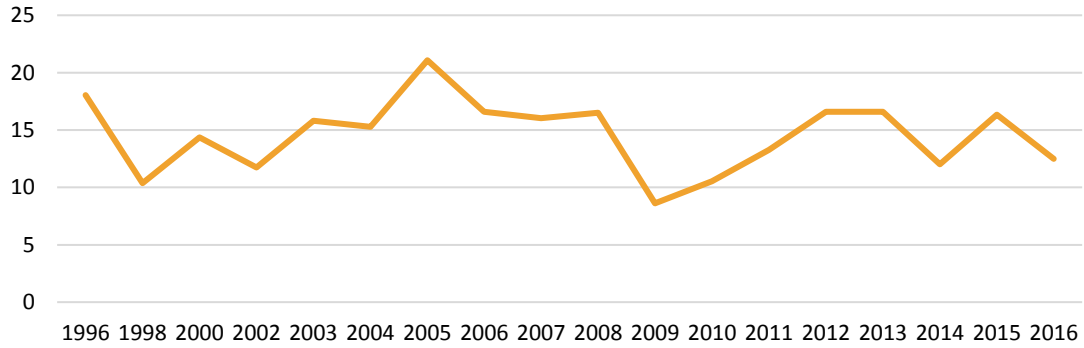


Source: The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

5.4 Government Effectiveness

The Worldwide Governance Indicators shows that rank of Nigeria in terms of government effectiveness has remained unstable over the years. Performance of Nigerian government on its effectiveness measured in terms of effectiveness, efficiency and value-for-money of government policies formulation and implementation as well as the extent to which government creates enabling environment for private sector development has continuously been ranked between 10 to 25 percentiles. The implication of this on harnessing demographic dividend in the country is catastrophic. Necessary policies are needed to be put in place to create enabling environment that could woo foreign investors into the country hence, increasing foreign direct investment expanding the net of job creation for the ever-increasing population of youth in the country. Effectiveness of such policy should cut-across every facet of government ranging from political, economic and social to demographic policy. Figure 5.5 shows the trend of rank of Nigerian government on governance effectiveness-an indicator for good governance by worldwide governance indicator.

Figure 5.5: Percentile Rank of Nigeria on Government Effectiveness

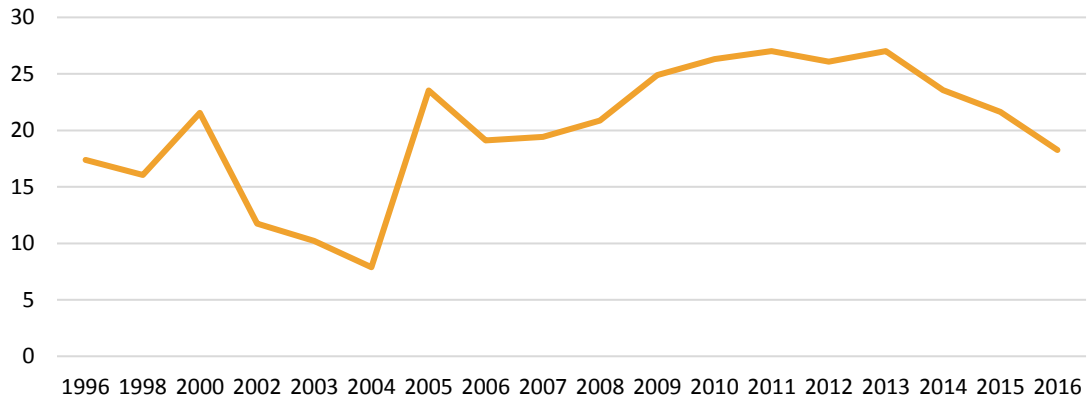


Source: The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

5.5 Regulatory Quality

The percentile rank of quality of regulation in the country by Worldwide Governance Indicators shows that at some points in time there were loopholes in the regulatory framework of the country hence, the country's ranks were lower during these periods. Furthermore, the rank has persistently been lower till 2016. The effect of loopholes in the regulatory framework of the country is capable of arresting regulatory institutions hence leading to regulatory capture of the regulators. Quality of regulation is germane to harnessing demographic dividend in the country as it is capable of ensuring and fostering public-private partnership agreement and tapping the potentials of bulging population of youths in the country. At the moment, there are institutions in place to achieve quality regulation and promote quality of goods and services produced by both the public and private sectors. Establishment of Standard Organizations of Nigeria (SON), National Agency for Foods and Drugs Administrative Control (NAFDAC) and ServiCom Desks in all government's parastatals to mention a few has been geared towards performing regulatory roles in their respective areas of operation . Figure 5.6 shows the percentile ranks of Nigeria on regulatory quality from 1996 to 2016.

Figure 5.6: Percentile Rank of Nigeria on Regulatory Quality by WGI

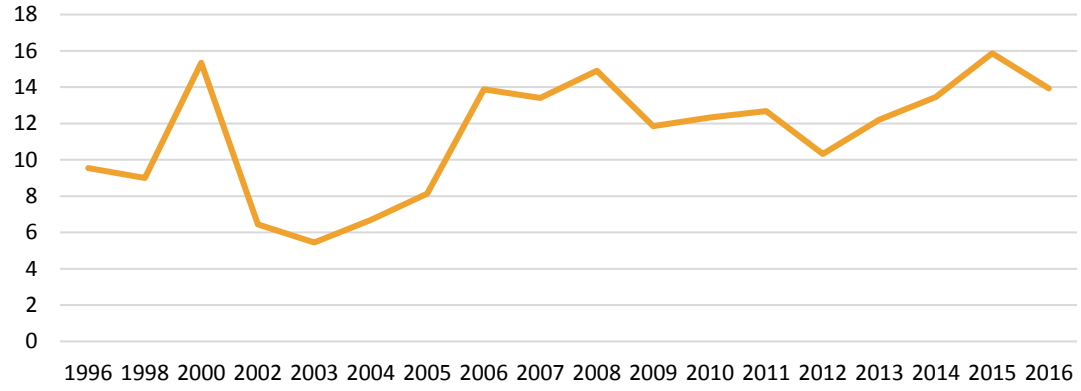


Source: The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

5.6 Rule of Law

According to A.V Dicey (Year?), rule of law is built on three tenets- supremacy of the law, equality before the law and existence of fundamental human rights. It is a concept within the democratic system of government. Year 1999 witnessed the turning point of the country changing from military government to civilian and democratic system government. Since that time, an amended written constitution has been put in place to guarantee human rights and smooth running of government. Also, popular general elections had become a medium through which the populace elects its representatives into political offices. Adherence to rule of law is a panacea to political stability which, in turn, is crucial to the formulation and implementation of policies that are essential to harnessing demographic dividend in the country. Over the years, the Nigerian government has been faced with some irregularities in general elections which in turn have brought the country into political instability. However, in recent times, string efforts have been directed towards ensuring free and fair election in the country. The last concluded general elections and attitude of immediate-past executive president in handing-over to the new executive president show that Nigeria as a country is becoming matured in handling its political affairs. Be that as it may, figure 5.7 shows the trend of percentile ranks of Nigeria on rule of law. At the inception of democratic system of government in 1999, the country was just recovering from the shocks of military government. During this period, Nigeria's ranks on rule of law were lower in those periods. However, over time, the rank has improved in value.

Figure 5.7: Percentile Rank of Nigeria on Rule of Law

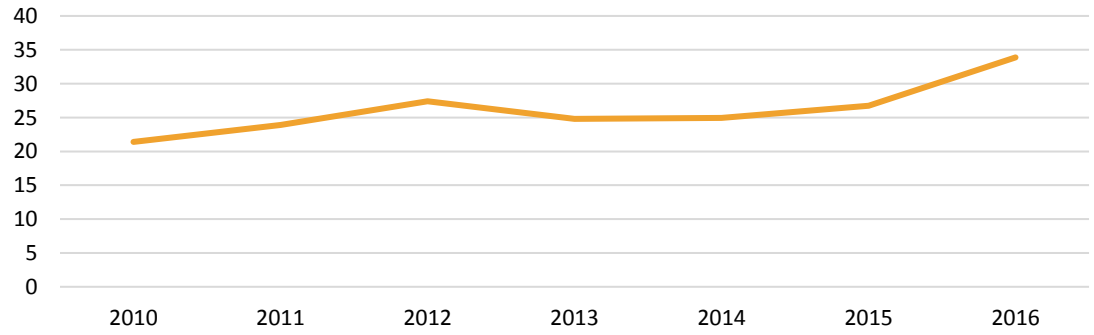


Source: The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

5.7 Control of Corruption

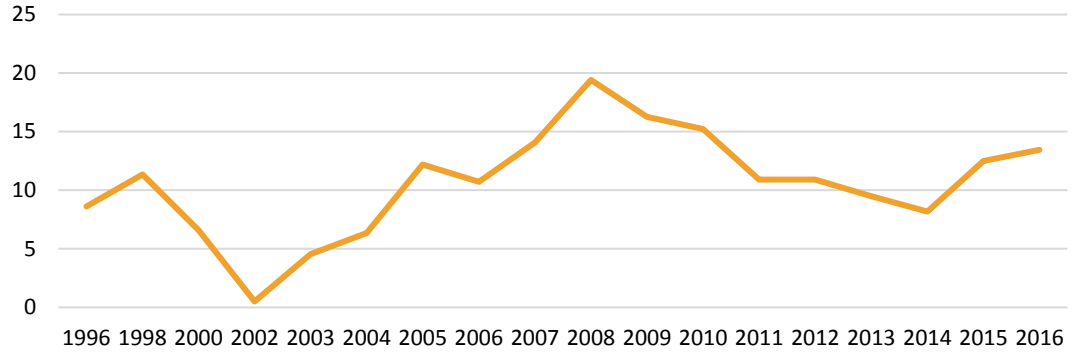
Corruption is ubiquitous but its degree and pattern vary among economies. It is more pronounced in government. Governance in Nigeria has witnessed different corrupt practices at different levels, sectors and parastatals of government. Its detrimental effects on achieving demographic dividend and on human lives in general cannot be overlooked. Since corruption is ubiquitous and its existence has been for several years, it therefore implies that attempt to eradicate it may be unrealistic. However, focus should be directed towards how it can be reduced to a bearable level. Corruption Index in the country shows that it has consistently been increasing. Figure 5.8a shows the corruption index of the country.

Figure 5.8a: Corruption Index in Nigeria



From figure 5.8a, a concrete conclusion can be deduced on the extent to which corruption has been regulated and controlled in the country. The index shows that corruption is on increasing trend in the country which implies that various control measures put in place are yet to arrest corruption in the country. Based on the trend of corruption in the country, efforts have been put in place to control corruption. Hence, the country has continuously been ranked higher in terms of controlling corruption. Figure 5.8b presents the percentile rank of Nigeria on control of corruption.

Figure 5.8b: Percentile Rank of Control of Corruption in Nigeria by WGI

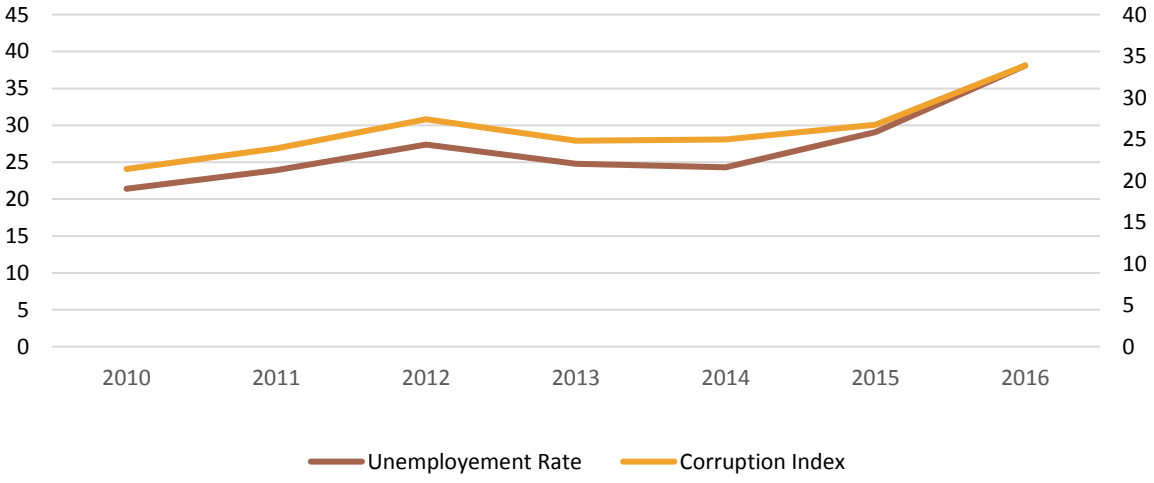


Source: The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

5.7.1 Corruption and Unemployment Rates in Nigeria

Evidence has shown that corruption is a bane to employment generation and this could be hazardous to harnessing demographic dividend in the country. The unemployment rate in the country maintains the same direction with corruption index hence, it implies that reducing unemployment rate is hinged on the ability of government to reduce and control corruption. Therefore, clarion call for string policy on corruption control and reduction is needed to drastically reduce unemployment rate in the country. Figure 5.8.1 shows the trend of corruption index and unemployment rates in the country.

Figure 5.9: Trend of Corruption Index and Unemployment Rates in Nigeria



Source: Corruption Index Data available on www.tradindeconomic.com/transparency international. Unemployment rates data available on www.nbs.ng

5.8 Governance Issues in Shaping Child, Youth and Women Development

Government policy has a wider coverage. It touches everybody directly or indirectly in the economy. Relevant to harnessing demographic dividend, government policy must be channeled towards improving welfare of children without compromising that of youths. At national level, population of children and youth constitute over 50 percent of the

country's population. Hence, issues relating to the welfare of children and youth must be of greater concern to the government. It therefore implies that in order to sustain demographic dividend in the future, government must invest in children and provide enabling environment to cater for bulging population of youth in the country.

Children are meant to take over the wheel of economy when the present working age population is out of the labor force. However, only children that are productively equipped would be beneficial to the economy when they become the Working Age Population. Children population constitutes over 40 percent of Nigeria's population; hence the onus is on government to invest in the children now in order to safeguard the future of the country and also put the nation on the right path of harnessing demographic dividend in the country. Investment in children generates greater positive externalities; the child becomes a meaningful individual and contributes to the development of the economy, and the society as a whole benefits. The opposite will be the case if government fails to invest in children. The first step is for government to ensure domestication of Child Rights Acts across all states of the federation and to monitor its implementation. With this, the future of Nigerian children is secured. Implementation of Child Rights Act by government will further strengthen investment in children. Child Rights Act promulgated in 2003 highlighted various rights of children ranges from right to education, health care, leisure, social protection and so on. Proper monitoring of implementation of the Act will guarantee the proper upbringing of children. This done, the country can therefore be said to be on the road of harnessing the first demographic dividend.

Youths constitute the productive population of the economy. In fact, youths are regarded as change elements in the country. They are key to development. Its contribution to the country independence in 1960 cannot be overemphasized. However, the position of youths in today's governance and government in terms of participation is below what is expected considering the population of youths in the country. Harnessing demographic dividend could be achieved if youths are given considerable opportunities in government and other realms of decision making. Participation rate of youths in government must be given priority. Based on the findings of National Bureau of Statistics and Federal Ministry of Youth Development, 2012, about 64 million of Nigeria's population are youths with females constituting 51.6 percent. The implication is that there is need for urgent intervention by government to tap the potential of bulging population of youths in all ramifications. Incorporation of larger percentage of youth with in skill and knowledge of information and communication technology, entrepreneurship; government and decision-making processes, among others, can expand youth job creation opportunities, hence facilitating achievement of demographic dividend. Recently, Nigerian youths are coming up with various skills particularly in entertainment, social, education sub sectors of the economy. Government needs to provide the enabling environment to to ensure proper channeling of such skills into gainful employment. Furthermore, there is need to widen the participation of women in government. Women play significant role in harnessing demographic dividend. Active participation of women (of all ages) in government and governance could reduce the fertility rate hence achieving demographic dividend. At the moment, the number of women in National Assembly is very insignificant. This can have devastating implication on women welfare, because of lack of adequate representation. Table 5.9 shows the available number of political seats at each level of government.

Table 5.2: Elective Position (1999-2015)

Year	Office	Number of Available seats	Number of seat occupied by women
1999	Senate	109	3(2.8%)
	Rep.	360	12(3.3%)
	Governors	36	0
	Deputy Governors	36	1(2.8%)
	State House	990	12(1.2%)
	Chairpersons	829	18(2.2%)
	LGA Chairpersons	710	9(1.2%)
	Councilors	8810	143(0.02%)
2003	Senate	109	4(3.7%)
	Rep.	360	21(5.8%)
	Governors	36	0
	Deputy Governors	36	2(5.5%)
	State House	990	38(3.8%)
	Chairpersons	881	32(3.6%)
	LGA Chairpersons	774	15(1.9%)
	Councilors	6368	267(42%)
2007	Senate	109	8(7.3%)
	Rep.	360	23(6.4%)
	Governors	36	0
	Deputy Governors	36	6(16.7%)
	State House	990	52(5.3%)
	Chairpersons	887	52(5.9%)
	LGA Chairpersons	740	27(3.6%)
	Councilors	6368	235(3.7%)
2011	Senate	109	7(6.4%)
	Rep.	360	26(7.2%)
	Governors	36	0
	Deputy Governors	36	3(8.3)
	State House	990	62(6.3%)
	Chairpersons		
	LGA Chairpersons		
	Councilors		
2015	Senate	109	8(6.4%)
	Rep.	360	19(5.3%)
	Governors	36	0
	Deputy Governors	36	4(11.1%)
	State House		
	Chairpersons		
	LGA Chairpersons		
	Councilors		

Source: NBS, 2016 (Sixth Global Forum on Gender Statistics Finland and United Nations Statistics Division Helsinki, Finland, 24 to 26 October 2016)

The table shows that women occupy insignificant number of political seats. This could be disastrous and also affect the achievement of demographic dividend. Participation of women in decision should be given priority.

Be that as it may, the Nigeria Roadmap to harnessing demographic dividend places more emphasis on full engagement of youth in governance and proper family planning for women in order to put fertility rate at optimal level. Advocacy for youth participation in government should be embarked and not just wasting their potential for unproductive activities such as political thuggery, kidnapping and other vices in the economy.

5.9 Roles of Legislature in Harnessing Demographic Dividend in Nigeria

Governance is a multi-facet organism. It consists of three major arms- the executive, legislative and the judiciary. This is a similar case in Nigeria. Nigerian Legislative arm of government consists of two levels- House of Representative (Lower House) and House of Senate (Upper House). The major constitutional role of Nigerian legislative arm of government is formulation laws. Be that as it may, the Legislative arm of government in Nigeria is expected to formulate laws that could guarantee harnessing demographic dividend in the country. In recent times, efforts have been made by the arm of government to ensure that populace views and opinions are felt at every level of government. The enactment of the , the freedom of information bill as an Act of the National Assembly was a bold step to boost the participation of populace in government. This can pave the way for information articulation and dissemination in a way that can promote achieving demographic dividend in Nigeria.

Furtherance to harnessing demographic dividend in Nigeria there is the need to widen the participation rate of women in Nigerian legislative chamber. This is necessary to increase and ensure that women are adequately represented in the decision making. An increase in women participation in government (at various level) is capable of reducing the fertility rate of women in the country. Be that as it may, formulation of law to encourage women participation in government should occupy the centre point of discussion in the legislative houses. Also, there is need for formulations of laws and policies that can attract foreign direct investment and expand employment opportunities in the country. Strengthening the existing measures of controlling corruption in the country is critical to harnessing demographic dividend. String efforts must be put in place in terms of laws and policies to bring corruption to minimal level.

5.10 Central Governance Fundamentals for Harnessing the Demographic Dividend

Various governance indicators presented above clearly show that there are gaps to be filled by Nigerian government in its governance affairs in order to ensure that harnessing demographic dividend for the country is realistic. Adequate formulation and implementation of policies to stimulate investment in health, education and other realms can unleashthe potential of bulging population of youths in the country, reduce the fertility rate of women and provide a safety net for children to live up to their potentials. Overall , the Nigerian government should strive to provide and guarantee the following so as facilitate reaping of demographic dividend.

- Widening the political participation of women and youths in Nigeria politics
- Strengthening the service delivery channel of government service so as to achieve effectiveness, efficiency and value-for-money of thesent services
- Institutionalizing channels through which political office holders will be held responsible for their electorate in order to boost accountability and transparency in the system. Such channels should be capable of guaranteeing the safety of electorates.
- Improvement of regulatory agencies' performance to guarantee quality regulatory control.
- Adherence and respect for rule of law must occupy central discussion of government.

CHAPTER SIX

NATURE AND MAGNITUDE OF DEMOGRAPHIC DIVIDENDS IN NIGERIA

Demographic Dividend(DD) is the potential economic growth ignited by changes to a country's age structure, in which small families living long replaces large families living short lives, as the fertility rate declines. DD occurs when the age distribution is altered by a falling birth rate, such that the needs of the youngest age groups require fewer investments for human capital development, and resources are freed up for investment in economic development and family welfare. The implication is that the labour force grows faster than the population that is dependent on it, thus creating a window of opportunity for faster economic growth and family welfare. Given that countries experience the process of decline in fertility rate at different times, with varying enabling opportunities, the nature and magnitude, and commencement of the DD are bound to differ. Though fertility rate has been on the decline in recent years in Nigeria, the emergence and magnitude of DD is an empirical issue that needs to be ascertained to inform policy direction.

Estimation of DD has generally been approached based on the DemDiv and NTA approaches. Most of the early studies have relied on the former, while there are increasing adoption of the NTA approach by recent studies, though considered to be more rigorous. The increasing prominence of NTA is premised on the advantage of relying on effective working force, rather than number of people within the working-age population. This project report explored the two approaches for the estimation of DD for Nigeria. The details of each methodological approach and the DD estimates results from them are presented in the following subsections.

6.1 The NTA Approach

6.1.1. *Methodology*

Previous studies not based on NTA, such as DemDiv identify demographic dividends in terms of the total dependency ratio, that is, ratio of dependants (comprising of children between ages 0-14 and elderly over-65) to working age group[3] of between 15-64 years. This process is further analyzed with different scenario playing out (this approach is detailed in section 6.2). While this dependency ratio approach and procedure is instructive for identifying demographic dividend, it is plagued with limitations of not being able to turn out a single unique estimate, and neither recognizing the actual and effective engagement of those in working age in productive economic activities. Even the determination of working age is arbitrary, as it may effectively be affected by differences in readiness-age and exit-age from labour market across countries. It needs to be noted that the essence of the demographic dividend is the balance between production and consumption. That is, the extent to which effective production supports effective consumption. Better understanding of the link between changing age structure and economic growth requires extending dependency ratios to consider "economic support ratios", which is the core of NTA approach. Economic support ratios are defined as the ratio of the effective number of consumers to the effective number of producers. This provides information as to when the total lifecycle earnings of a country become

[3] Irrespective of whether they are all actively engaged economically or not.

sufficient to cover their total lifecycle consumption, in which the total area under the labour income curve equals (or exceeds) the total area under the consumption curve.

The core method of estimation of demographic dividend in this project is premised on the National Transfer Accounts (NTA) theoretical and basic accounting framework. While issues and estimation of demographic dividend has been approached with different methods, the emergence of the NTA method has depicted some element of reality into the process. The NTA framework is based on intergenerational transfer research whose foundation is usually traced to the pioneering work of Samuelson (1958) and Willis (1988). This framework has been applied to many settings, often under a restrictive set of assumptions. While public and private institutions are recognized as mediator of all economic transaction, the fundamental analytical unit in NTA is the individual. All economic transactions are treated as flows from and to individuals and are classified on the basis of the age of those individual. With consumptions and productions allocated to single years of age, the influence of age structure on growth becomes the fundamental driver of demographic dividend.

Analogous to National Income and Product Accounts produced by most national economies, NTA involves construction of age-specific national economic input-output accounts. This process is what informs the understanding of how changes in a population's age structure, arising out of changes in fertility and mortality, potentially affect the extent to which there is a surplus of production over consumption and hence a potential for understanding the structure of life cycle deficits across age groups and how these deficits are financed. Contrary to other methods of analysis, utilizing only the population figure to calculate demographic dividend, on the implicit assumption that all the people within the working age group are productively engaged, NTA applies the per capita consumption and income figures from life cycle estimates to determine the effective producers and effective consumers, which form the basis for calculating the support ratio, the growth of which typifies demographic dividend.

The process begins with the construction of the age profiles of different consumption and labour income components. While the consumption profile by age classified into public and private, covers the sectoral consumption of health, education, and others, the labour income profile by age covers wage and self-employment income to adequately account for the formal and informal sectors of the economy. Utilizing the 2015/2016 GHS data, which is a representative survey of the entire country, both consumption and labour income profiles were extracted based on the information from the data set. The age profiles with respect to each of the consumption and labour income from the survey is applied to the macro data obtained from the national income account of the country, with the exception of "public other consumption". The per capita public consumption is assumed to be equal across age group, since apart from health and education, no specific age pattern of other public spending can be ascertained. This allows for the sharing of the bulk national income figures to be allocated to individuals in different specific single-age starting from age zero to 90+. Each of the component profiles for consumption and labour income is subsequently collapsed into total consumption and total labour income, which is for the basis of determining the life cycle deficit. The life cycle deficit is computed as the total consumption minus total labour income.

The summary expressions of the NTA framework is given by the equation of the lifecycle deficit (the difference between consumption and labour earnings at each age) and its component elements:

$$C - Y_l \quad = \quad Y_A - S \quad + \quad \tau_g^+ - \tau_g^- \quad + \quad \tau_f^+ - \tau_f^- \qquad (1)$$

Lifecycle deficit = Asset based reallocations net public transfers net private transfers where inflows to individuals of any given age consist of labour income (Y_l), income from assets (Y_A), and transfer inflows from the public sector (τ_g^+) and the private sector (τ_f^+). Outflows consist of consumption (C), investment (I) in capital, credit and land, and transfer outflows to the government (τ_g^-) and to the private sector (τ_f^-). The equation above is obtained by rearranging terms in the basic Inflows = Outflows identity[4] and by noting that saving S equals investment I. Thus, the equation is saying that the difference between consumption and production, known as the lifecycle deficit, must necessarily equal to age reallocations made up of asset-based reallocations and net transfers.

The basis for the computation of the demographic dividends using the NTA approach rests on the consumption and labour income estimates by age group. In estimating the demographic dividend, we followed Mason and Lee (2012) and Mason (2007) as expressed in equation (2):

$$\frac{Y(t)}{N(t)} = \frac{L(t)}{N(t)} * \frac{Y(t)}{L(t)} \qquad (2)$$

Where

Where Y_t is the total output,
L_t is effective number of producers, and
N_t is the effective number of consumers.

Equation (2) states that GDP per capita comprise of productivity (GDP per worker) and the age structure. The equation further expresses output per effective consumer as equal to output per effective producer and the economic support ratio (i.e. effective producers per effective consumers). The equation is used to decompose economic growth to reveal the interrelationship between population growth and GDP per capita growth. We obtained the growth rates of equation 2 by taking the log of both sides of the equation and differentiating it with respect to time to give us equation (3)

$$\dot{y_t} \; = \; \dot{L_t} - \dot{N_t} + \dot{\boldsymbol{y}}_t^l \qquad (3)$$

Equation (3) reveals that the growth rate of output is equal to the sum of two components, which are the equivalents of the two demographic dividends. The first dividend corresponds to the growth of the economic support ratio. This is the difference between the growth in the number of effective producers and the growth in the number of

[4] $Y_i + Y_A + \tau_g^+ + \tau_f^+ \quad = \quad C + S + \tau_g^- + \tau_f^-$
Inflows = *Outflows*

effective consumers, as represented by the first two terms on the right hand side of the equation. The second component is the second dividend, which is the rate of growth of productivity, and is calculated by the growth of the ratio of income per worker. In the NTA approach, the age profiles of consumption and labour income are calculated for each age in the population to give the age profiles of consumption and labour income. In the period of simulation for the demographic transition and dynamics, the associated economic support ratio is calculated holding the shape of the age profiles of consumption and labour income fixed.

The economic support ratio is described by equation (4) below:

$$\frac{L(t)}{N(t)} = \frac{\sum_{a=0}^{\omega} \gamma(a)P(a,t)}{\sum_{a=0}^{\omega} \phi(a)P(a,t)} \qquad (4)$$

This equation indicates that the economic support ratio measures the effect of age structure on the capacity of a population to contribute to current production. The economic support ratio is given as the: Ratio of effective producers (i.e. population weighted by a function of labour income) to effective consumers (i.e. population weighted by a function of consumption). This is based on the belief that the age profiles of production and consumption reflect a wide variety of behavioural, institutional, and cultural factors and thus will affect the productivity in different economies. Demographic dividend is thus defined in this study as the growth rate of the economic support ratio. It should be noted that given labour productivity, a 1% increase in support ratio leads to 1% increase in per capita growth (Mason, 2011).

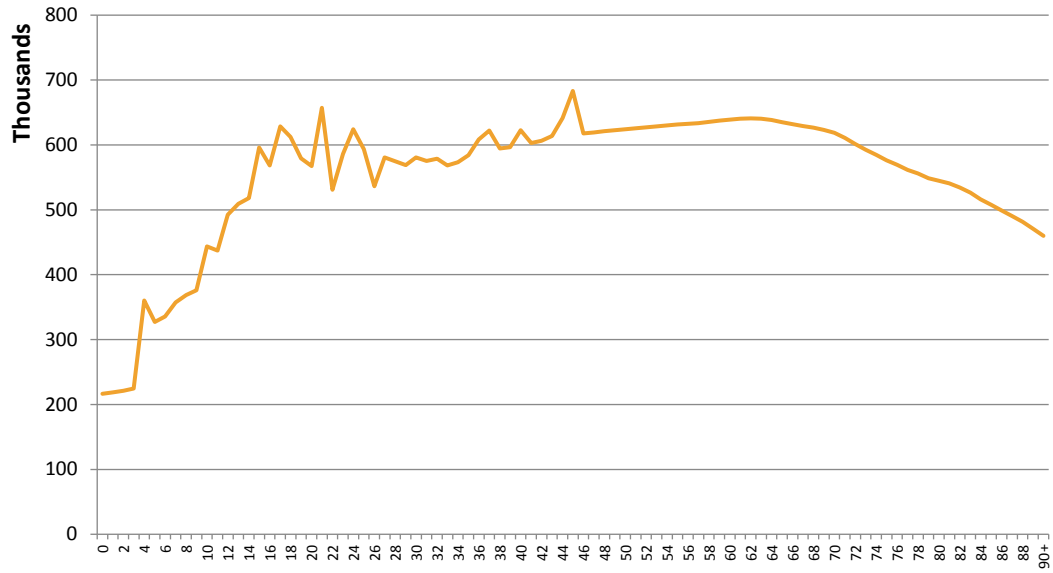
6.1.2. *Results*

6.1.2.1. *Consumption Profiles*

Although consumption is not equivalent to utility and welfare, but it is a major determinant of these and is therefore, of the utmost research interest and policy relevance (Tung, 2011). Consumption by an individual within the NTA framework refers to the sum of private and public consumption, each of which is further disaggregated into education, healthcare, and other consumption. While consumption takes place throughout the entire lifecycle of an individual from birth to old age, the pattern of consumption not only differs over different ages, but also varies from society to society in magnitude and composition. Thus, the usual observed shape of household consumption profiles often exhibit a hump shape instead of staying flat over life cycle. This is explained by the variation in the requirement for different consumption components over time. For instance, the need for education is more pronounced at early years of life than later. Though consumption of healthcare may span throughout the life cycle, the health challenges at different ages are not the same.

Both the total consumption for public and private sectors are reported in this project. Similar to the pattern with the profile of many other countries, the consumption profiles for Nigeria reflect a steep rise during childhood with relative stability among working adults and the elderly.

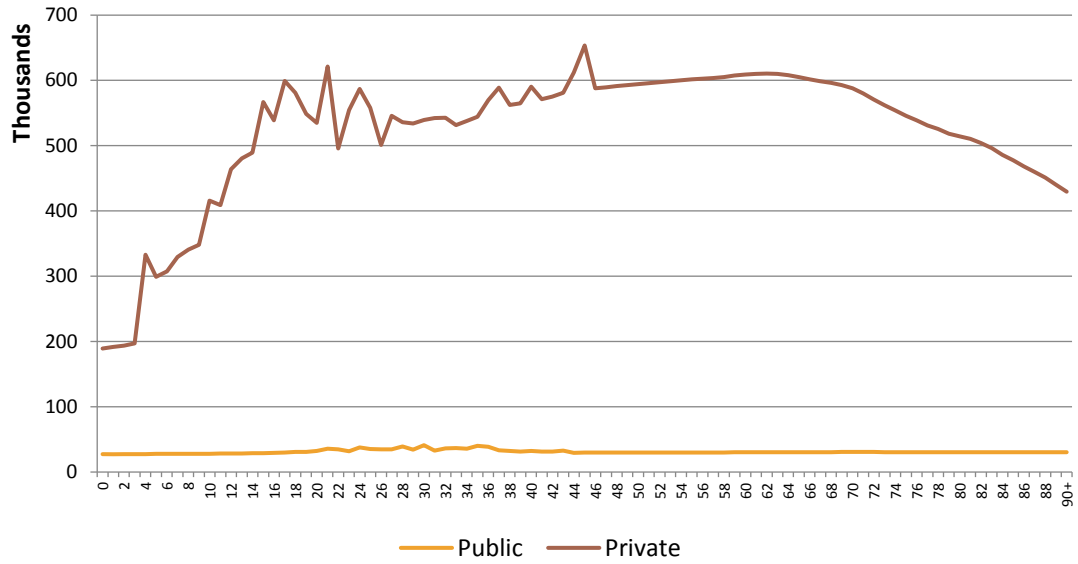
Figure 6.1 Per Capita Age Distribution of Total Consumption for Nigeria, 2016 (Naira)



As would be expected, evidence from the NTA estimates for Nigeria for 2016, shows that consumption commences from inception of life. The per capita consumption reflects a gradual increase in consumption from age zero, characterized by bumps along the way. The per capita total consumption for Nigeria tends to increase with age from age zero to 21, followed by traces of bumps, and reaching the peak at age 45, with per capita amount of N671,481, and subsequently flatten out up to age 65, and began to decline (fig 6.1). The range of consumption value basically reflects the low standard of living that characterizes the Nigeria population. With consumption expenditure below equivalent of $1,870.00 per annum, the prevalence of poverty among majority of Nigerian is not unexpected.

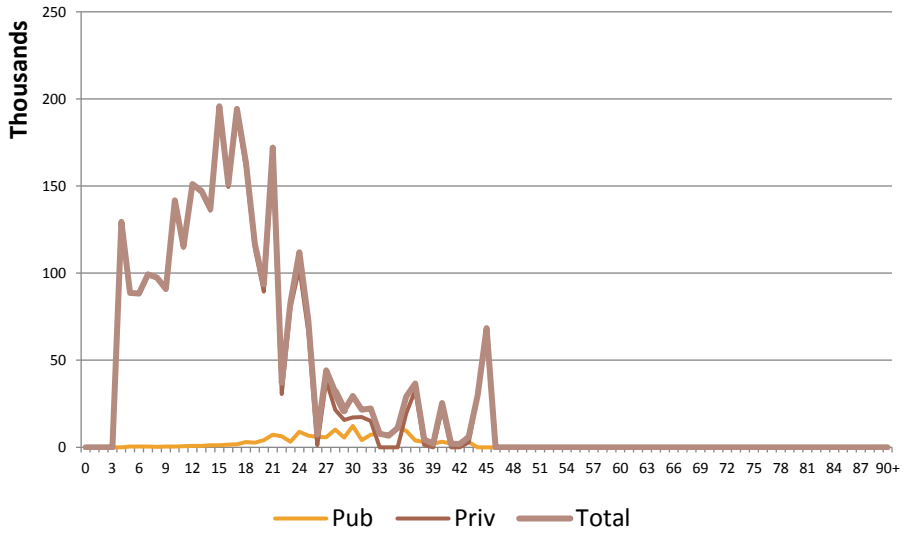
The private and public compositions of consumption in Nigeria are significantly different. The proportion of public consumption in total consumption is very small. The private consumption expenditure dominates throughout the lifecycle. In fact, the shape of the private consumption primarily dictates the shape of the total consumption (Fig. 6.2). The public consumption appears to be flat throughout the years, with some minimal bumps around the youthful age, as a result of spending on education. On the other hand, the private consumption expenditure steeply rose from age zero to around 18 years, and then fluctuates with minimal variance to later reach the peak at age 45 year.

Figure 6.2: Per capita Distribution of Consumption by Public & Private Sectors in Nigeria, 2016 (Naira)



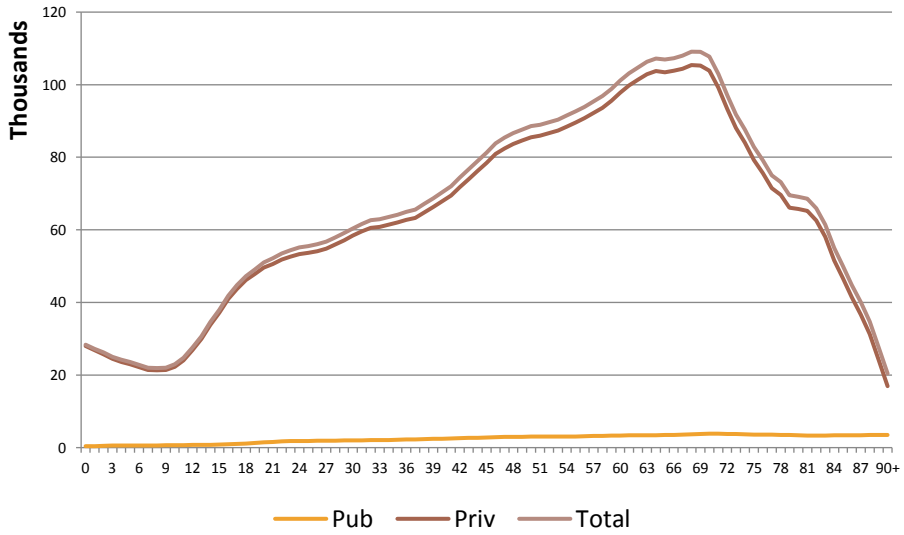
Considering the sectorial component of consumption, the per capita amount spent on each not only differs significantly, but also varies between the private and pubic sectors. Considering education, the age-span during which Nigerians consume education is quite long: from age 4 to age 45. The spending peak for education consumption occurs at age 19 years. In addition, the amount of spending on education as a proportion of labour income is relatively quite substantial. Nigerians spent 22.2 percent of labour income on education, though government accounts for only 3.7 percent of this education consumption unlike some developed countries where government accounts for most of the expenditure in education. For example, private sector accounts for just 0.7 percent of expenditure on education in Germany (Kluge, 2009). Similar to what obtains for the total public and private consumptions, the private consumption on education not only dominates, but also defines the shape of consumption expenditure on education (Fig 6.3).

Figure 6.3: Per Capita Age Distribution of Expenditure on Education by Public & Private Sector (Naira)



Contrary to health spending being higher at early age and old age, the public health consumption appears to steadily rise over the ages, peaking at around age 70 (fig 6.4). Similar to public and private consumption composition of education, health consumption is dominated by private sector, accounting for over 90%. However, it is observed that, apart from the drop in health consumption spending between age zero and 7, the trend shows a steady steep rise over the ages, reaching its peak at age 68, and then steeply slide down to near zero value at old. The proportion of labour income committed to healthcare is 15.2%, out of which government accounts for a far cry of 3.0%.

Figure 6.4: Per Capita Age Distribution of Health Expenditure by Public & Private Sector (Naira)



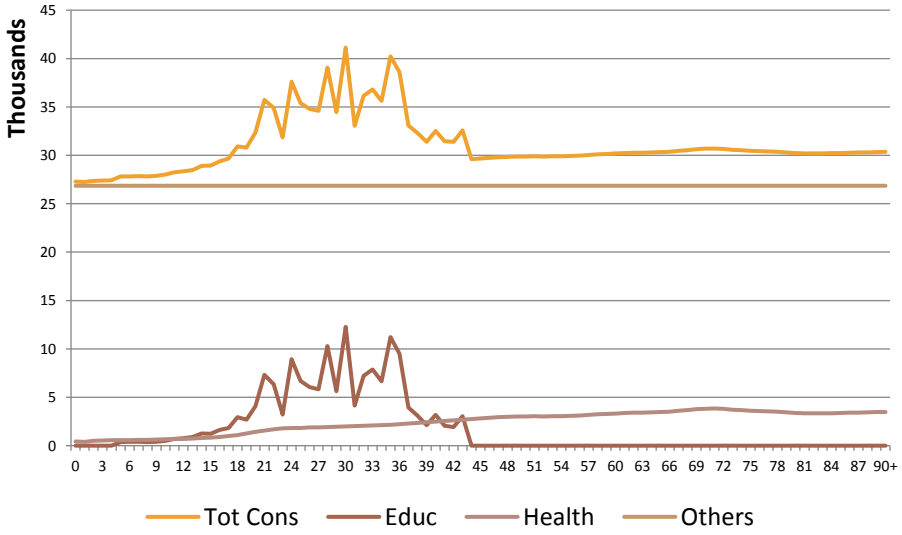
Generally in Nigeria, there is unfair skewedness of burden of building human capital against the poor, as consumption expenditure in the country is predominantly from private sources. The estimate on the age profile of human capital consumption reveals that private sector spends more on human capital on the average than the public sector.

There is low level of government expenditure on human capital within the economy. With high level of poverty prevalence in Nigeria, additional burden on the poor is rather unnecessary. Nearly all the associated costs with consumption of health and education is bone by the private sector, whereas the public accounts for low percentage. With relatively low enrolment rate in primary education compared to countries like Kenya, and proliferation of private schools, the low government expenditure on education may not be surprising. The same high proportion of consumption by the private sector also exists for health. Consistent with the estimates from the Nigerian National Health Accounts (see Soyibo et al., 2009), similar high proportion of spending on health by the private sector applies. This calls to question the stewardship role of government.

Figure 6.5 presents the age profiles of public consumption, broken down into three broad categories: education, health, and others. Given the centrality of education and health to human capital development for economic growth, emphasis is placed on these two as a major feature of NTA method. While education consumption is concentrated among children and young adults, health expenditure is expected to be relatively high for babies, moderate for young children and prime adults, and also high for the elderly. The "other" public consumption category generally includes public services, such as defense, public safety, and environmental protection, and infrastructure development. Public expenditure for items in this category is assumed to be non-age-specific and is therefore allocated equally to each of the population member. This explains the flat shape of the per capita other public consumption.

In line with expectation, the education expenditure is pronounced between age 5 and 37, with peak at age 17. There is very little consumption of public education before age 5 and beyond age 45 in Nigeria. While expenditure pattern for ages 5 to 11 correspond to primary education, the expenditure for ages 12 to 18 correspond to secondary education, and tertiary education for upper ages from 19 to 26. The fact that public spending on education includes individuals within the age 27 and 43 is a reflection of the very small opportunities for entrance into tertiary institutions. The repeated attempt by majority of candidates to gain admission into tertiary institution before succeeding results in delay in having access to tertiary education. The public education spending typically appears to dictate the shape of the public consumption in terms of spread and location of the bumps. The public health consumption age profile typifies a steady rise over age. Health consumption is relatively low for young children, rise steadily subsequently, and then decline slightly for the elderly.

Figure 6.5: Per capita Profile of Public Consumption by Component for Nigeria, 2016 (Naira)



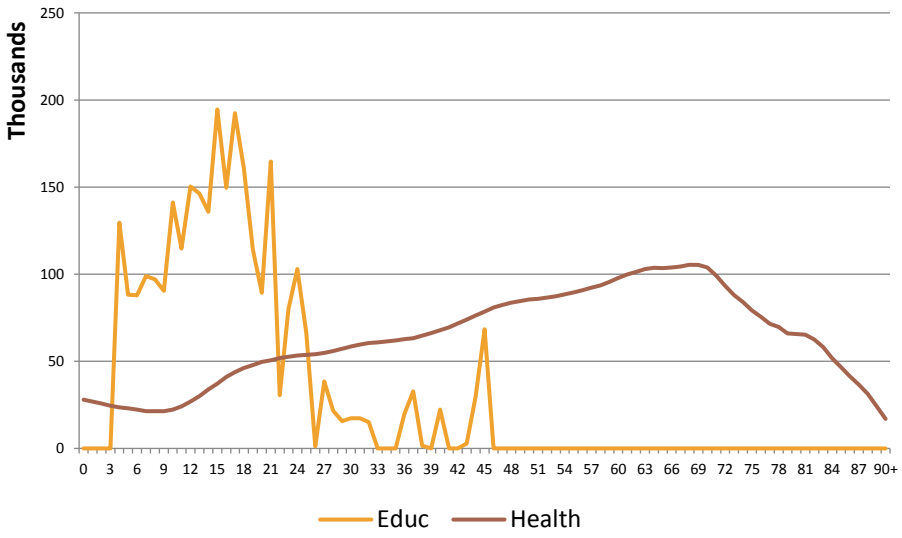
Reviewing this decomposition, what stories does the Nigerian estimates tell? The per capita public consumption expenditure on an individual humps around the prime adult age bracket, barely exceeding ₦40,000.00 (fig 6.5) above. This represents a far cry from the per capita private consumption expenditure, which steeply rose in the early years, to relatively stabilize over the productive age of individuals between the value range of about ₦190,000.00 and ₦625,000.00.

Public consumption not spent on healthcare and education is classified as "other" public consumption. In the absence of any age-varying data on specific public services, public expenditures on defense, and other public goods and services that are considered not to be age-targeted, are allocated uniformly to every resident under the NTA framework. Given that other public spending equally benefits every individual, irrespective of age, it has a horizontal age profile. Although "other" public consumption is flat across age groups, public education and public healthcare consumption varies across age group. This explains the relatively not obvious (because of small share of education consumption in total consumption) hump at the youth end of the public consumption, but a flat tail at the end for the elderly population.

The shape of the age profile of total private consumption bears a strong resemblance to that of private other consumption. Nigeria private other consumption mostly decreases from around age 60 years upward. The dominance of the private sector is well pronounced in both education and healthcare consumption expenditures. The involvement of government in education is mostly limited to tuition-fees offer to student, while living out other component of education expenses. Thus individuals and households have been spending more on education. In addition, many parents provide extra lessons after school, which they have to pay for (Olaniyan, 2009). Furthermore there is a growing population of children who attend privately-owned educational institutions (Olaniyan et al., 2011). The age distribution and the private-public mix of healthcare consumption are far from being uniform. Unlike in developed economies, private healthcare consumption is much greater than public healthcare consumption in

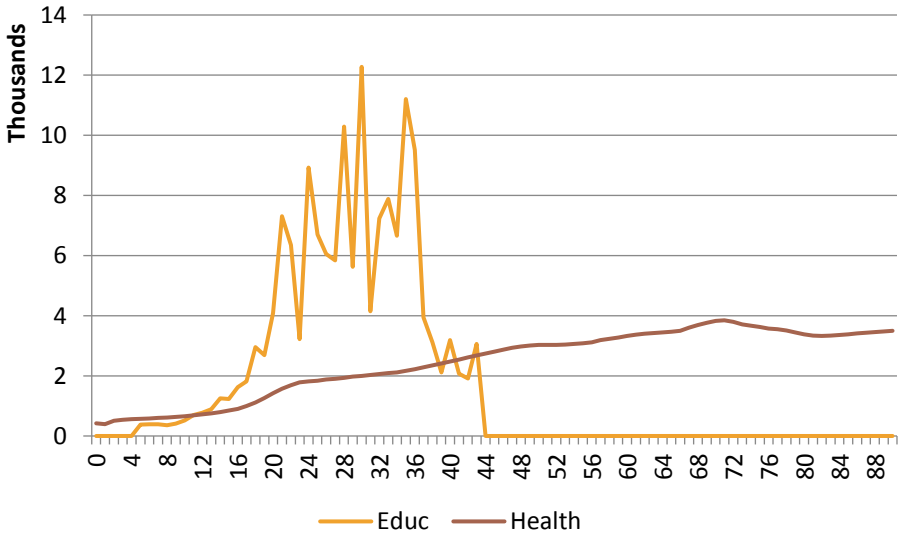
Nigeria, and consistently higher throughout lifecycle.

Figure 6.6: Per capita Profile of Private Consumption of Education & Health for Nigeria, 2016 (Naira)



Per capita private consumption on education is much more than spending on health (Fig 6.6). However, per capita private education consumption is concentrated between age 6 and 26 years, while health consumption steeply rises over the years to reach its peak around age 71 years, before declining. This shows that human capital investment through spending on education is within an age limit, while health is continuous and necessary throughout lifecycle.

Figure 6.7: Per capita Profile of Public Consumption of Education & Health for Nigeria, 2016 (Naira)

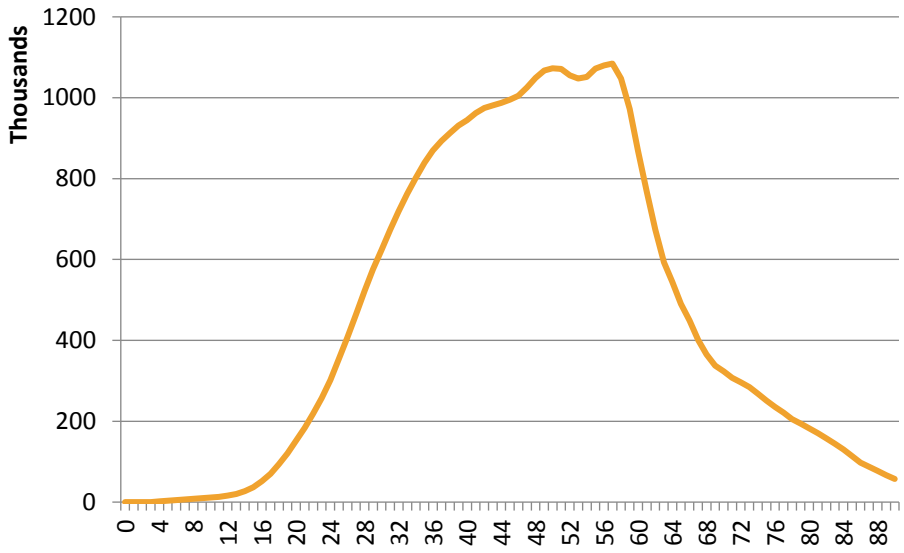


Generally, public consumption of education is more than for healthcare. However, as would be expected, the public education consumption is concentrated between the age 20 and 40 years, while public health consumption steadily increases over the age profile and peaked around age 71, before slightly declining (Fig 6.7). The structure of public education consumption is a reflection of the huge subsidization of tertiary education by government.

6.1.2.2. *Labour Income Profile*

Labour income in the NTA framework provides a comprehensive measure of production. Labour income is defined as all compensation to workers, including labour income of employees (earnings), the proportion of entrepreneurial income (self-employment income) that is a return to labour, employer-provided benefits (fringe benefits), and taxes paid to the government by employers on behalf of employees (Lee and Ogawa, 2011). As expected, the labour income is not significantly different from zero in the first decade of life.

Figure 6.8: Per capita Age Distribution of Labor Income for Nigeria, 2016 (Naira)



There are indications that labour income began to accumulate from around the age of 15 years, and steadily grows thereafter. The labour income peaks between age 49 and 56 years, while Nigerians on the average continues to earn income from labour till age 85, as it fizzles out (Fig. 6.8).

The components of the labour income consist of wage income and self-employment income , which were independently computed and later added to derive the labour income for the country. Self-employment income, which mainly comes from agriculture and service sectors is calculated as two thirds of the mixed income accruing to households as per SNA income formation account plus net taxes on production accruing to households as per SNA income formation account plus net taxes on production attributed to self-employment earnings. Reflecting the fact that production is concentrated among the working-age adults, labour income depicts an inverted U-shape.

While in most countries, the peak in productivity is reached somewhere between ages 40 to 50 years (Mason et al., 2009), the peak for Nigeria in 2016 is reached at age 58 years. The labour income profile for Nigeria in 2016 complies with the usual bell-shape pattern. There is however a bump around age 47-58. Two most distinct features of the groups are the shape of the profiles at which earnings peak and decline subsequently, as well as the prominence of earning at old age. The per capita self-employment income not only commenced at earlier age relative to wage income but also remained higher till age 44 years. Its earlier commencement is not unconnected with existence of child labour and the dominance of the informal sector over and above formal sector in terms of volume of labour engaged.

Figure 6.9: Per capita Age Distribution of Wage & Self-Employment Income for Nigeria, 2016 (Naira)

They however peaked at different ages and lasted for different length of years. The per capita wage income peaks at age 57 years and fizzle out faster, whereas self-employment income peaked earlier at age 38 year, but continued longer than the wage income (Fig 6.9). This reveals that while Nigerians reached their peak at wage earning labour, they tend to continue longer in own account businesses. Unlike Moldova in which self-employment income is extremely insignificant (less than 10%) as proportion of total labour income, self-employment in Nigeria accounts for 55% of total labour income for Nigeria. This is explained by the relative dominance of the informal sector in the Nigerian economy. Therefore, creating the enabling economic environment for the private sector, of which the informal sector is prominent is required for further harnessing of demographic dividend for Nigeria.

The observed less rapid decline of the labour income is explained by the fact that most Nigerian transit into self-employed job after retirement. It is common for government to deliberately prepare workers for entrepreneurial life once they are nearing retirement age. Thus, a less rapid decline of labour income is observed beyond age 59 years. Unlike many developed countries, self-employed income accounts for 55 percent of all labour income in Nigeria and it is bigger than wage earnings for ages before 44, and ages above

62 (Fig 6.10). The concentration of Nigerians in the informal sector where they are self-employed is one explanation for this.

Figure 6.10: Per capita Age Distribution of Labour Income and components for Nigeria, 2016 (Naira)

6.1.2.3. *Economic Lifecycle Deficit*

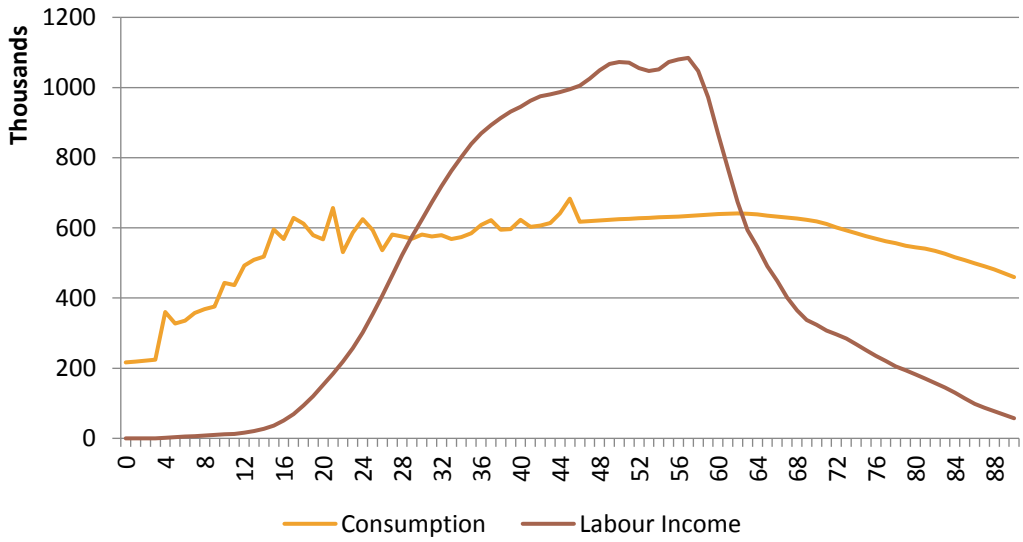
The economic lifecycle is the longitudinal concept referring to the passage through life of an individual or a generation (Lee and Mason, 2008) and the economic behaviour over lifecycle can be summarized by the amount consumed and produced through labour at each age. Lifecycle deficit is obtained by combining consumption and labour profiles. This is computed by subtracting mean labour income from mean consumption at each age. Most countries always have lifecycle deficit since labour income is usually insufficient to offset all consumption expenditure within the country.

Whether the country has an economic lifecycle deficit or surplus is inherent in the relationship between income and consumption. The economic lifecycle deficit (LCD) is measured by the difference between consumption and labour income at each age, which gives us an empirically based, continuous measure of economic dependency (Olaniyan, et al., 2011). The differences in the components of consumption and labour income are what ultimately determine their differences. The per capita values of lifecycle deficit in Nigeria are represented by figure 11. The figure reveals that lifecycle deficits exist for the young between ages 0 and 30 years and exists for the elderly between ages 62 and above. Thus Nigerians only experience surplus between ages 30 and 61 years where labour income exceeds consumption for the different ages. Consistent with most studies on economic lifecycle, the combination of the deficits outweighs the surplus period. The estimates for the country reveal the existence of three stages: the youth dependency stage, followed by a period of economic surplus and then elderly dependency as the later stage of life.

It is estimated that Nigeria enjoys an economic lifecycle deficit of 31.9 trillion Naira in 2016. Child deficit is observed to be about 3.8-fold of the surplus recorded by the

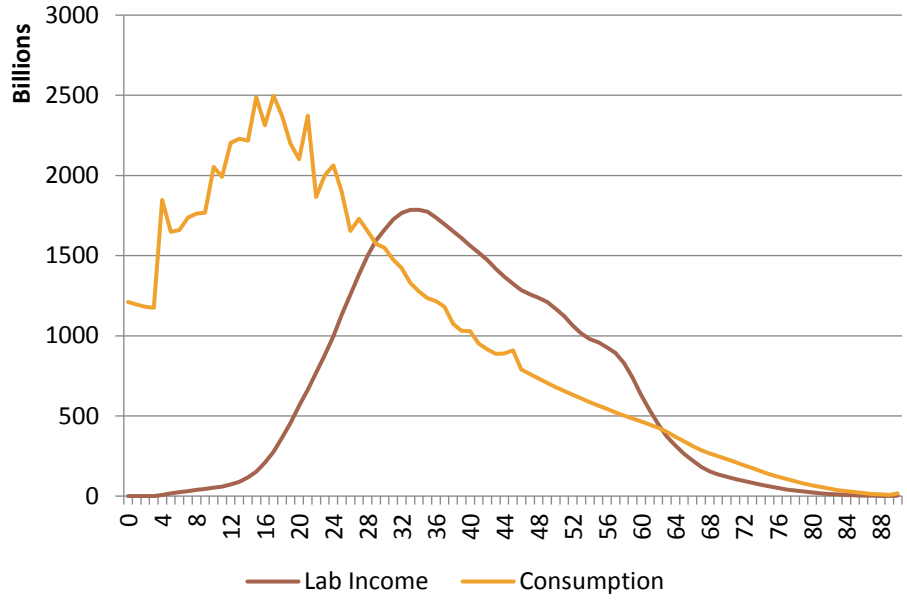
working age group, reflecting the predominance of younger people in its population. The peak for the per capita deficit occurs for children aged 13 years with deficit of 1.77billion Naira and for the elderly it occurs at age 68 years, with deficit of 130.1 million Naira. However, the highest per capita surplus occurs at the age of 42 years with aggregate value of ₦466.66 million Naira.

Figure 6.11A: Per capita Age Distribution of Consumption & Labour Income for Nigeria, 2016 (Naira)



While the labour income profile for Nigeria reveals that the bulk of the income is earned by the working age group of the population, the total labour income earned is however less than the total consumption by the population resulting in lifecycle deficit. The age profiles of the lifecycle deficit in Nigeria imply that the young and the elderly consume more than they produce. Lifecycle surplus only span 31 years between ages 31 years when income exceeds consumption and age 62 years when consumption once again exceeds income (Fig. 6.11). At ages 31 to 62 mean labour income is greater than the mean consumption at the same age. This implies that child dependency does not end until age 31, while old-age dependency commences after age 62. Drawing from this 2016 estimate of the per capita consumption and labour income, the lifecycle deficit in Nigeria reaches its minimum, implying the lifecycle surplus is at its maximum at ages 51 and 58. ?????

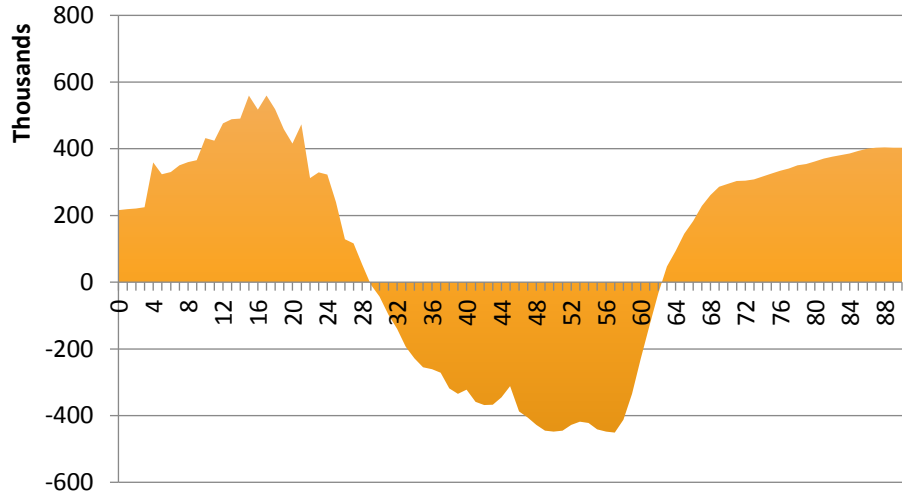
Figure 6.11B: Aggregate Age Profile of Consumption & Labour Income for Nigeria, 2016 (Naira)



The actual dependency period in Nigeria compares effectively with other African countries, like Senegal, South Africa and Kenya having child dependency ending at ages 35, 33 and 29 years, respectively. The late end to child dependency in many African countries has been argued to be as a result of late enrolment in schools which makes many of them end school late (Olaniyan, et al., 2011). In addition to existence of high unemployment and underemployment rates in African countries, and the insufficient space for tertiary education needs in Nigeria, often cause delay in being ready for the job market.

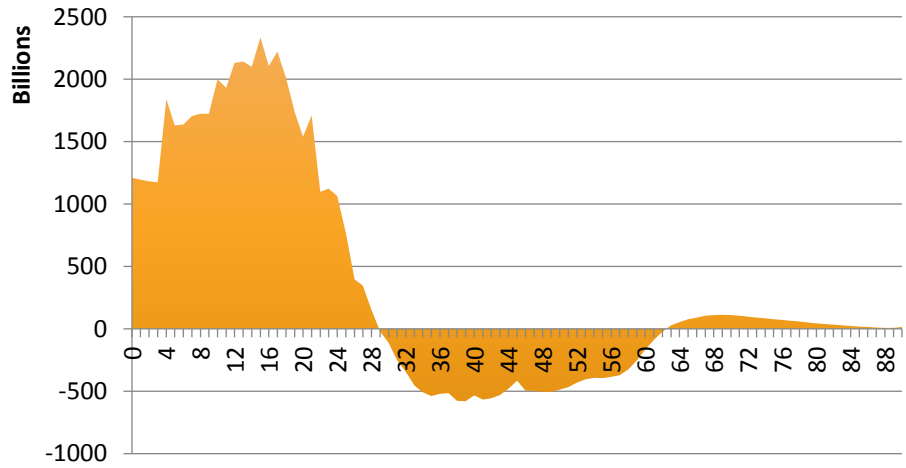
With 30 years of surplus for the country, this contrasts favourably with some other countries with lower surplus periods, such as Brazil, Kenya and Senegal having surplus periods of 20, 26 and 25 years respectively. With a surplus period of 30 years, the surplus generated during the period was just N10.74 trillion which is just sufficient to cover one-quarter of the child deficit. This implies heavy reliance on asset income and transfers to finance consumption of all age groups. It should also be noted that the surplus period also ends later than in other countries. While it ends at age 62 in Nigeria, it ends earlier at age 61, 60 and 59 for India, Indonesia, and Kenya, respectively (Mason 2008). The late official retirement age of 60 years in Nigeria could possibly be sported as explaining the delay ending of surplus. Though, this is only applicable to small proportion of the population that is, those employed by government or formal sector, many Nigerians often transit into the informal sector at retirement.

Figure 6.12: Per capita Lifecycle Deficit for Nigeria, 2016 (Naira)



With extended three decades of dependency on each end of child and old age dependency, there is need for formulation and adoption of appropriate social policies to improve the quality of life of both the young and the old so that Nigeria can begin to reap from its investment on her children very early and the elderly can have comfortable and less stressed life at old age.

Figure 6.13: Aggregate Economic Lifecycle Profile for Nigeria, 2016 (Naira)



6.1.2..4: *Summary of Aggregate Life Cycle Deficit and Components by Age Group*

Classifying the Nigerian population into different age groups shows a general dominance of children. The population is classified into children (0-17), young adults (18-35), full adults (36-60), and the elderly/aged (60 and above). The young adult group represents the age at which individual enters into the labour market to be part of the effective producers. While about half of the population is below age 18 years, more than three-quarters are below age 36 years. Given the proportion of the children in the population,

the bulk of the country's LCD is accounted for by the children. The LCD of persons younger and elderly being more than that of working age occurs because they consume more than they produce. The surplus from the most active working age (36-60) is barely sufficient to cover the deficits of young youths and the aged. Thus, the LCD of the children is approximately the same as the total LCD. Similarly, the children and the young adults account for the bulk of the total consumption. Generally, private sector consumption far outweighs public consumption across the different age group. This is a reflection of the absence of or minimal social security in the country.

One significant feature of the Nigerian education consumption by the sector is that, while the public education consumption by young adults is far more than that of children while the reverse is the case in respect private education consumption. In Nigeria, majority of children attends private primary and secondary schools. However, the bulk of education services at the tertiary level is provided by the public, in which most tertiary institutions are owned by government and admit relatively more students.

Table 6.1.1: Population, Aggregate Labour Income, Consumption, and Life Cycle Deficits by Age Group in Nigeria, 2016 (Trillion Naira)

Age Group	**0-17**	**18-35**	**36-60**	**60+**	**Total**
Population	85,614,016	54,475,969	31,060,026	8,056,944	179,206,955
Proportion of Total Population	47.8%	30.4%	17.3%	4.5%	
Life Cycle Deficit	**31,982.89**	**9,715.23**	**-11,356.86**	**1,518.82**	**31,860.07**
Consumption	**33,170.39**	**31,766.52**	**19,321.78**	**4,926.81**	**89,185.49**
Public	2,400.63	1,905.79	971.55	244.98	5,522.95
Education	46.66	346.54	51.66	0.00	444.85
Health	54.56	96.14	85.68	28.58	264.96
Other	2,299.42	1,463.11	834.21	216.39	4,813.13
Private	30,769.76	29,860.72	18,350.23	4,681.84	83,662.54
Education	8,170.86	3,264.49	277.41	0.00	11,712.76
Health	2,326.23	2,952.63	2,413.41	757.31	8,449.57
Other	20,272.67	23,643.61	15,659.41	3,924.53	63,500.22
Labour Income	**1,187.50**	**22,051.29**	**30,678.64**	**3,407.99**	**57,325.42**
Wage Income	149.05	8,340.56	16,112.31	1,211.45	25,813.37
Self-Employment Income	1,038.45	13,710.74	14,566.33	2,196.54	31,512.05

As would be expected, labour income progresses with age to peak at the active working age. Reflecting the dominance of the informal sector, children age group and the young adults earn greater income from self-employment economic activities than wage earnings. Similarly, the same applies to those of the elderly, who retire into self-employment for sustainability. However, the more active labour force age group earns relatively more from wage employment.

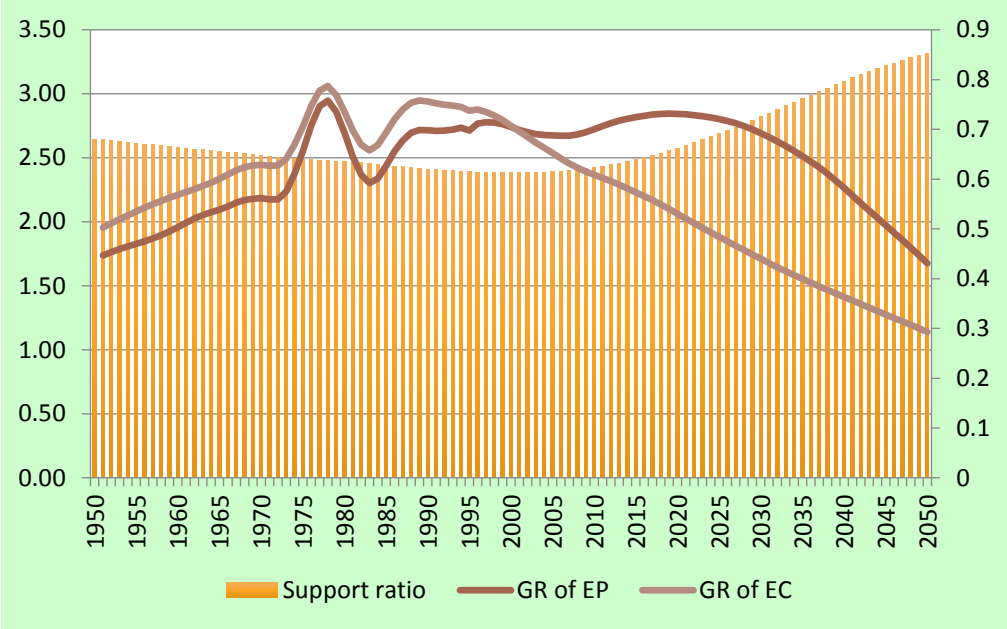
6.1.2.4. *Economic Support Ratio and Demographic Dividend*

As shown in fig 6.14, the growth of both the effective producers and effective consumers progressively increased from 1950s to 1977, with effective consumers growing

relatively faster. The recovery from the decline between 1977 and 1983 (the economic austerity measure year), was short-lived for effective consumers, which continuously declines in subsequent years. The effective producer (EP), on the other hand relatively stabilized, with minimal growth, is expected to begin to decline from around 2020. The faster rate of growth of the effective consumers (EC) experienced a switch from 2001, as it begins to slow down behind effective producers. This point represents the turning point of the support ratio from initial decline to an increasing trend.

The nature and significance of population shifts from "youthful" to "old" population structures has become important in the development literature. This has arisen due to the potential effects that population shifts, as opposed to population size and population growth, have on economic growth of both developed and developing countries (Amporfu, et al, 2014). The support ratio is the ratio of the effective number of producers to the effective number of consumers (United Nations, 2013). The support ratio has remained the standard tool for analyzing the economic effect of changes in the population age structure.

Figure 6.14A: Growth Rate of Effective Producers, Effective Consumers, and Support Ratio for Nigeria, 1950-2050

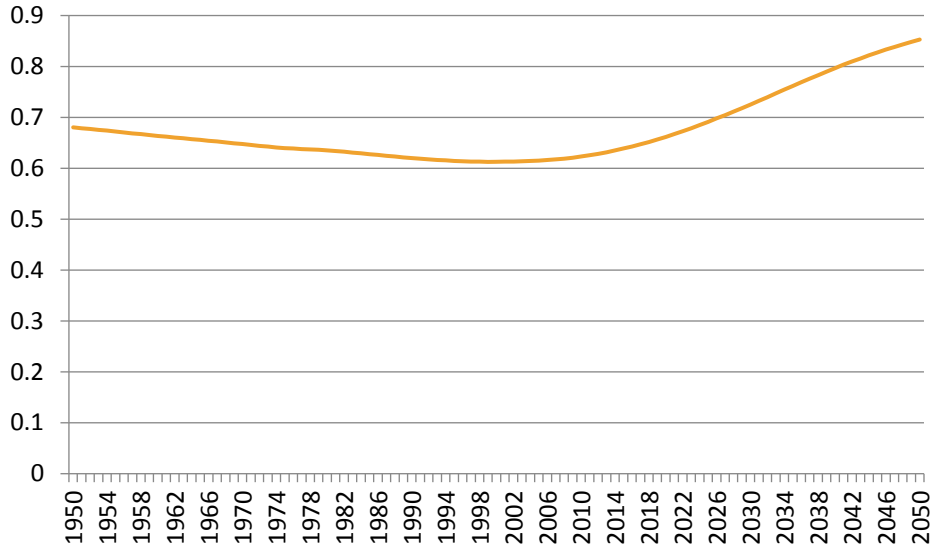


Nigeria has been undergoing demographic transition due to decades of continuous decline in both fertility and mortality rates, accompanied by increasing life expectancy. The support ratio is on the rise in Nigeria starting from around 2000. The pace of the rise in support ratio is faster than the preceding decline rate between 1950 and 2000. The support ratio increases rapidly between 2000 and 2050 and beyond.

The economic support ratio is computed as the inverse of the dependency ratio, which is a reflection of how the non-workers have been supported by workers. A support ratio

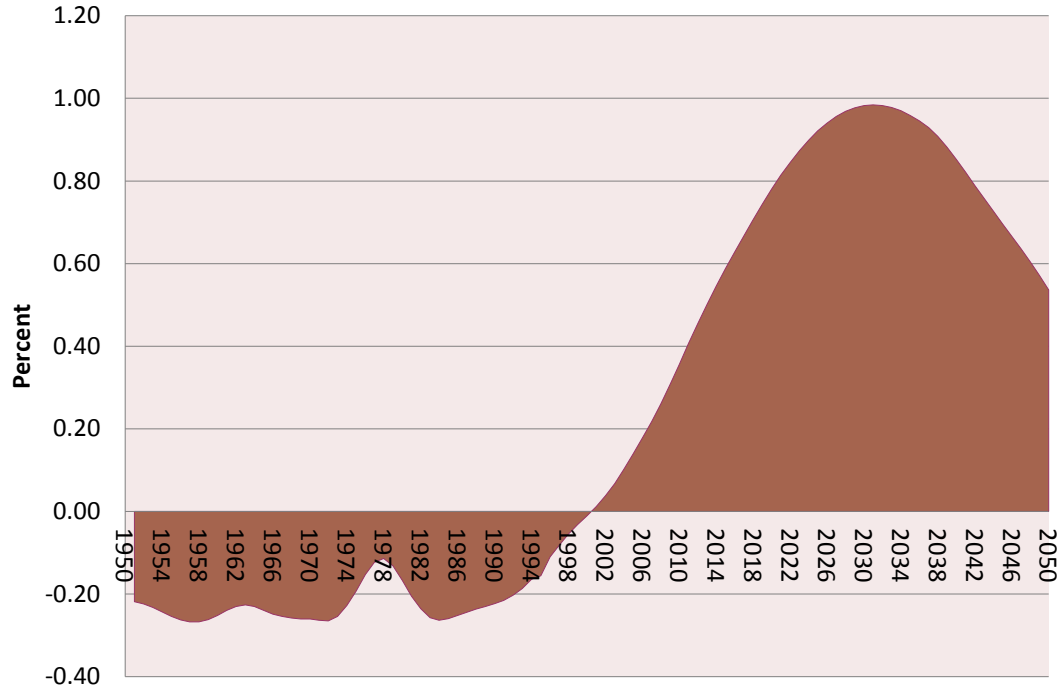
of 0.5 means that each worker is on average, supporting himself or herself plus one other consumer. From the middle of last century up onto the end, the situation of workers worsened, as they had to support more and more people (figure 14).

Figure 6.14B: Economic Support Ratio for Nigeria, 2016



From the turn of century, there has been an improvement in the situation of workers, as the growth of support ratio has turned positive, which opens the door for the enjoyment of the first demographic dividend. The calculations of the first demographic dividend rely on a number of assumptions such as the stability of the age profile of consumption and labour income over the period are the basis for the computation of first demographic dividend, though reality may deviate. The first demographic dividend for Nigeria, drawn from the difference between the growth rates of the number of effective producers and effective consumers is presented in Figure 14. For close to two decades, Nigeria have started enjoy his first demographic dividend. It is expected that the support ratio will begin to decrease from the year 2040, which explains the subsequent decline in the DD curve in figure 15.

Figure 6.15: First Democratic Dividend, Nigeria 1950-2050



In all, the situation appears to be the same for the other African NTA countries. Indeed, Senegal and Nigeria started to enjoy the first dividend since 2000 while South Africa and Kenya started earlier (between 1970 and 1980). To enjoy the dividend it is important to enlarge the population of effective workers by providing them with enough job opportunities when the economically active population is growing. The DD has commenced since 2001, when it turned positive. This also represents the turning point of the economic support ratio from initial downward trend to an increasing trend. The DD is projected to reach its peak in 2051, after which it begins to decline. It however remains positive well beyond year 2100. Given that DD is not automatic, a deliberate effort is required to create the enabling environment to facilitate full harnessing of the DD.

6.1.3. Demographic Dividend Results by Gender

This study further disaggregated the consumption and labour income profile by sex to provide a deeper insight into the differences in economic lifecycle of males and females, and contribution to economic growth, in other to inform the gender perspective of policies. Apart from general consumption, there exist some gender peculiar characteristics in consumption and earning opportunities and patterns available to the different sexes. The survey data and the macro control data were disaggregated into female and male contributions. We present the emerging consumptions, labour incomes, economic lifecycle profiles, and the DD estimates by sex in this section.

6.1.3.1. *Consumption Profiles for Gender*

Though the shape of the total consumption profiles for males and females are similar, there are some peculiarities that differentiate them. The consumption profiles for both male and females progressively rise over the age with some bumps along the way. They however reached their peak at different ages. The average total consumption for male is not only slightly higher than for female, but also reached its peak at a latter year. While total consumption profile for male reached the peak of #724,729 at age 57 years, the female total consumption, which peaked at #667,083 had earlier reached this peak at age 51 years (Fig 6.16A & 6.17B). This reflects the relatively higher productivity of male, and tendency to work for longer years.

Figure 6.16A: Per Capita Total Consumption for Males in Nigeria, 2016 (Naira)

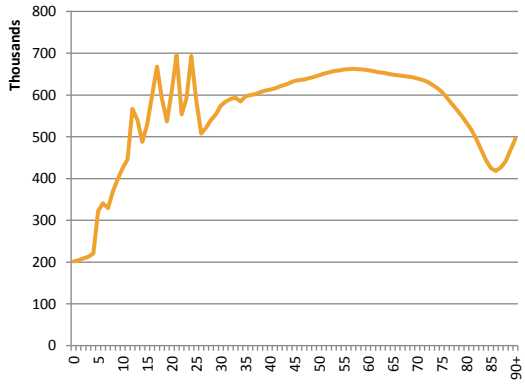
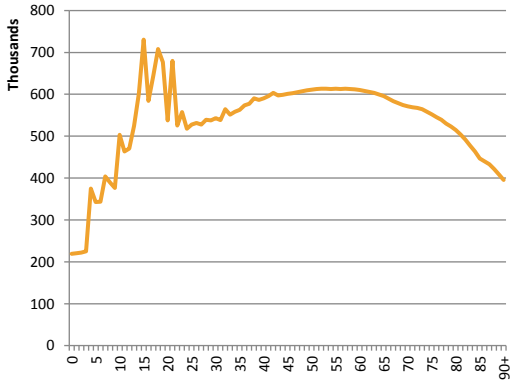


Figure 6.16B: Per Capita Total Consumption for Females in Nigeria, 2016 (Naira)



A further disaggregation of the total consumption into its components for education and health across the public and private sectors, reveal near perfect similarities for consumption contributions by public and private education (Fig. 6.17A & 6.17B). There is however, a marked difference in the profiles and magnitude of health consumption contributions by public and private sectors. The public sector health consumption for females steadily rose over the years till old age. The public sector health consumption profile for males appears being nearly flattened out between the ages 21 and 71 years, and then start to decline. Both the private health consumption profiles for male and female steadily rose over the age. The male health consumption profile is characterized by a number of bumps, while the female health consumption profiles maintain a steady progression. With both male and female private health consumptions taking off with same value of about N2,000 at birth, the private health consumption for male reached its peak value of #9,895 in year 69, while private health consumption for female reached its peak value of #6,131 at latter age of 71 years, which is less than two-third of the peak value for male (6.17A & 6.17B).

Fig 6.17A: Per Capita Total, Public & Private Education Consumption for Males in Nigeria, 2016 (Naira)

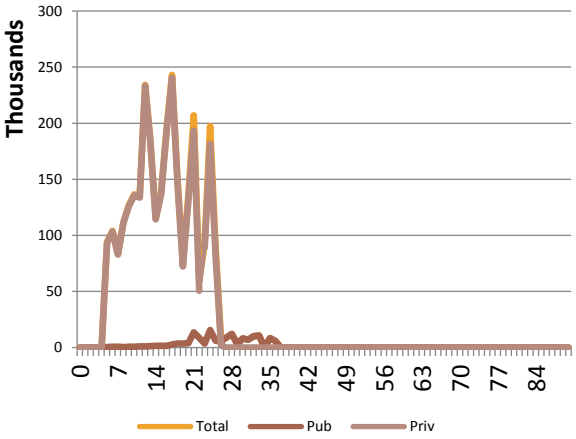
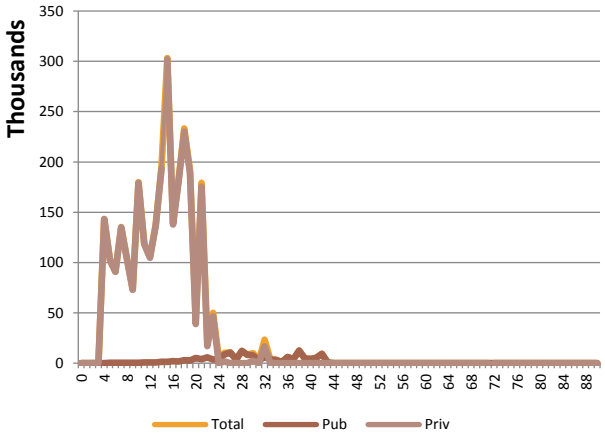


Fig 6.17B: Per Capita Total, Public & Private Education Consumption for Females in Nigeria, 2016 (Naira)



The significant difference in private health consumption between males and females could be a reflection of the influence of males as the heads of households, in allocating more resources to themselves. On both cultural and religious ground, the Nigerian household accords the male head more economic benefits above other household members.

Fig 6.18A: Per Capita Total, Public & Private Health Consumption for Male in Nigeria, 2016 (Naira)

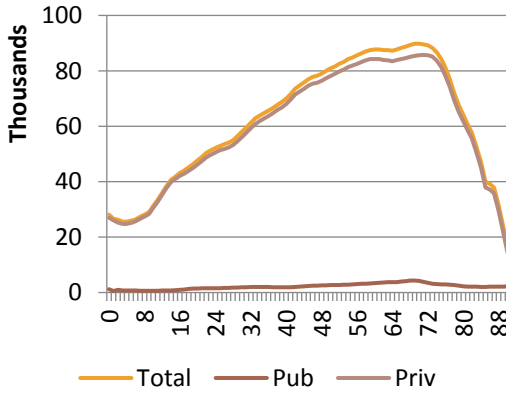
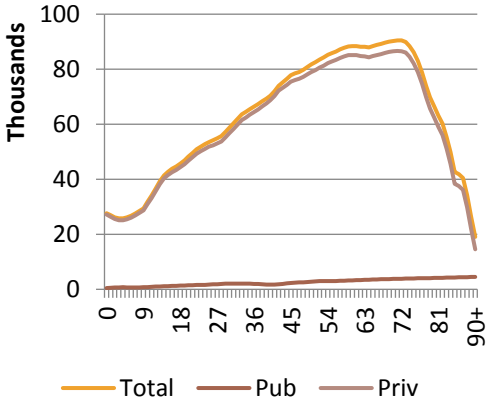
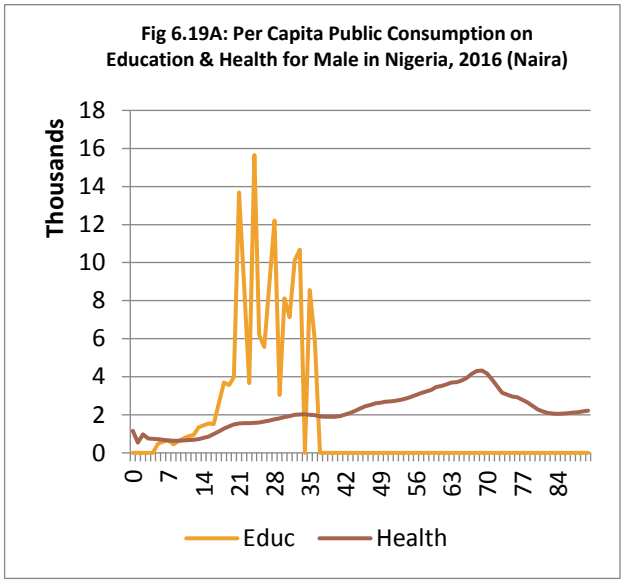


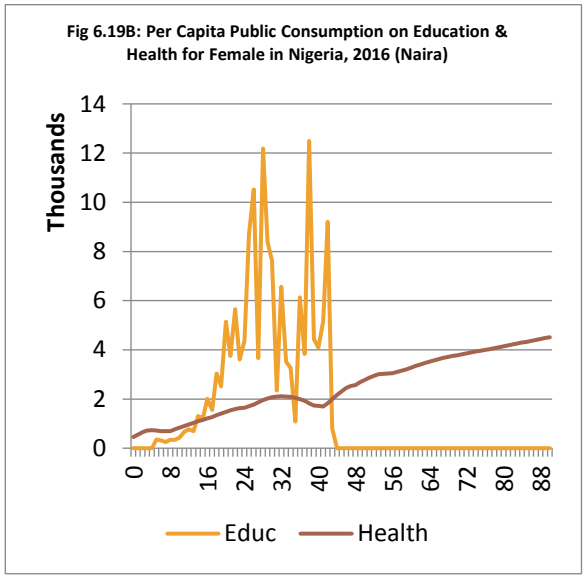
Fig 6.18B: Per Capita Total, Public & Private Health Consumption for Female in Nigeria, 2016 (Naira)



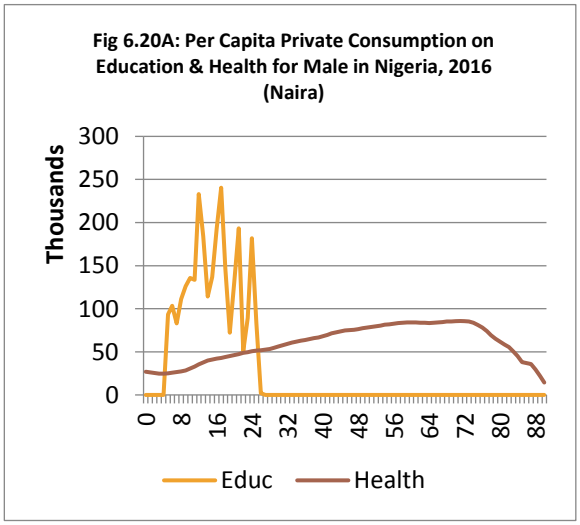
Examining the relative public consumption of health and education, the estimates shows that public expenditure on education is slightly higher for males than for females. In addition, education consumption for males continued to be significant up to age 44 years, while for females the significance of the education expenditure is truncated at around age 37 years, where the male figure experienced a significant drop. Public consumption of health for both males and females steadily increased along the age status, however, male health consumption is generally higher than that of female. While public health consumption for female remained less than ₦4,000, the male consumption reached ₦5,000 mark. While the steady increase in public sector health consumption for female

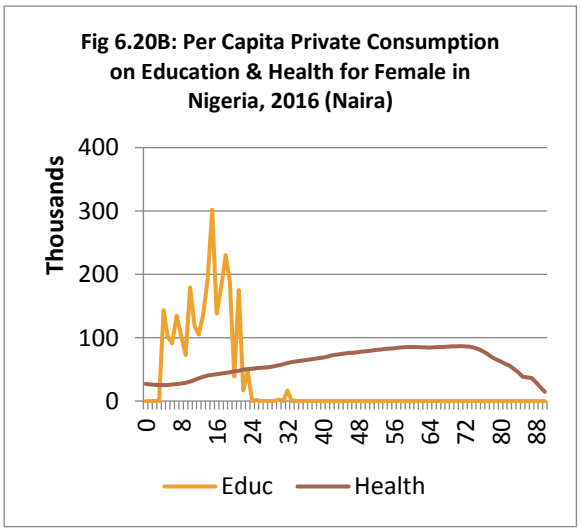
increased continuously over the age trajectory, the male consumption began to decline from age 68 years (Fig 6.19A & 6.19B).





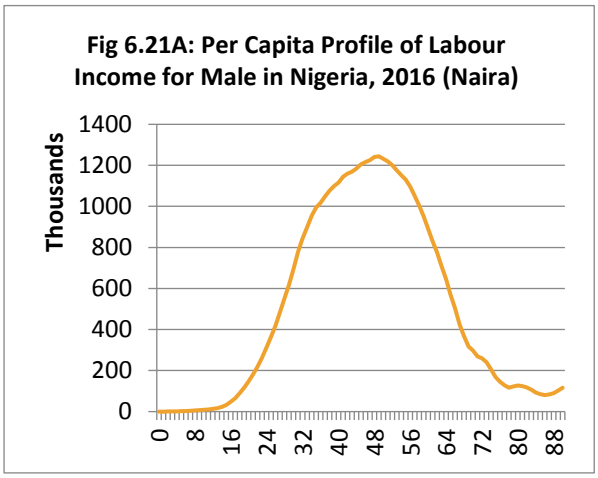
The private education and health consumption are significantly higher than public education and health consumption. The male private education consumption reached its peak earlier before the female's, and peaked longer between ages 12 years and 16, while female peak only occurs at age 16 years. Unlike the public education consumption, which remained significant age 44 years, the private education consumption disappeared and fizzled out from around age 25 years for both males and females. The pattern and magnitude of private health consumption is exactly the same for both male and female over age range. We observe an initial steady rise that started to decline at age 72years (Fig. 6.20A & 6.20B).

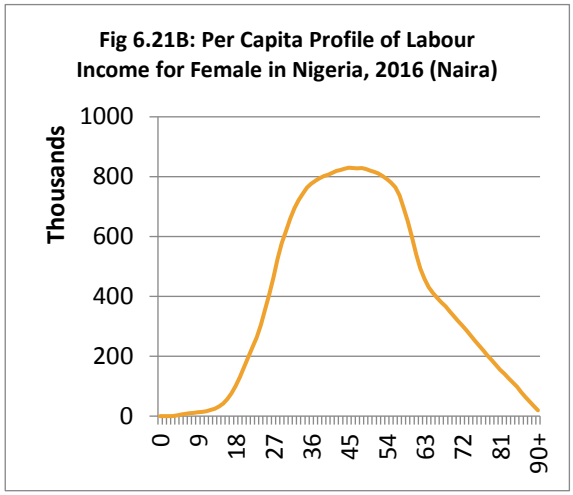




Labour Income Profiles for Males and Females

The labour income profile for both the males and the females have the usual bell shape. In the first 13 years from birth, both males and females have near zero earning from labour income. However, males on the average earn relatively more from labour income than females, and both reached their peak at different ages. The male labour income earning reached its peak of over ₦1.3 million at age 49 years, while female labour income earning reached its peak of ₦803,185 at age 45 years (Fig 6.21A & 6.21B). The earning profile is however steeper for female than for male elderly. This may not be unconnected with the fact that females engage more in self-employment than wage employment, which is easier to cope with, even at old age.





Disaggregating the labour income into earnings from wage and self-employment, it is apparent that males and females are disproportionately engaged in the formal and informal sectors of the economy. While the males generally earn greater proportion of their labour income from wage employment, the females tend to rely on self-employment as the main source of their labour income. Throughout the entire profiles of the labour income, the females consistently earned more from self-employment than earnings from wage employment. In Nigeria, women are usually responsible for housekeeping and upbringing of children. Thus, the kind of economic activities mostly convenient to combine with these domestic responsibilities is found in the self-employment sector, which allows for significant flexibilities in the management of time between domestic activities and market activities. As for the male, there appears some overlap at early years in the proportion of earnings from wage income and self-employment incomes. Initially, at childhood, the self-employment income appears to be slightly higher than the wage income, which is near zero. The earning from self-employment at this tender age is a reflection of existence of child labour. This is canter-productive to the development of the human capital of the youth. From age 25 years, males earning from wage employment begins to exceed earnings from self-employment. However, at old age, starting from 67 years, the earnings from wage employment start to fall short of earnings from self-employment (Fig 6.22A & 6.22B). In Nigeria, the retirement age for most wage job is around 65 years. In the absence of old age social security in the country, it is common at this age for individuals to start considering

alternative self-employment activities that is capable of continuing to generate labour income for survival.

It is further observed that the peak of earnings from wage employment and self-employment for male and females differs significantly. For both male and female, the peak of self-employment is reached earlier than the peak of wage employment. However, at the self-employment peak for male, the earning from wage employment is higher than earning from self-employment. For female, earnings from wage employment are still rising at the peak of self-employment earnings, though lower. Earnings from self-employment for males peaked at age 37 years, with average income of #₦483,254, while wage employment earnings peaked at age 49 years, with average income of ₦818,674 (Fig. 6.22A). For females, the self-employment earnings reached the peak at 44 years, with average income of ₦536,529, while female wage employment earnings reached the peak at age 53 years, with per capita income of ₦310,628 (Fig. 6.22B). Circumstance that forces Nigerians to further engage in labour income jobs, especially self-employment at old age, does not augur well for the human development index of the country. Exploring the creation of social security instruments should be given priority is the scheme of public policy measures in the country.

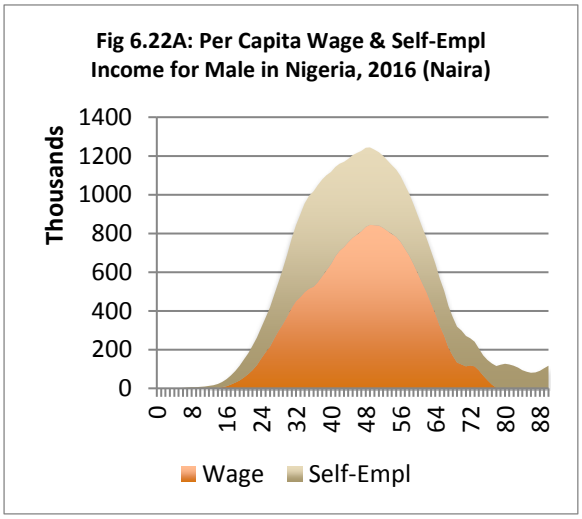


Fig 6.22A: Per Capita Wage & Self-Empl Income for Male in Nigeria, 2016 (Naira)

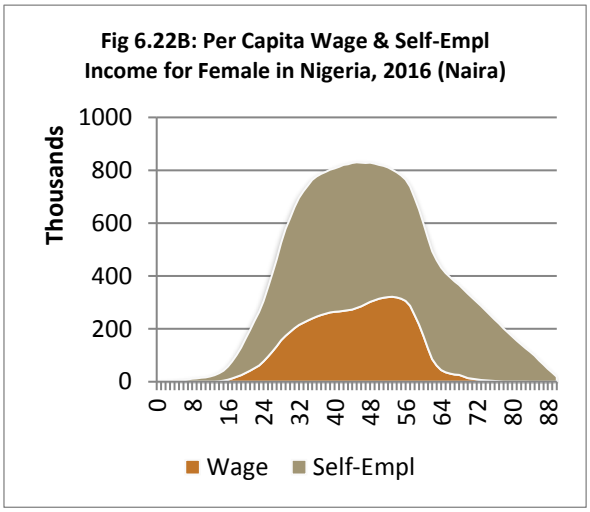
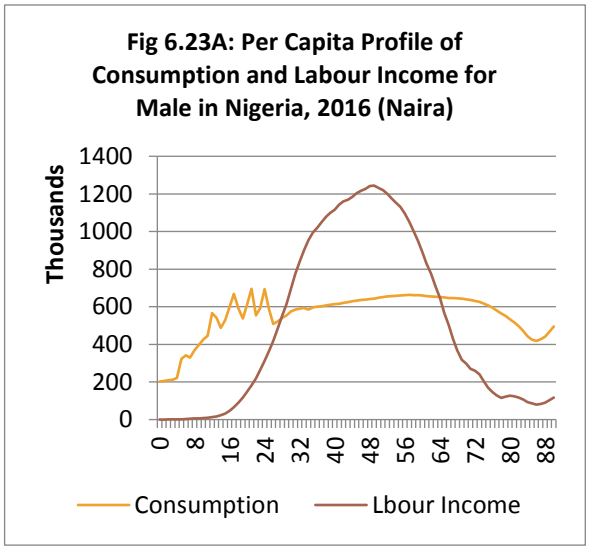
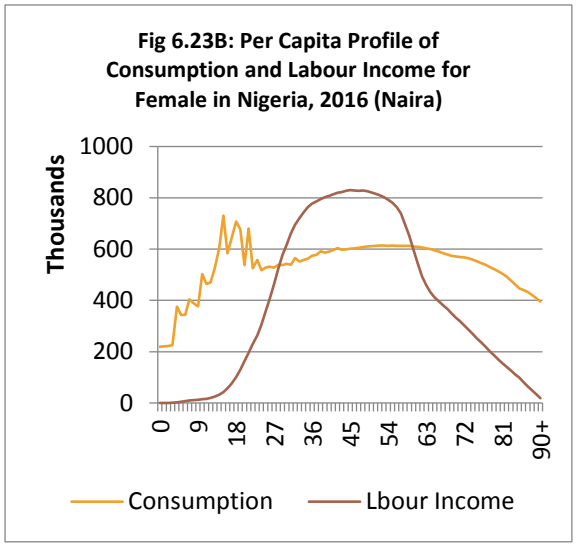


Fig 6.22B: Per Capita Wage & Self-Empl Income for Female in Nigeria, 2016 (Naira)

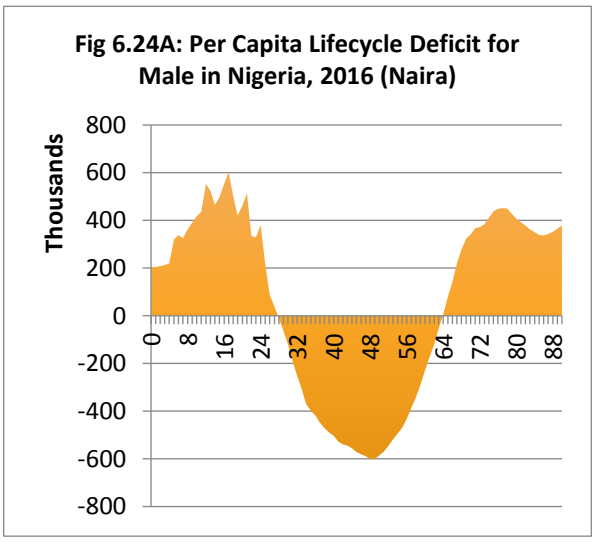
Economic Lifecycle Deficit

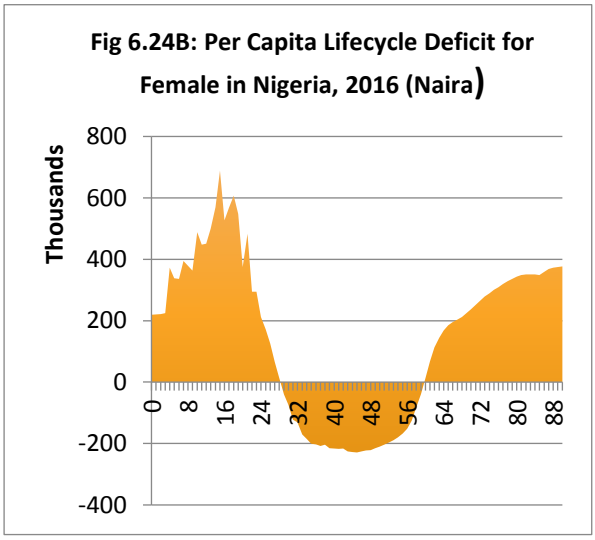
Presented in Figs. 6.23A & 6.23B are the combination of consumption and labour income profiles for males and females, respectively. The lifecycle deficit for males and females cross to surplus at the same age of 28 years and 29 years, respectively, and ended at different period. The male surplus lasted for 36 years, terminating at age 64 year, while it lasted for 31 years for female, terminating at age 60 years. Also the gap between labour income and consumption is greater for males than for females.





The obvious outcomes of the gender disaggregation are that the magnitude of per capita lifecycle deficit and surplus differs between the male and female. The economic lifecycle profiles are presented in figures 6.24A & 6.24B for male and female, respectively. This is computed by subtracting mean labour income from mean consumption at each age for each gender.





To throw adequate light on the burden implication of the lifecycle deficit profile for male and female, we present the aggregate economic lifecycle profiles in figures 6.25A and 6.25B, respectively. Most countries always have lifecycle deficit since labour income is usually insufficient to offset all consumption expenditure within the country. The aggregate economic lifecycle for both males and females show relatively higher deficits for children to the tune of about ₦22.0trillion and ₦22.16trillion, respectively. The elderly economic lifecycle deficits for male and female are ₦811.6billion and ₦910.8billion, respectively. However, the male contributes the bulk of the economic lifecycle surplus for the country. The male contributes ₦9.94trillion economic lifecycle

surplus, representing around 70.9% of the total economic lifecycle surplus. The female only accounts for about ₦4.1trillion economic lifecycle surplus, representing around 29.1% of the total economic lifecycle surplus.

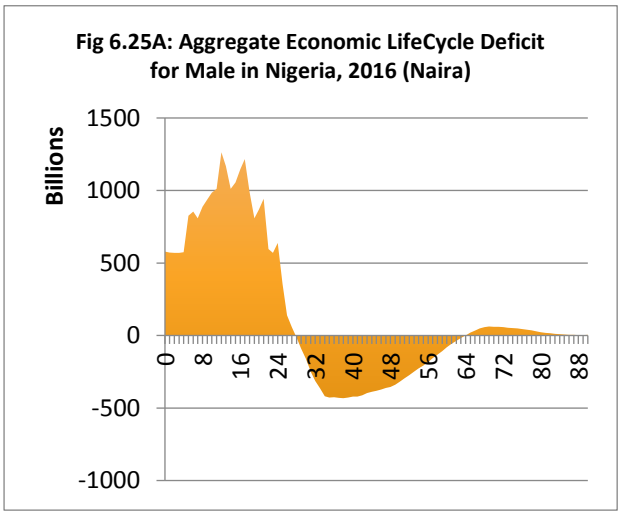


Fig 6.25A: Aggregate Economic LifeCycle Deficit for Male in Nigeria, 2016 (Naira)

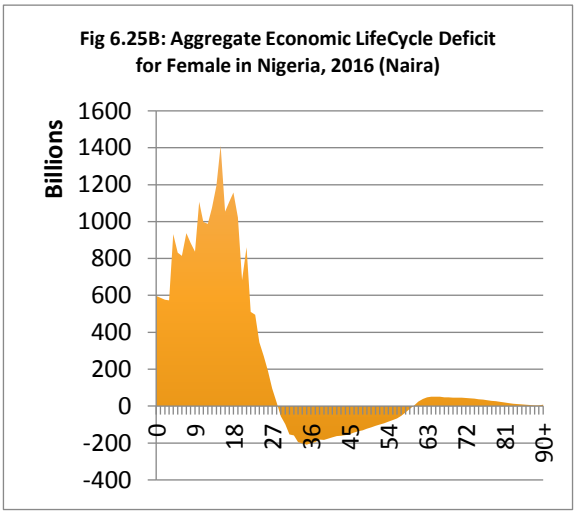


Fig 6.25B: Aggregate Economic LifeCycle Deficit for Female in Nigeria, 2016 (Naira)

Economic Support Ratio and Demographic Dividend by Gender

Support Ratio: Similar to the aggregate shape of the effective workers and effective consumer, the pattern for male and female exhibited the same shape. The effective consumer initially consistently lies above the effective producers up till year 2002 when it dropped below for male, while it dropped below for female in year 2001. The respective years represents the turning points for the support ratio from a declining trend to an increasing trend for male and female (Fig 6.26A & 6.26B).

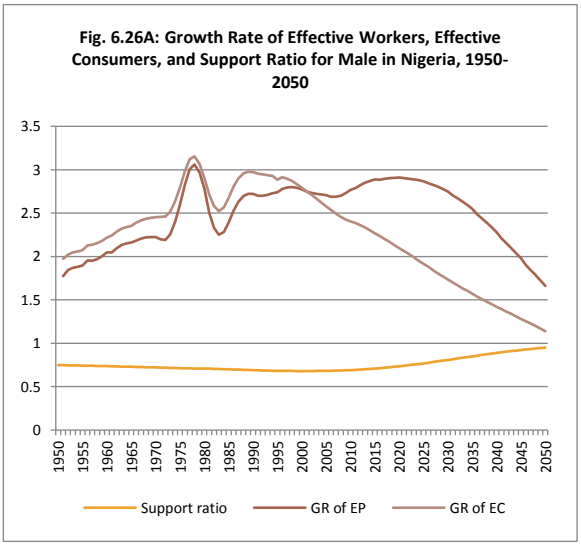


Fig. 6.26A: Growth Rate of Effective Workers, Effective Consumers, and Support Ratio for Male in Nigeria, 1950-2050

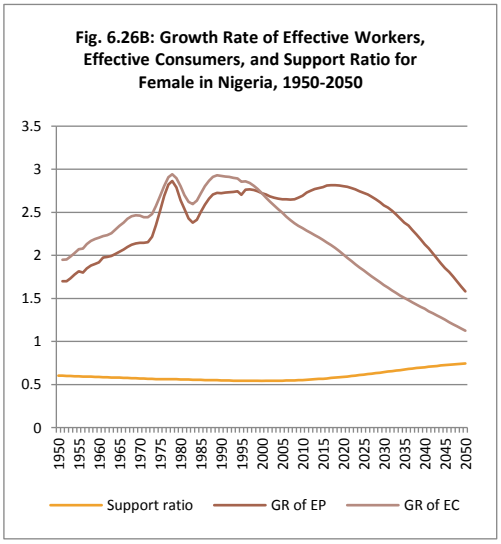
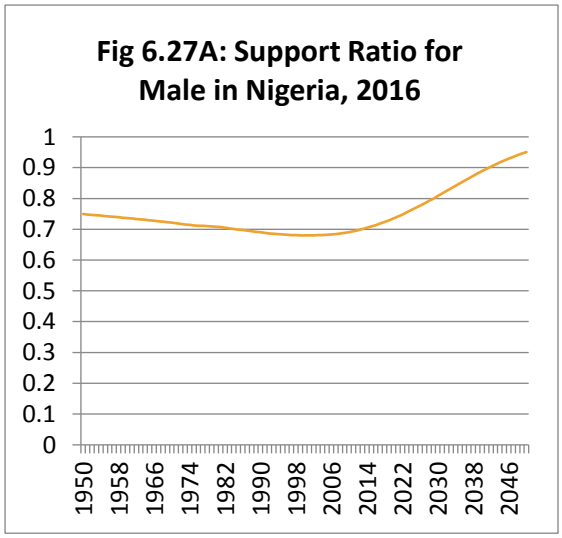
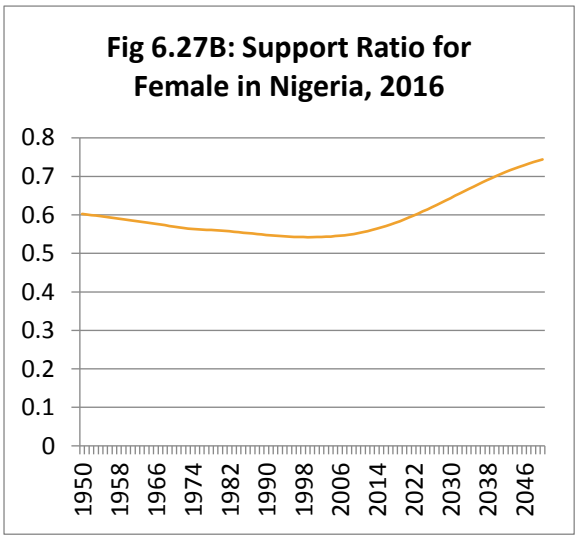


Fig. 6.26B: Growth Rate of Effective Workers, Effective Consumers, and Support Ratio for Female in Nigeria, 1950-2050

As Nigeria undergoes demographic transition from child boom to working age boom, the support ratio, which is the ratio of the effective number of producers to the effective number of consumers begins to vary. The analysis of the economic effect of changes in the male and female population age structures, reveal a deferring pattern. The variation

in the support ratio for males and females differs significantly. The rising support ratio in Nigeria is applicable to both male and female. The rise of the support ratios appears to have started earlier for females from 2001 than for males in 2002. That is, the declining trend in the support ratio turned to positive/increasing for female in 2001 while for male it turned positive/increasing for male in 2002 (Fig. 6.27A & 6.27B).





The door for the enjoyment of the first demographic dividend opened for male and female at different times, as the growth of support ratio turned positive at different years, indicating improvements in the situations of workers in different sex categories. The first demographic dividend for Nigerian males and females, drawn from the difference between the growth rates of the number of effective male/female producers and effective male/female consumers is presented in Figures 6.28A & 6.28B. From 1998, the population age structure of female shows that Nigerian females have started contributing to the first demographic dividend, albeit marginally at the onset. It is expected that the support ratio for male will begin to decrease from the year 2031, which explains the subsequent decline in the DD curve in Fig 6.28A. For females, the support ratio will begin to decline in 2029, which explains the subsequent decline in the DD curve in Fig. 6.28B.

The DD commenced in 2002 for males and in 2001 for females, when it turned positive for each gender. These respectively represent the turning points of the economic support ratios from initial downward trend to an increasing trend for males and females. The DD is expected to reach its peak at different times for males and females before declining. While the DD for males reaches its peak in 2031, the peak of the DD for females is reached earlier in 2029. However, the positive DD window remains open well beyond 2050 for both genders (Fig. 6.28B).

Fig. 6.28A: First Democratic Dividend for Male in Nigeria 1950-2050

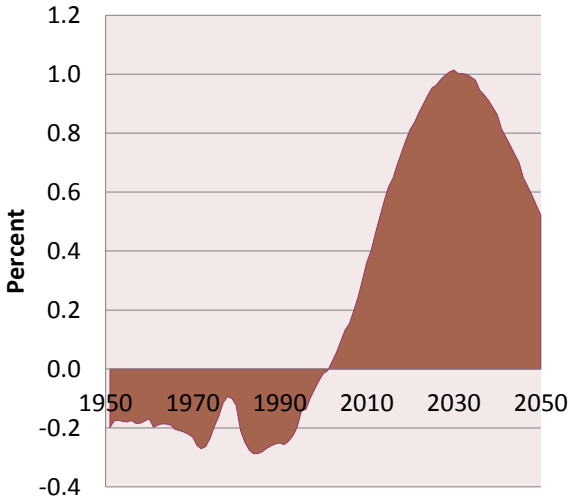


Fig 6.28B: First Democratic Dividend for Female in Nigeria 1950-2050

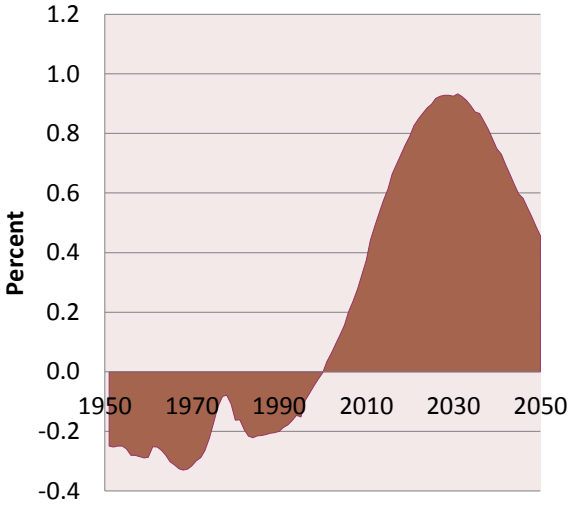


Table 2: Aggregate Labour Income, Consumption, and Life Cycle Deficits in Nigeria, 2016 (Billion Naira)										
Age Group	**0-17**		**18-35**		**36-60**		**60+**		**Total**	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Life Cycle Deficit	**16039.9**	**16511.3**	**3923.6**	**4579.7**	**-7788.2**	**-3011.6**	**699.5**	**905.9**	**12874.8**	**18985.3**
Consumption	**16554.6**	**17208.6**	**16164.4**	**15313.0**	**9811.5**	**9312.5**	**2397.8**	**2423.1**	**44928.3**	**44257.2**
Public	1227.3	1192.7	985.3	918.2	456.3	497.3	115.4	130.4	2784.3	2738.7
Education	30.7	21.8	204.0	142.9	6.0	39.4	0.0	0.0	240.7	204.1
Health	33.9	34.4	46.2	47.2	37.1	36.8	13.6	15.7	130.8	134.2
Other	1162.7	1136.5	735.0	728.1	413.2	421.1	101.8	114.7	2412.7	2400.4
Private	15327.3	16015.8	15179.1	14394.8	9355.2	8815.2	2282.4	2292.7	42144.0	41518.5
Education	4280.2	4407.5	1716.4	1308.6	0.0	0.0	0.0	0.0	5996.7	5716.1
Health	1343.3	1301.7	1436.8	1409.4	1146.6	1159.8	308.8	343.1	4235.6	4214.0
Other	9703.8	10306.6	12025.9	11676.8	8208.7	7655.4	1973.5	1949.6	31911.8	31588.4
Labour Income	**514.7**	**697.3**	**12240.7**	**10733.3**	**17599.8**	**12324.1**	**1698.3**	**1517.1**	**32053.5**	**25271.9**
Wage Income	94.0	59.5	6224.3	3030.1	11025.8	4296.8	931.1	151.9	18275.1	7538.2
Self-Employment Income	420.7	637.9	6016.4	7703.2	6574.0	8027.3	767.3	1365.3	13778.4	17733.7
Population	43725502	41888.5	27640659	26835.3	15539418	15520.6	3829703	4227.2	90735282	88471.7
Proportion of Total Population	48.2%	47.3%	30.5%	30.3%	17.1%	17.5%	4.2%	4.8%		

Table 6.3: Year and Value of Dependency in Nigeria, 2016						
	Start Year of Surplus	End Year of Surplus	Length of Surplus	Total Surplus (Tril Naira)	Total Child Deficit (Tril Naira)	Total Elderly Deficit (Tril Naira)
Total	**29**	**62**	**34**	**13.70**	**43.83**	**1.63**
Male	**28**	**63**	**36**	**9.94**	**22.00**	**0.81**
Female	**29**	**59**	**31**	**4.09**	**22.16**	**0.91**

The first 28 years for the entire country is characterized by life cycle deficit, which is similar for female. However, the male life cycle deficit is for the first 27 years. The life cycle surplus commences from the age 29 for the country and lasts till age 62 years, implying 34 years of surplus. The total surplus for this period amounts to ₦13.7 trillion, while the child deficit and elderly deficits are ₦43.83 trillion and ₦1.63 trillion, respectively. However, the length of surplus for male and female differs, as the starting year of surplus for male (28years) is earlier than that of female (29 years). While the male surplus starts earlier at age 28 years, it lasts longer till age 63, the female surplus commences at age 29 and terminates at age 59 years. The child deficit for both male and female is more or less the same, the elderly deficit is smaller for male (₦810 billion) compared to females (₦910 billion). Male contributing N9.94 trillion while female contributes ₦4.09 trillion accounts for the bulk of the life cycle surplus.

6.2 The DemDiv Approach

6.2.1 *Background*

The DemDiv methodology is a modelling tool with a structure that depicts the nature of the demographic dividend as a window of opportunity created by demographic change with the consequent economic benefit as the dividend itself. It was developed as a user-friendly, evidence-based tool that can inform policymaking in high-fertility countries of the potential benefits of the demographic dividend and increase their support for investments in the multisectoral policies required to achieve those benefits (Moreland *et.al.* 2014).

The DemDiv model applies a statistical modelling approach which includes multiple linear regression estimates from a data base for several countries to project demographic and economic changes based on its demographic and economic sub-models describing demographic and economic changes with equations to estimate employment, investment and GDP. The demographic sub-model projects child mortality, dependency ratio, fertility, population size and age structure, and life expectancy. These demographic calculations then feed into the economic model, which consists of three equations describing capital formation, employment growth, and total factor productivity as a function of age structure and other social and economic variables. The components of both sub-models interact over the projection period to describe the combined effects of changes in both sub-models, which ultimately project GDP and GDP per capita. Figure 6.2.1 shows the general structure of DemDiv Model.

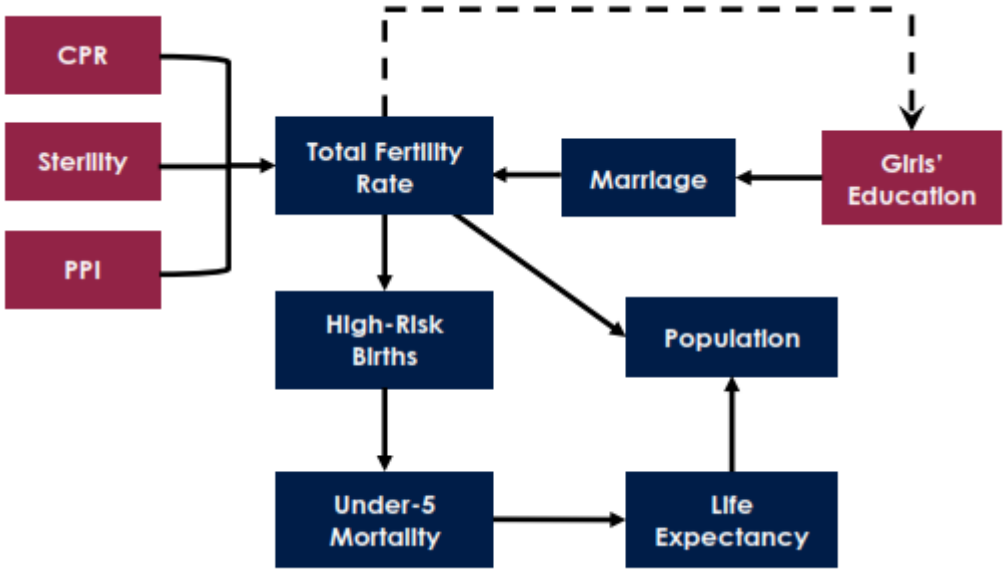
In the model, policy variables that stimulate demographic changes include the close determinants of fertility such as the contraceptive prevalence rate (CPR), natural sterility and post-partum insusceptibility (PPI) as well as education (school life expectancy). On the other hand, economic policy variables include indicators for financial market efficiency, information and communication technologies (ICT) infrastructure, the quality of public institutions, openness to trade as measured by imports, labour market flexibility. Table 6.2.1 contains the policy inputs variables and model outputs variables of DemDiv Model.

DemDiv model allows its user to design up to four future scenarios based on different policy inputs. The first, which is called the *base scenario*, is a situation where there is little change compared to the present. This scenario can be adjusted so that all policy variables remain constant at base year levels over the entire projection period or they improve gradually, perhaps reaching historic rates of change. Other three policy scenarios are designed in a way that future target values can be set for the policy inputs in any desired combination that ensure that the demographic dividend is seen clearly.

The study stimulates four scenarios to interact changes in policy over a 40-year period, setting 2016 as the base year for the projections and 2056 as the end of target years, given the availability of data, especially from the 2013 National Demographic and Health Survey. The policy indicators include school life expectancy, close determinants of fertility as well as five pillars of the global competitive index (GCI). Each scenario is defined by the path of these indicators as they progress from 2016 values to 2056 values.

Figure 6.2.1: Structure of DemDiv Model

Demographic Sub-Model



Economic Sub-Model

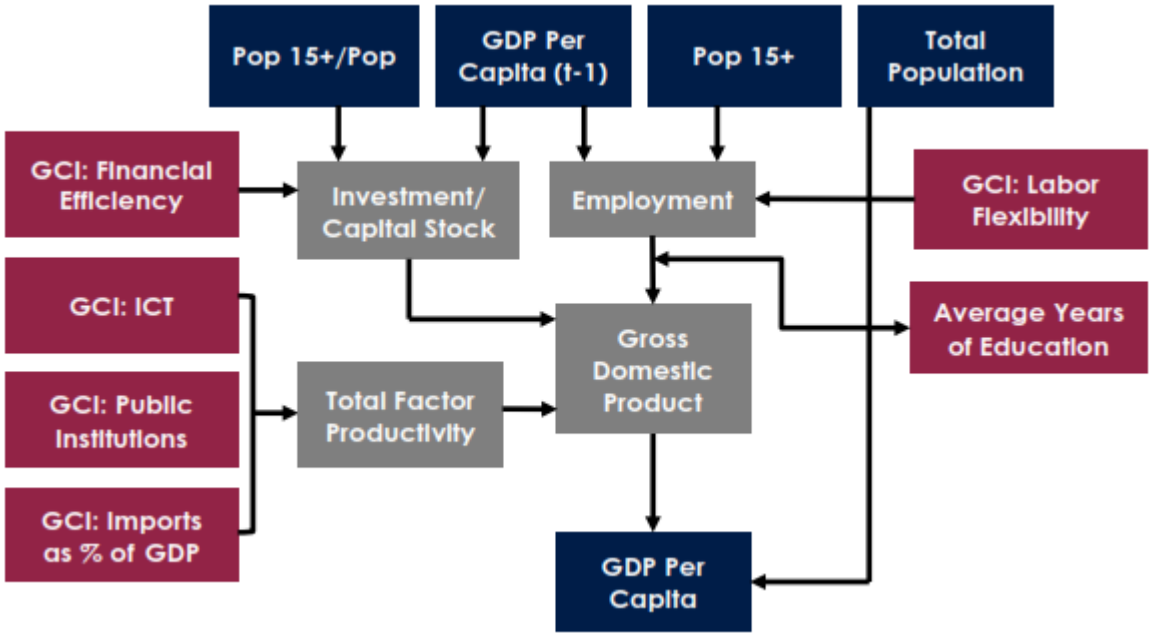


Table 6.2.1: Policy inputs and model outputs variables of DemDiv Model

Policy Inputs	Model Outputs
Economic o Financial market efficiency o Labour market flexibility o Public institutional quality o Imports as % of GDP o ICT use o Average years of education	**Economic** o Labour force by age and sex o Employment o Investment (new capital formation) o GDP growth rate o GDP and GDP per capita
Demographic o Contraceptive prevalence rate (CPR) o Postpartum insusceptibility o Natural Sterility	**Demographic** o Population by age and sex o Dependency ratio o Infant, child and maternal mortality o Fertility rate o Life expectancy at birth

With an estimated population of approximately 195 million, Nigeria is the most populous country in Africa and the 7th most populous country in the world. In deriving at the policy scenarios, therefore, averages of the first (China in East Asia), fourth (Indonesia in South East Asia/Oceania) and sixth (Brazil in Latin America) most populous countries of the world were adopted as the targets for the indicators. It is assumed that these countries were at the level where Nigeria aspires to be by 2056 for various indicators.

6.2.2 *Scenarios for Policy Changes Interaction*

The four policy scenarios considered alongside with their implications on harnessing demographic dividends in Nigeria include:

i. Basic Scenario (Policy Intervention unchanged)

This scenario, also known as baseline scenario, reflects persistent slow economic performance and persistent high child dependency ratio over time. It is the scenario that assumes that no policy option is adopted. Targets for economic, education and fertility indicators would only improve slightly. The basic indicators for education, economic and family planning target is premised on Nigeria attaining only 30% of the average target of the selected countries' targets of economic and education progress required to achieve 2056 model targets.

ii. Economic Emphasis (Economic Policy Only)

This policy scenario represents a situation where policies, systems and resources are expended to fully implement economic programmes necessary to attain the ideal long-term development goals. Conscious and concerted efforts are put in place to address economic constraints to socio-economic development. By putting more emphasis on economic variables that could boost her global competitive index economically, Nigeria attains additional 5% improvement to what was attained under basic scenario. This led to increase in the imports as a percentage of GDP, labour market flexibility, financial market efficiency, ICT use and public institutions.

With the accelerated economic growth that boost employment generation and reduce poverty incidence, education indicators change slightly to cater for likely multiplier effects of improving economic performance on education and family planning indicators.

iii. Social Emphasis (Economic and Education Policy Only)

The policy scenario lays more emphasis on economic and education policy that could put the countries on the path achieving their targeted combined emphasis indicators. It assesses the net impact of increases in investment in education while making modest interventions in investments in the economic sector. In Nigeria, with more efforts exerted on education sector, the country recorded a progress in all indicators more than what was achieved under economic emphasis. The amount of the progress is equivalent to 50 percent of the progress needed to achieve the respective scenario target by 2056.

iv. Combined Emphasis (Economic, Education and Fertility Policy)

As the name implies, the policy option combines economic, education and fertility policy to harness demographic dividend. Combined emphasis policy strives to achieve increase investment, employment generation, poverty reduction, reduction in unplanned birth, improvement in human development. The policy calls for synergy effort in economic, education and fertility to achieve demographic dividend. It is considered as best policy scenario capable of achieving socio-economic transformation of the country. In order to achieve this target, Nigeria benchmarked her performance on the average performance of the earlier identified economies. The synergy of the three policies scenarios (economic, education and fertility) position Nigeria among the middle-income countries of the world.

6.2.3 *Baseline and Anticipated Scenario Indicators*

The specific assumptions which informed the choice of the target indicators that are built into the respective scenarios are described below.

I. Education Indicators

Central to the efforts to reap demographic dividend is the promotion of access to education because of its wide-ranging impacts on economic, social and political development of the country. Educating females, especially at the secondary and higher level, plays a leading role in fertility reduction by delaying marriage and the onset of childbearing. More so, they are more likely to use healthcare services for themselves and their children. Education also helps to increase the quality and productivity of the labour force. Hence, it is important that we support them and provide them with the resources they need to reach their full potential. The two indicators the model used to show the impact of education on development are expected years of education and the mean years of schooling for males and females. Both indicators were adopted from 2016 Human Development Report published by UNDP and the 2016 figures were used as the baseline for the analysis.

Expected years of schooling are the number of *years* during which a child entering infant *school* can expect to spend in full-time and part-time *schooling* in the course of their life cycle, based on the *school* enrolment rates of the time. Specifically, it refers to the total number of years of schooling a six-year-old child today can expect to receive, assuming that the

probability of her / him being enrolled in school at future ages is equal to the current enrolment rate at those ages. These *expected years* are calculated on the young people less than 30 *years* old. These were 9.2 years for females and 10.8 years for males. On the other hand, **mean years of schooling** is the average number of years of schooling for the adult population ages 25 and above. These were 4.9 years for females and 7.1 years for males. The notable dichotomy between expected years of schooling and mean years of schooling shows that school enrolment rates are much better for the younger generations than the older ones in Nigeria. However, the current challenge is that quality education is still out of reach for many young people which prevent them from being empowered with education and appropriate skills to lead a productive life.

For the Basic Scenario, the projection was that the country would achieve 30% of the progress necessary to attain the best target expected years of schooling and mean years of schooling for 2056. The expected years of schooling under this scenario are 10.67 years for females and 11.67 years for males. The mean years of schooling would be 5.71 years for females and 7.37 years for males. The levels of education in the Economic Emphasis scenario were increased by 5% above the Basic values to cater for the multiplier effect of economic growth on education. This translates to 10.92 expected years of schooling for females and 11.82 for males. The mean years of schooling would increase to 5.85 mean years for females and 7.42 years for males. In the Social scenario, it was assumed that the country would improve more on education outcomes of its population and that the country would attain about 50% of the progress that it needs to make by 2056 to attain the education levels that its benchmark countries currently exhibit. For expected years of schooling, this would translate to 11.65 years for females and 12.25 years for males. For the mean years of schooling, the target figures would increase to 6.25 years for females and 7.55 years for males. In the Combined scenario, Nigeria was projected to prioritise human capital development and ensure that it attains the education levels currently achieved by the benchmark countries. The target values for this scenario are 14.1 years as expected years of education for females and 13.7 years for males and 7.6 years as target values for mean years of education for females and males have 8 years.

II. Close Determinants of Fertility

There are three close determinants of fertility that were considered in the model. These are contraceptive prevalence rate (CPR) for married women, the period of postpartum insusceptibility (PPI) in months and sterility (percent all women 45-49). These family planning issues are vital for fertility decline since they enable women and their partners to plan their family sizes. Since the most recent Demographic and Health Survey in Nigeria is the conducted in 2013, its figures were used as the baseline (2016) for the analysis.

Contraceptive Prevalence Rate

The proportion of married women using both modern and traditional contraception was adopted in this section. The baseline contraceptive use levels for 2013 were 9.8% and 5.4% for modern and traditional methods. In the Basic scenario, it was projected that modern contraceptive use would increase to 24.23% by 2056 while the usage of traditional methods would continue to decrease, though marginally, and assumed that 4.98% of women would still be using traditional methods by 2056. For the Economic Emphasis scenario, the modern contraceptive usage level will reach 26.64% and the traditional method will reach 4.91%. In the Social scenario, it was projected that the use of traditional methods would continue to

decrease, and assumed that only 4.7% of women would be using it by 2056 while that of the modern method will be 33.85%. Under the Combined scenario, the projection was that the country would intensify its efforts to address barriers to access and use of family planning and ensure that more women demand for it such that modern contraceptive usage would increase to 57.9% while the usage of traditional methods would eventually reduce to 4%.

Postpartum Insusceptibility and Sterility

The duration of postpartum insusceptibility (PPI) is the period after the birth of a child when a woman's risk of pregnancy is very low because she is lactational amenorrhoeic and / or experiencing postpartum sexual abstinence. The baseline figure has 12.6 months as the median duration of insusceptibility. It was projected that the duration would be decreasing since postpartum sexual abstinence has been continually declining while increases in women participation in the labour force will equally reduce the breastfeeding. In the Basic scenario, PPI will reduce to 9.96 months and in the Economic Emphasis scenarios, it was projected to slightly reach 9.52 months while further reducing to 8.2 month in the Social scenario. It was projected to reduce much lower 3.8 months in the combined scenario.

The measure of sterility is the proportion of women in union who remain childless at the end of their reproductive years (ages 45–49). The proportion of women in Nigeria who were childless in the 45–49 age group was 3% in 2016. However, the belief that improvement in both family planning and broader sexual and reproductive health services help to reduce infertility levels even if negligibly does not strictly hold because those in this category have been declared infecund, hence, the figure hardly changes over time. Therefore, the 2056 target for all the scenarios still remains 3%.

III. Economic Indicators

The DemDiv economic sub-model captures five indicators that reflect the overall economic situation. These indicators served as inputs to project the performance of the economy on a set of outputs. They were all indicators of the Global Competitiveness Index (GCI), published in Global Competitiveness Report by the World Economic Forum (WEF) which assesses the strengths and weaknesses of national economies by analysing the efficiency of various sectors and their contributions to productivity of the economy over time. There are twelve pillars in the GCI out of which DemDiv Model made use of five either partly or wholly. These are indices that measure quality of public institutions, imports as a percent of GDP, labour market flexibility, financial market efficiency and Information and Communication Technology (ICT) usage.

The 2016-2017 CGI Report categorised countries' development into three distinct and two transitory stages. For the distinct stages, stage 1 countries were classified as factor-driven economies and they were 35 in number; stage 2 were efficiency-driven in nature and there were 30 economies therein; also 37 economies that were classified as innovation-driven were in stage 3. For the transitory stages, 17 economies were in transition from stage 1 to stage 2 while 19 economies were transiting from stage 2 to stage 3. Out of 138 countries, the basic requirements for Nigeria shows that it ranks 118th for institutions, 132nd for infrastructure, 108th for macroeconomic environment and 138th for health and primary education. The overall GCI index of 127, out of 138, puts Nigeria among those economies transiting from stage 1 to stage 2. However, all the three benchmarking countries for our analysis are placed

among the stage 2 economies which their Nigeria is still transiting to. The baseline figures were obtained from 2016-2017 Global Competitiveness Report except for the share of imports to GDP which was obtained from the 2016 National Accounts published by National Bureau of Statistics (NBS). For this section of the analysis, however, the 2056 target for the Basic scenario still remain as 30% of the average target of the benchmark countries' targets while the 2056 target for the Economic emphasis, Social emphasis and Combined scenarios is fixed at the current average of the benchmarking countries so as to emulate the best practices in governance achieved by these countries.

Public Institutions

This involves the accountability mechanisms and strategies that have been laid to promote and protect both local and foreign investments. DemDiv model projects Nigerian public institutions' capacity to impose accountability in service delivery and the use of public resources and to ensure the protection of lives and property. Nigeria ranked 118th out 138 and had baseline score of 3.3 out of 7, but it was projected that investments will improve slightly under the Basic scenario to 3.48. The 2056 target for other scenarios, on the other hand, is fixed at 3.9 which is the current average of the benchmarking countries.

Share of Imports as percentage of GDP

The growth rate of import remains unbalanced in the past five years in Nigeria and this continues till 1st quarter of 2016 when import recorded a negative growth rate of -38.78%, nonetheless, the value of import of goods and services rose up to 34.22% in last quarter in 2016. High levels of imports (as percent of GDP) can undermine socio-economic development, capital formation and prospects for mass creation of jobs locally. Specifically, NBS held that the increase of import is attributed to high importation of boilers, appliances and machinery. However, imports in the past five years averaged at 14.1% of GDP. In 2016, the import share increased from 10.7% to 11.5%. As the country continues to build infrastructure and revamp its manufacturing sector, as envisioned in Economic Recovery and Growth Plan (ERGP), it will continue to rely on imports to stimulate economic development. As such, imports as a share of GDP was projected to modestly grow under the Basic scenario (from 11.5 to 15.55). In order to achieve and sustain the projected growth, the share of imports as percent of GDP is projected to increase to 25% under the Economic Emphasis scenario. The same targeted option was retained for this variable under the Social Emphasis and Combined scenarios.

Labour Market Flexibility

This indicator exerts positive effect on employees' performance as well as on the country's attractiveness high-quality skills. It also affords workers shifting from one economic activity to another seamlessly and at minimal cost while allowing for wage variations without much social interruption. More importantly, it provides for equity between women and men in the work and business environment. Among the modelling indices (CGI), this indicator is Nigeria's best, the country ranked 37 out of 138 economies and scored 4.5 out of 7. It is worthy of note that this baseline index was higher that which was the same as that of China while it is higher than that of Brazil (3.7) and Indonesia (3.8), it is also higher than their average (4.0). Notwithstanding this feat, the labour market flexibility was still projected to slightly increase to 5.0 under the Basic scenario but this is without further change being projected under the remaining scenarios.

Financial Market Efficiency

This indicator involves channelling resources to those enterprises and other investments that promise highest return and to achieve this, the economy requires sound and robust financial system that can guarantee adequate capital for private-sector investments. Also, the financial sector needs to be reliable, transparent and properly regulated to protect investors and other actors in the economy. The financial market will be efficient when there is sound banking sector, well-regulated securities exchange, venture capital and so on. Nigeria ranked 89 out of 138 and scored 3.7 out of 7 under efficient financial market. With a rapidly growing financial market in Nigeria and a baseline value of 3.7, the sector is projected to sustain the momentum and was therefore projected to increase to 3.79 under the Basic scenario which equals 30% of the improvement Nigeria needs to achieve to reach the current average level (4.0) for benchmarking countries, which is the target for other scenarios.

Usage of Information and Communication Technology (ICT)

ICT usage measures the dexterity with which an economy adopts current technologies to boost its industrial productivity, with specific emphasis on its capacity for its complete leverage in production processes as well as other daily activities. To be specific, ICT usage involves proportion of the population using internet; the number of fixed broadband internet subscriptions per 100 people; internet bandwidth (kb/s per user); and the active mobile broadband subscriptions per 100 persons. Since the advent of mobile phone technology in 2001, Nigeria has made substantial progress in ICT usage. Though, the progress is mainly private-sector driven, its contribution to economic growth is substantial. However, Nigeria ranked 105th among 138 economies and scored 3.1 which formed the baseline value for this indicator. It was projected that progress in this area would continue even under the Basic scenario and it will improve to 3.37 while predicted to reach 4.0 under the Economic Emphasis scenario. The value is expected to remain the same for the Social Emphasis and Combined scenarios.

The specific assumptions which informed the choice of the target indicators that are built into the respective scenarios are described and presented in Table 6.2.2. DemDiv model uses some other baseline indicators for various outputs of the model. These indicators were broadly categorized as health and economic indicators. Details of such indicators are contained in Table 6.2.3. The population figures used were from the 2017 Revision of World Population Prospects, UN Population Division.

Table 6.2.2: Baseline and Target Indicators for Policy Scenarios

Policy Scenario and Year		Baseline	Basic	Economic Emphasis	Social Emphasis	Combined	Data Source
		2016	2056	2056	2056	2056	
Education Indicators	Female Expected Years	9.2	10.67	10.915	11.65	14.1	2016 Human Development Report of UNDP
	Male Expected Years	10.8	11.67	11.815	12.25	13.7	
	Female Mean Years	4.9	5.71	5.845	6.25	7.6	
	Male Mean Years	7.1	7.37	7.415	7.55	8	
	Both Mean Years	6	6.54	6.63	6.9	7.8	
Close Determinants of Fertility	Modern CPR (Married Women)	9.8	24.23	26.635	33.85	57.9	2013 Demographic and Health Survey
	Traditional CPR (Married Women)	5.4	4.98	4.91	4.7	4	
	Postpartum Insusceptibility (Months)	12.6	9.96	9.52	8.2	3.8	
	Sterility (Percent All Women 45-49)	3	3	3	3	3	
Economic Indicators	Public Institutions (GCI 1A)	3.3	3.48	3.9	3.9	3.9	2016-2017 Global Competitiveness Report of World Economic Forum
	Labor Market Flexibility (GCI 7A)	4.5	5	5	5	5	
	Financial Market Efficiency (GCI 8A)	3.7	3.79	4	4	4	
	ICT Use (GCI 9B)	3.1	3.37	4	4	4	
	Imports % of GDP (GCI 6.14)	11.5	15.55	25	25	25	National Accounts of NBS

Table 6.2.3: Other Baseline Indicators (2016)

Category	Indicator	Baseline Value	Data Source
Health	Percent Married (Female)	71.5	2013 Demographic and Health Survey
	Total Fertility Rate (Female)	5.5	
	Percent Births at Risk	80.4	
	Infant Mortality Rate (Age 0-1)	69	
	Under-5 Mortality Rate (Ages 0-5)	128	
	Maternal Mortality Ratio (deaths per 100,000 live births)	576	
	Female Life Expectancy at Birth	53.8	
	Female-Male Life Expectancy Difference	0.58	
	Contraceptive Effectiveness Modern Methods	0.95	Assumptions
	Contraceptive Effectiveness Traditional Methods	0.5	
Economy	Capital Formation per capita (USD)	265	2016 National Accounts (NBS), 2016 Data (UN Population Division)
	Initial Employment (Ages 15 and older)	52,576,233	2016 Unemployment / Under Employment Report (NBS)
	Initial Employment Growth Rate (Ages 15 and older)	0.99%	2016 Unemployment / Under Employment Report (NBS) 2015 Data
	Gross Domestic Product per Capita (2016 Constant $US)	1,786	2016 National Accounts (NBS), 2016 Data (UN Population Division)
	Ratio of Capital Stock to Pop 15+	4,746	2016 National Accounts (NBS), 2016 Data (UN Population Division)
	Initial GDP Growth Rate	-1.6%	2016 National Accounts (NBS)
	Capital Stock Growth Rate	10.4%	Calculated
	Capital Stock Depreciation Rate	4%	Assumption based on Berlemann and Wesselhöft 2012 Constant
	Labor Force Participation Rate	0.506	2016 Unemployment / Under Employment Report (NBS)

6.2.4 *Results of the Modelling Scenarios*

The results of the four scenario simulations are as presented below. They were categorised along health and economic sub-models' output indicators.

i. Demographic Results

The demographic results reveal the key population and human capital features for the baseline and the projected policy scenarios in 2056.

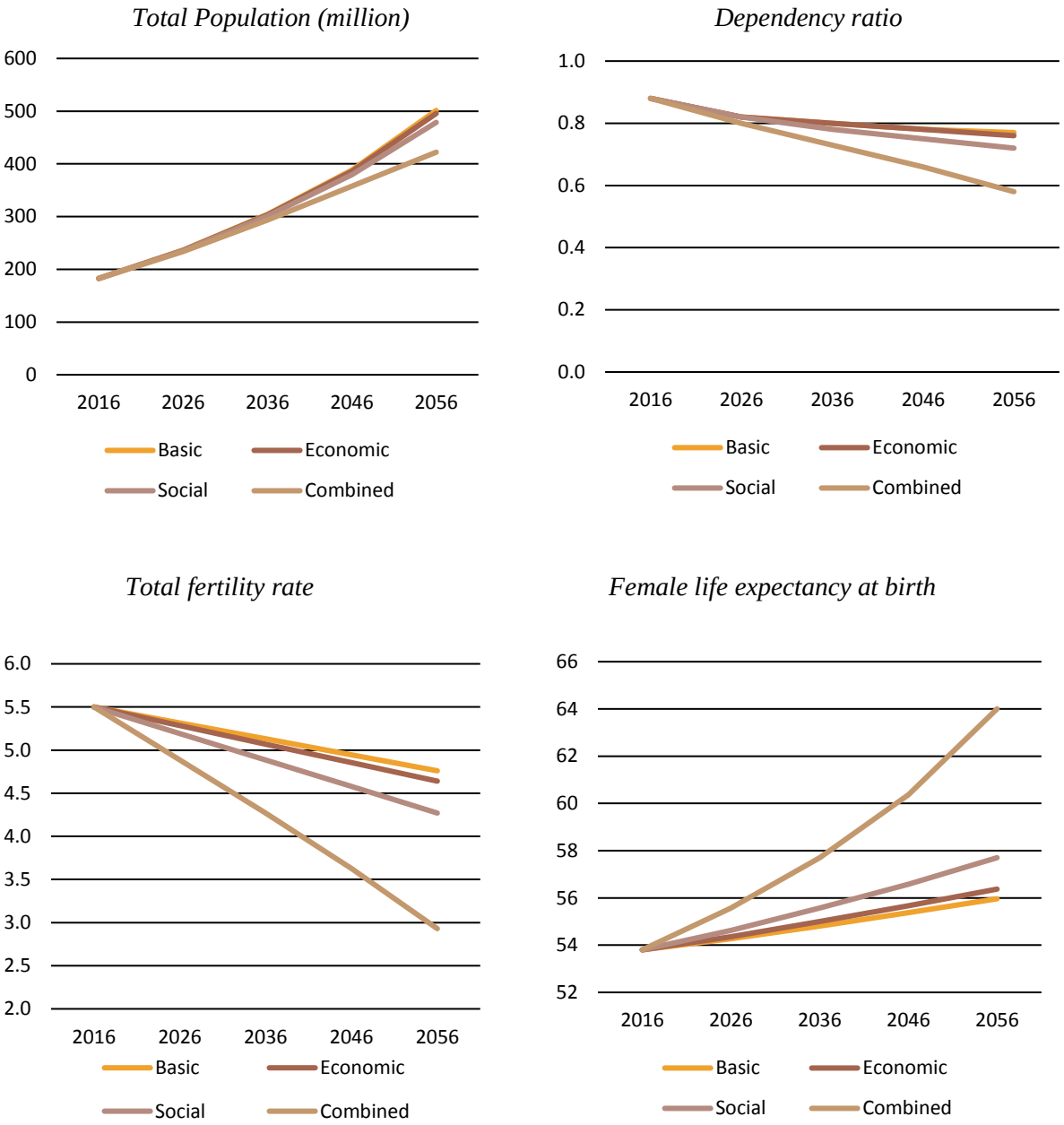
Table 6.2.4: Key Population Dynamics

Indicator	2016	Basic	Economic Emphasis	Social Emphasis	Combined
Total Population	182 million	501 million	495 million	478 million	422 million
Below 15 Population	44%	40%	40%	38%	32%
Ages 15+ Population	56%	60%	60%	62%	68%
Dependency ratio	0.88	0.77	0.76	0.72	0.58
Total fertility rate	5.5	4.8	4.6	4.3	2.9
Female life expectancy at birth	53.8	56.0	56.4	57.7	64.0

Over the 40-year projection duration, Table 6.2.4 shows that Nigerian population increases by 274% from about 182 million to a little above 501 million under the Basic scenario. However, a minimal reduction of the dependency ratio from 0.88 to 0.77 implies a very high child-dependency burden where a whopping 40% of the population 15 years of age. Total fertility rate decreases albeit, slightly from the baseline figure of 5.5 to 4.8, which is a reduction by almost one birth per woman leading to an improved life expectancy at birth for females. This situation is not much different under the Economic Emphasis scenario as all indicators suffers from lack of investment in education and fertility issues.

Implementation of Social Emphasis policies leading to increased girls' education further reduced the fertility to average of 4.3 children per woman, which consequently increased the female life expectancy at birth to 57.7 years with population size reaching about 478 million. With the dependency burden of 0.72, 38% of the population will be to below age 15. Under the more articulated Combined scenario, which provides the best combination of policies and investments that combined the two previous scenarios results in a TFR of 2.9, and total population that is projected to reach about 422 million (about 79 million less than the Basic scenario). The percentage of the population of under age 15 would be 32% while female life expectancy at birth would have reached 64 years. The growth of the key population indicators under different scenario is shown in Figure 6.2.2.

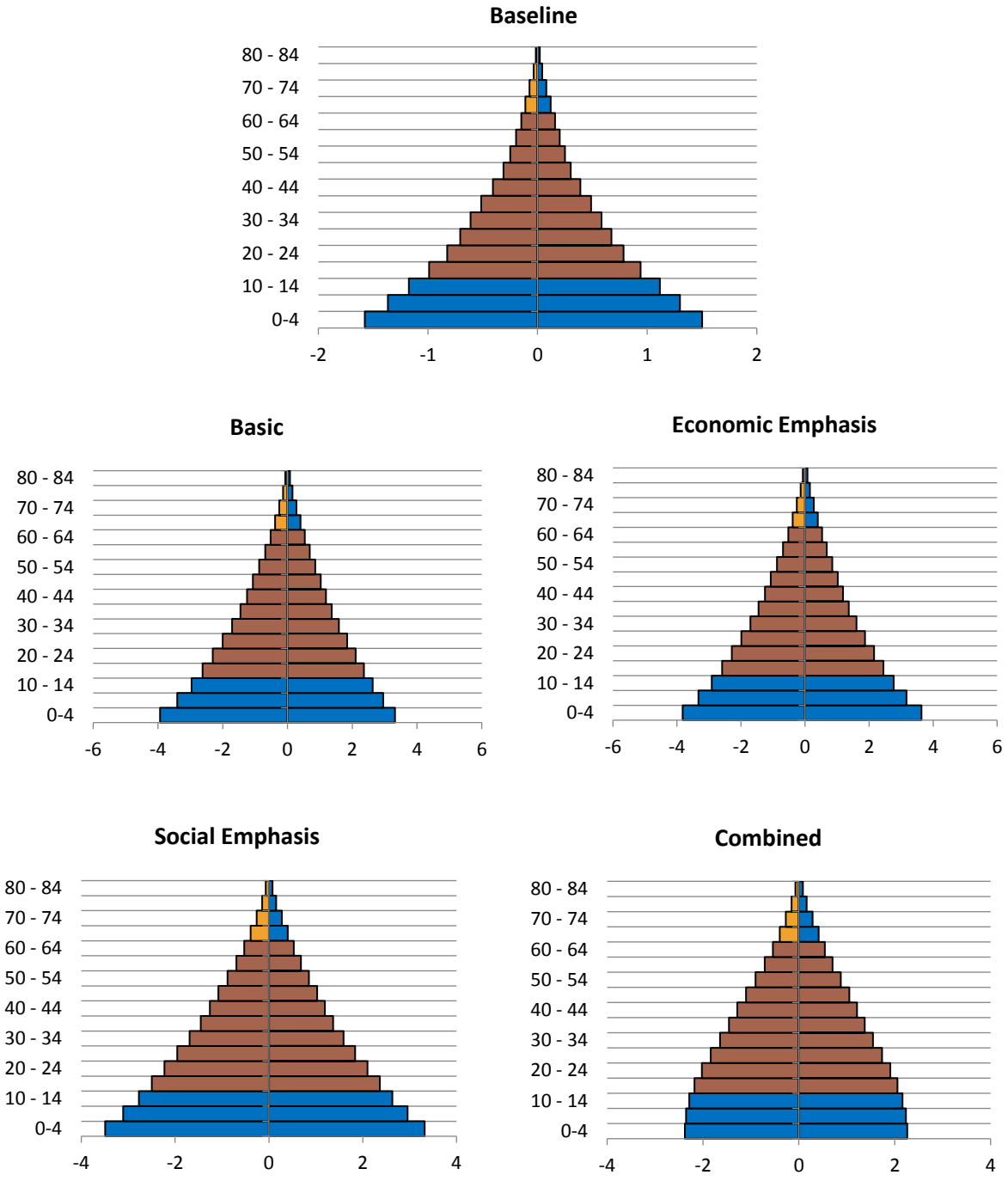
Figure 6.2.2: Trend of key Population Dynamics



Age structure of the population

Constant changes in the age and sex structures of the population is a global phenomenon. This continuous change ensures that countries experience demographic transition over time. The baseline and projected age-sex distribution of the Nigerian population are presented in a successive age pyramids in Figure 6.2.3.

Figure 6.2.3: Baseline and Projected Population Pyramids



The combination of falling mortality and high and rising fertility ensure that the baseline pyramid is more visible. In 2056, however, Basic, Economic and Social Emphasis scenarios are still going to be characterized by significant increase of the total population as noted in Table 6.2.4. The fall in fertility reduction is expected to reduce the pyramid base is only guaranteed under the Combined scenario when Nigeria is to have a broad-based pyramid.

ii. Economic Results

As earlier stated, the demographic results feed into the economic sub-model and interact over the projection period to describe the combined effects of changes in both sub-models, which project GDP per capita, which ultimately generate the demographic dividend. The vital economic sub-model output indicators are as described hereunder:

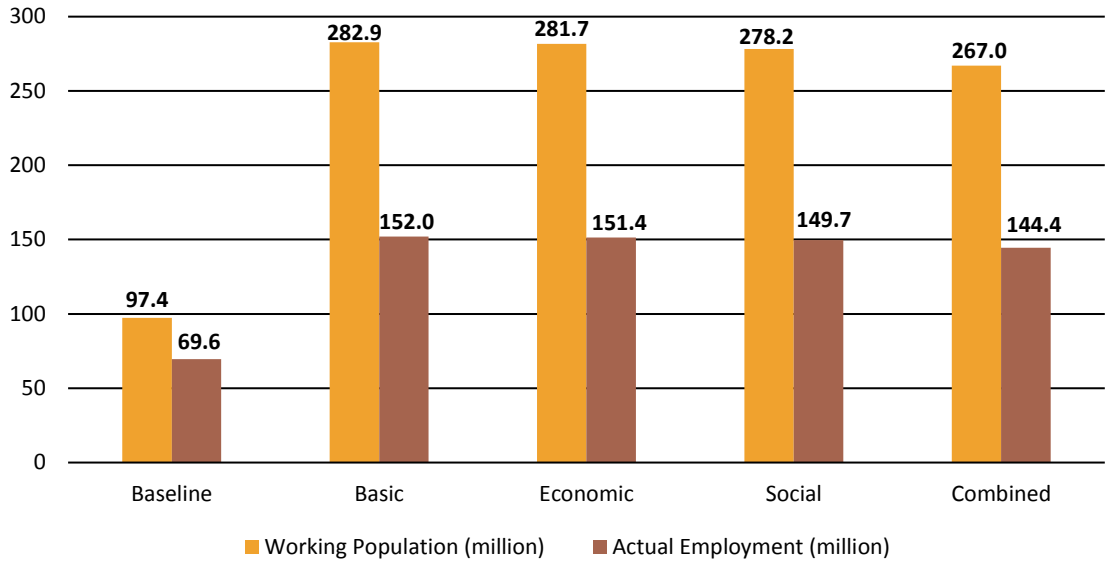
Table 6.2.5: Key Economic Indicators

Indicator	2016	Basic Emphasis	Economic Emphasis	Social Emphasis	Combined Emphasis
Investment per capita (USD)	265.34	400.55	502.97	536.96	674.94
GDP (billion)	326.3	1,338.74	1,668.74	1,700.82	1,800.49
GDP per capita (USD)	1,786	2,670	3,367	3,553	4,265

The proportion of the increase in investment per capita shows that in jumps by 151% in the Basic scenario, 190% under the Economic Emphasis scenario, 202% in the Social Emphasis scenario and 254% in the Combined scenario. This result is inevitable since the reduced independency ratio is to obviously create more favourable age distribution as reflected in the population pyramids. The results show that GDP will grow from baseline figure of USD 326.3 billion to USD 1,338.74 under the Basic scenario and grow to USD 1,800.49 for the combined scenario by 2056. Furthermore, the expansion of GDP per capita between 2016 and 2056 for each of the four policy scenarios reveals an increase from the 2016 level of USD 1,786 to USD 4,265 in 2056, an increase of about 240%. Improving human capital through fertility reduction and increased girls' education results in GDP per capita that is twice as high as under the Basic scenario.

Although, the performance of an economy often depends on the output of the productive population, the economic impact of the scenarios shows a very huge gap between labour force and those who are actually employed as shown in Figure 6.2.4.

Figure 6.2.4: Employment – Labour Force Gap



Although, Nigeria is currently a most populous black nation, it barely provides employment to 71.5% of its labour force in 2016[5]. However, its expected population explosion at the end of the projection period implies that it will barely engage 53.7% of its labour force any kind of employment under both the Basic and Economic Emphasis scenarios. The situation is nearly the same under the Social Emphasis scenario with just additional 0.1% to the previous two scenarios. In the same vein, the combined scenario will also provide for just 54.1% of its labour. This situation possesses a huge implication on the insecurity and other vices the nation is current grappling with. It is a demographic disaster waiting to happen.

6.2.5 Growth in Per Capita GDP and Demographic Dividend

DemDiv modelling project demographic dividend through change in GDP per capita based on age structure. The trend of growth of GDP per capita leading to the estimation of the demographic dividend is as shown in Table 6.2.6 below.

Table 6.2.6: Per Capita GDP Growth and Demographic Dividend by Policy Scenarios

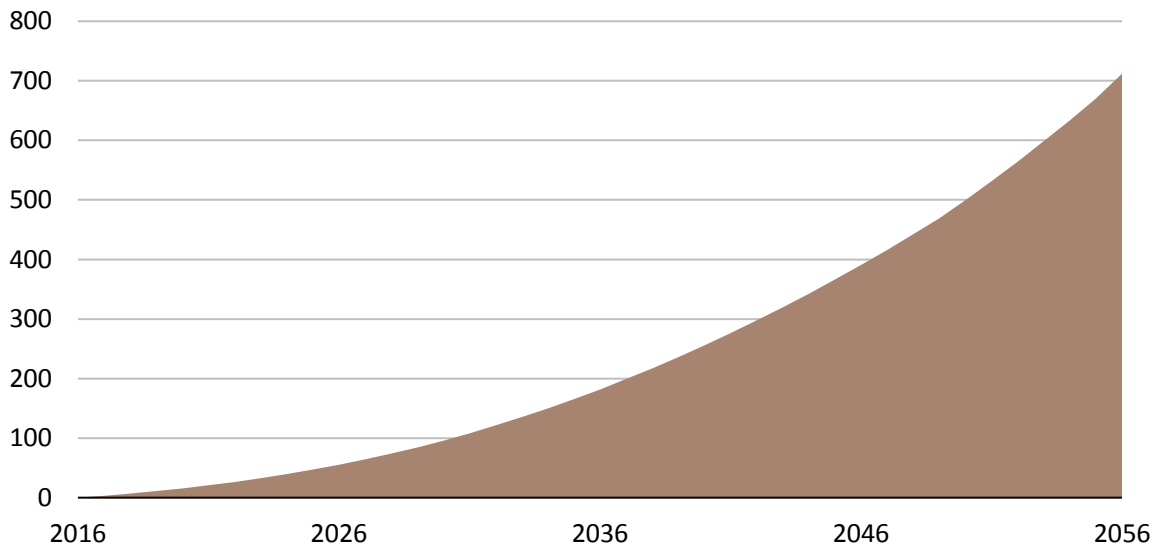
Policy Scenario	2016	2026	2036	2046	2056
Basic Emphasis	1,786	2,048	2,281	2,509	2,670
Economic Emphasis	1,786	2,089	2,511	3,021	3,367
Social Emphasis	1,786	2,106	2,565	3,130	3,553
Combined Emphasis	1,786	2,161	2,746	3,521	4,265
Demographic Dividend		55	181	391	712

[5] These and those fully employed and those under-employed.

Under the Basic scenario, per capita GDP will increase modestly from the 2016 baseline level of USD 1,786 to USD 2,048 in 2026, USD 2,281 in 2036, USD 2,509 in 2046, and to USD 2,670 in 2056. If Nigeria give economic investments a top priority, GDP per capita is projected to increase to USD 2,089 by 2026, USD 2,511 in 2036, USD 2,509 in 2046, and to USD 2,670 in 2056. However, if the nation could go beyond economic investments to give adequate attention to social development investments in education and health, the average national income amount will increase to USD 2,106 USD by 2026, USD 2,565 in 2036, USD 3,130 and USD 3,553 in 2046 and 2056 respectively, this is the case under the Social Emphasis scenario. Should Nigeria implement policies and investments that could concurrently generate economic growth and job creation, education and health as well as fertility reduction, which is the combined scenario, GDP per capita would increase to USD 2,161 in 2026 and ultimately reach USD 4,265 in 2056.

However, the difference in per capita income between the Social Emphasis model and the Combined scenario represents the demographic dividend that Nigeria would attain given the adoption of an integrated development model of the Combined scenario. In this instance, the demographic dividend earned would be USD 55 in 2026, USD 181 in 2036, USD 391 in 2046 and USD 712 in 2056. The trend of its growth is shown in Figure 6.2.5.

Figure 6.2.5: Trend of Demographic Dividend using DemDiv



The implication of this result is that the increase in economic performance as well as the accruable economic gain derived from the demographic dividend accelerates towards the end of the projection period. This is confirming that Nigeria can indeed transform to an efficiency-driven nation. It should, however, be noted that only when the identified policy mix and pursued and implemented can the nation capitalize of the window of opportunity that reducing population growth and its changing age structure brings.

CHAPTER SEVEN

POLICY OPTIONS TOWARDS HARNESSING THE DEMOGRAPHIC DIVIDEND IN NIGERIA

Although DD is simple and straightforward, it requires concerted actions to make it work. Demographic dividend does not translate to economic dividend automatically. Key policies must be initiated and implemented for any country to reap it.

The starting point for the opening of the demographic window of opportunity is reduction in fertility levels. This can be done by influencing the proximate and other determinants of fertility. These according to Olaniyan and Oviku (2015) include a reduction in child mortality, morbidity and malnutrition. Rather than focusing directly on fertility, issues of increase in female education and gender equity as well as social norms on fertility must be frontally addressed. All these must be accompanied by expansion of comprehensive family planning programmes that the country is currently implementing. Strong political will should be exercised towards removing barriers of demand and provide access and use of contraception among married and unmarried couples. Transition to smaller families has both accompanied and contributed to improved child survival. But in many of the world's least developed countries, while child survival has improved, declines in fertility have been very slow, and a demographic transition is yet to occur. Millions of women are unable to choose the number, timing, and spacing of their children, and consequently have more children than they desire. As a result, population of these countries is growing very quickly—as much as 3 percent or more per year. Policies to get optimal fertility levels should focus on the five main social determinants of poverty identified by Canning et al, (2016) as child mortality, urbanization, female education, the time cost of children, and desired investments in children.

Realizing the demographic dividend requires first and foremost the creation of opportunity, in particular, the right mix of jobs that allow workers to contribute productively to the economy. Job creation in turn requires sustained investment in human capital, e.g., education and health. Uneducated workers can typically engage in activities with a relatively low value added. Similarly, unhealthy workers are often limited in the energy and perseverance they can bring to a workplace. By contrast, workers who are well educated and healthy are much more able to contribute productively to a country's economy. They are more likely to attend work regularly and to be able to learn new skills and apply them reliably. The human capital that is embodied in educated, healthy individuals is invaluable for promoting rapid economic growth. Government must therefore promote relevant quality and productive educational system that gives the children proper skills for being productive in life through better jobs.

To achieve desired demographic dividend as suggested by Olaniyan et al. (2012), policy makers need to identify job intensive sectors in which the country enjoys a global competitive advantage or strong domestic demand; improve access to finance for these sectors; – build appropriate infrastructure; cut unnecessary regulation; and ensure that the labour force has the necessary skills. More so, efforts must be made to improve access to labor markets for the youths domestically. This is because unemployment has to be reduced to the barest minimum; as lifecycle profile in Nigeria reveals low productivity of young workers and this has to be addressed. From any angle at which policies are approached, the youths must be employed. There must be policies that ensure smooth transition from school to work. This will only happen if the youths have adequate skills which means that the country must put in place policies that improve business environment that can build demand for labour.

In addition, policy makers need to improve access to labor markets for the youth (internationally). Migration can be an option for human capital development and utilization but

emigration lead to a loss of highly qualified young adults. This is because lack of opportunities in the country makes emigration to be attractive because of remittances and their concomitant implications for poverty reduction. Another area is to increase the investment in human capital as fertility declines. Investing more in the education and health of children means that standards of living will at first rise more slowly. Hence, a continuous investment in education and training will further develop the citizens in the present knowledge economy. Indeed by continuing to invest in human capital, higher standards of living can be sustained even after the economic support ratio has declined.

In addition to these, empowering women and girls by improving their health, education and skills, and providing them with greater market, social, and decision-making power; increased labor force participation, and asset ownership must be consciously pursued. This will involve deliberately bringing more women into paid employment and entrepreneurship as a means of increasing the demographic dividend. Indeed women empowerment is key to achievement of DD. This will have compounding effects not just for fertility decline but also for employment, productivity and total earnings in the country.

Nigeria must prepare for harnessing the second demographic dividend through adequate savings and investment. UNDP (2016) found that about half of the demographic dividend already achieved in East Asia has come from savings and capital accumulation closely aligned with increases in the share of the working-age population. This is a great potential that is also available to Nigeria. To realise the second dividend, the working population must be encouraged to save and invest in asset with immediate effect such that they will depend on the assets income from housing, funded pensions, and personal savings, among other things when they grow old. Policies that give workers adequate incentive to save and invest and thus prolong the demographic dividend must be in place. This is because, during the first dividend and associated higher income, better nutrition and health will result in greater expected longevity which will be reflected in longer life expectancy for the people. When people expect to live more, there is the incentive to save by older working age cohort. Also, since DD is more associated with more quality children who might be more spatially mobile as they grow, parents are less certain about the support they can expect from their children in their old age, thereby wanting to save and invest more to be able to have something to fall back upon during their old age. Such effort might require setting up low-cost savings schemes accessible to workers in the informal and formal sectors and directing the consequent boost in savings toward productive investment. Except for few states, many states in Nigeria still pursue the Pay-as-You-Go pension scheme. Unfortunately, most of the citizens who are outside the formal employment remain largely uncaptured by any social insurance system. There is thus the need to creatively adjust the national pension system for equity, adequacy and sustainability with a view to capturing the majority of the country's population outside the informal sector.

It is expected that when nations experience the first demographic dividend, there is an overriding second stage effect on the economy. A stable macroeconomic environment is needed for the economy to position itself in reaping the second demographic dividend. Macroeconomic policies and institutions for domestic savings and investment must be strengthened. As more people work and have smaller families, and know that they may live longer in retirement, they tend to save more. Demographic transition can allow governments to save too, including through reduced spending on social services that are more important when populations are very young or very old. Accumulated savings can be applied in several ways that contribute to human development and the demographic dividend, such as spending in infrastructure to improve productivity. The region of Africa as a whole, needs to widen the

availability of financial instruments for investing in savings. This requires that the financial sector must be strengthened to aid and sustain investment that will enhance possibilities of reaping second dividend. It will enhance the development of raising financial literacy, improving the domestic investment environment and increasing access to international capital markets. Adoption of an asset-based pension system can enhance the situation.

REFERENCES

African Development Bank (AfDB) (2016) African Development Report 2015- Growth, Poverty and Inequality Nexus: Overcoming Barriers to Sustainable Development. African Development Bank, Abidjan Côte d'Ivoire

Amporfu, E., D. Sakyi, and P.B. Frimpong (2014), "Demographic Dividend of Ghana: The National Transfer Accounts Approach" Available and downloaded on 1 December, 2017 from https://www.ntaccounts.org/doc/repository/Amporfu%202014.pdf

Becker, Gary and H. Gregg Lewis (1973) On the Interaction between Quality and Quality of Children. Journal of Political Economy 81(2) 1063-93

Bloom David E, David Canning Jaypee Sevilla (2003). The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change.

Bloom, David E. & Williamson, Jeffrey G., 1998, 'Demographic Transitions and Economic Miracles in Emerging Asia', World Bank Economic Review, Vol. 12, No. 3, pp. 419−55.

Bloom, David E., Jocelyn Finlay, Salal Humair, Andrew Mason, Olanrewaju Olaniyan, and Adedoyin Soyibo (2015) Prospects for Economic Growth in Nigeria: A Demographic Perspective Program On The Global Demography Of Aging At Harvard University Working Paper Series 127 http://www.hsph.harvard.edu/pgda/working/

Canning David, Sangeeta Raja, and Abdo S. Yazbeck 2015 Africa's Demographic Transition: Dividend or Disaster? International Bank for Reconstruction and Development / The World Bank 1818 H Street NW, Washington, DC 20433

Central Bank of Nigeria (2016) CBN statistical Bulletin, Abuja: CBN

Eastwood, Robert & Michael Lipton (2011): Demographic transition in sub-Saharan Africa: How big will the economic dividend be? Population Studies: A Journal of Demography, 65:1, 9-35

Eloundou-Enyegue, Parfait M. (2013) Harnessing a Demographic Dividend: Challenges and Opportunities in High and Intermediate Fertility Countries; Population Division Expert Paper No. 2013/7 United Nations Department of Economic and Social Affairs

Kluge, F. A. (2009) Transfers, Consumption and Income over the lifecycle in Germany; MPIDR Working Paper WP 2009-14, Max Planck Institute for Demographic Research, Rostock, Germany .

Kluge, F. A. (2011), "Labor Income and Consumption Profiles: the Case of Germany", in R. Lee and A. Mason, "Population Aging and the Generational Economy: A Global Perspective", Cheltenham, UK, pp 327 – 339.

Lee, R., Lee, S.-H., and Mason, A. (2008). "Charting the Economic Lifecycle", in A. Prskawetz, D. E. Bloom and W. Lutz (eds), Populating Aging, Human Capital Accumulation, and Productivity Growth, supplement to Population and Development Review, 34, pp. 208 – 237

Lee, Ronald and Andrew Mason. 2006. Back to Basics – What is the Demographic Dividend? Finance and Development. IMF September, Vol. 42(3).

Lee, S. and n. Ogawa, (2011) "Labour Income over the Lifecycle" in R. Lee and A. Mason, "Population Aging and the Generational Economy: A Global Perspective", Cheltenham, UK, pp 109-135.

Mason A., Olaniyan O. and A. Soyibo (2010) Population and Economic Progress in Nigeria Research report submitted to Harvard School of Public Health, Harvard University, January

Mason et al. (2008). Demographic transition and economic growth in the Pacific Rim. East Asian Seminar on Economics (EASE), June 19-21, Seoul, Korea.

Mason, A., R. Lee, A. C. Tung, M. S. Lai and T. Miller (2009) "Population aging and intergenerational transfer: Introducing age into National Income Accounts" in D. A. Wise (ed). Developments in the Economics of Aging, National Bureau of Eonomic Research Conference Report. Chicago: University of Chicago Press pp. 89-122.

Mason, Andrew, Ronald Lee, Jennifer Xue Jiang (2016)Demographic dividends, human capital, and saving The Journal of the Economics of Ageing 7 (2016) 106–122

National Bureau of Statistics (NBS) and United Nations Children's Fund (UNICEF). 2017 Multiple Indicator Cluster Survey 2016-17, Survey Findings Report. Abuja, Nigeria: National Bureau of Statistics and United Nations Children's Fund

National Bureau of Statistics (NBS) 2016. Unemployment/Underemployment watch, 2016Q1 Abuja: National Bureau of Statistics

National Bureau of Statistics/Joint Admission and Matriculation Board JAMB, 2017 Statistics of University Admissions

National Population Commission (NPC) [Nigeria] and ICF International. 2003. Nigeria Demographic and Health Survey 2003. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

National Population Commission (NPC) [Nigeria] and ICF International. 2008. Nigeria Demographic and Health Survey 2008. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

National Population Commission (NPC) [Nigeria] and ICF International. 2014. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

Federal Ministry of Education (2010) Nigeria Digest of Education Statistics, 2010, Lagos FME

Federal Ministry of Education (2016) Nigeria Digest of Education Statistics, 2016, Lagos FME

Okunola, Rasidi Akanji, Akokuwebe, Monica Ewomazino (2015). Demographic Transition and Rural Development in Nigeria. Developing Country Studies Vol.5, No.6,

Olaniyan O., Adedoyin Soyibo, Akanni Olayinka Lawanson (2012). Demographic transition, demographic dividend and economic growth in Nigeria. African Population Studies Vol 26, 2

Olaniyan, O 2014. How Nigeria can capitalize on Demographic Dividend in the Six Geopolitical zones of Nigeria. Report submitted to the United Nations Population Fund (UNFPA), Abuja, Nigeria.

Olaniyan, O. and N. Olasehinde (2015) Demographic Dividends in Lagos State, Technical Report submitted to the Lagos State Bureau of statistics, Ikeja: Lagos

Olaniyan, O. and Oyedele (2015) *Is high fertility really a problem? Demographic dividend and youth empowerment* Paper presented at the 56th Annual Conference of the Nigerian Economics Society held at Sheraton Hotel and Towers, Abuja Nigeria, 12th – 15th October 2015.

Olaniyan, O., Soyibo, A., A.O. Lawanson, N. Olasehinde (2016) Is the Demographic Dividend being wasted? Differential Prospects by Geopolitical Zones. Paper 11th Global Meeting of the National Transfer Accounts (NTA) Network to be held in Dakar and Saly, Senegal, from June 20-24, 2016 Paper presented: (with Soyibo, A., A.O. Lawanson, N. Olasehinde)

Olaniyan, Olanrewaju, Lawanson Akanni O and Soyibo. A (2013) Who finances the Consumption of the Unemployed Youths in the context of high youth unemployment? Some Nigerian Evidence Using Overlapping Generations Model in NES (ed.) Selected Papers for the 2005 Nigeria Economic Society Conference Abuja: Nigeria Economic Society pp. 473-496

Olaniyan, Olanrewaju, Soyibo. A., and A. Olayinka Lawanson (2011) "Consumption and Income over the Lifecycle in Nigeria" *African Population Studies* Vol. 25 No. 1

Soyibo Adedoyin, Olanrewaju Olaniyan, Akanni O Lawanson (2013) Emerging Evidence on the Demographic Dividend of Nigeria. Ninth meeting of the working group on Macroeconomic Aspects on Intergenerational Transfer. National Transfer Accounts.

Soyibo, A., O. Olaniyan, and A. O. Lawanson (2009) "National Health Accounts of Nigeria, 2003-2005: incorporating sub-national health accounts of states", report submitted to the Federal Ministry of Health, Abuja.

The Worldwide Governance Indicators, 2017. Data available on www.govindicators.org

Tung, A. (2011) "Consumption over the Lifecycle: An International Comparison", in Population Aging and the Generational Economy, Ed. by R. Lee and A. Mason, Edward Elgar Publishing Limited. pp. 136-160.

UN [United Nations] Population Division (2011), World Population Prospects: 2010 Revision, New York: Department of Economics and Social Affairs, United Nations.
UNDP, 2016

United Nations Development Programme (UNDP) (2016) Asia-Pacific Human Development Report: Shaping the Future: How changing demographics can power human development; United Nations Development Programme 1 UN Plaza, New York, NY 10017, USA

United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, CD-ROM Edition.

United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, CD-ROM Edition.

Williamson, Jeffrey G. (2013) Demographic Dividends Revisited Asian Development Review, vol. 30, no. 2, pp. 1–25

Demographic Dividend in Nigeria

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