

**EXPLORING AFRICA'S FERTILITY TRANSITION AND PROSPECTS FOR
DEMOGRAPHIC DIVIDENDS: CASE STUDY OF NIGERIA**

BY

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Abstract

Africa is the second most populous Continent on earth, with an estimated population of 1.033 billion people. Indications are that the fertility decline observed on the continent since the mid-1980s has stalled significantly in Sub-Saharan Africa in the 1990s and early 2000s, a trend blamed on lack of education and poor family planning. Of twenty-two countries involved in a recent study, ten revealed a fertility decline; twelve others were undergoing a fertility stall, with half of them actually recording a small increase. The paper has adopted Nigeria, Africa's most populated country, as a case study. The nation is acknowledged with a demographic decline on the second of the 4-stage demographic transition model. Nigeria, like several other countries with fertility decline on the continent, can reap the benefits associated with demographic dividends, with the right levels of investment in health and education, while creating opportunities for the continent's youthful population.

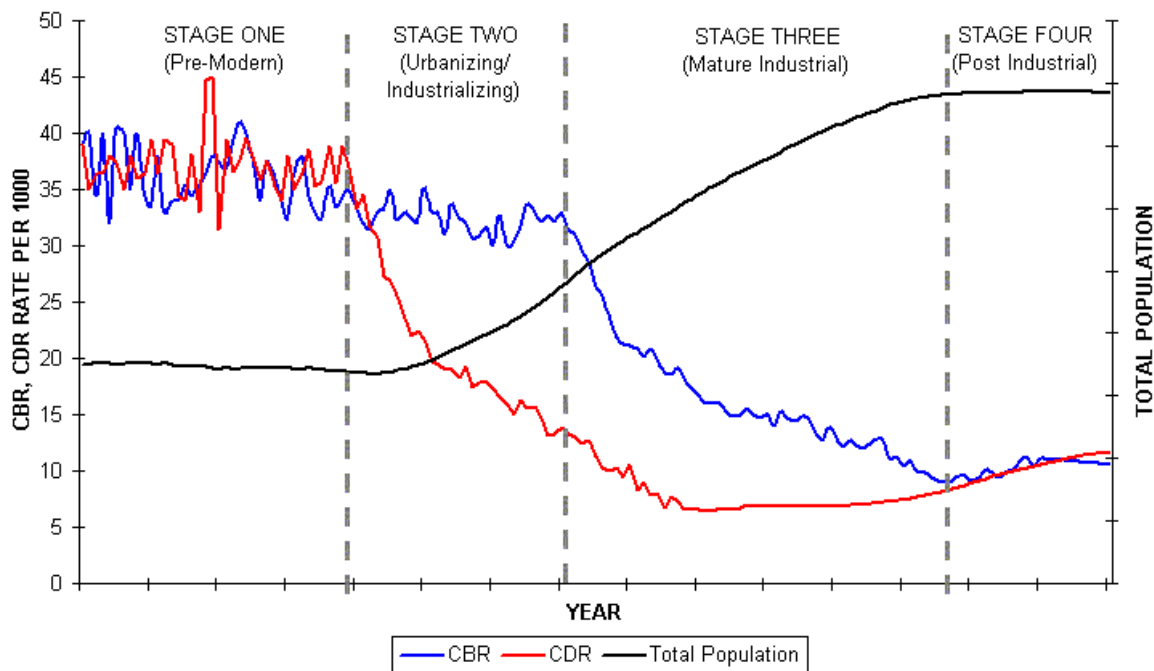
1.0 INTRODUCTION

1.1 Demographic Transition: A Conceptual Framework

In population theory, the demographic transition has emerged as a dominant issue, particularly in the developing world. Indeed, the demographic transition theory is a unique proposition with universal applicability in the field of population studies. The theory was initially propounded by different authors in the 1930s, as well as the 1950s (Chesnais, 2010). Largely based on the European experience, it comprises two phases: a descriptive or historical context, featuring the successive stages of the phenomenon; an analytical one, explaining both the mortality and the fertility decline. According to the demographic transition theory, societies eventually transcend high birth and death rates to low birth and low death rates (Orubuloye, 1991). The demographic transition theory is anchored on the experience with the European populations over time, featuring a connection between population growth and economic development in certain countries. It was observed that in countries with high standards of living, the population grew at a slow rate, while in countries with low standard of living, the population grew more rapidly. The demographic transition theory has been accompanied by a 'model', featuring an idealized, composite picture of

population change across countries. The model is a generalization that applies to various countries, but may not accurately describe trends in all cases (Srnivasan, 2012).

The demographic transition model has four stages, as depicted in figure 1.



The Demographic Transition Model

Source: Montgomery, 2009

The four phases of the demographic transition are described as follows (Montgomery, 2009):

- **Stage One:** This is associated with pre-modern times, characterized by a balance between birth rates and death rates. The situation was particularly true with all human populations until the late 18th Century. At this stage, both birth and death rates were relatively high, estimated between 30 and 50 per thousand. The resultant balance manifests in only very slow population growth.
- **Stage Two:** This features a rise in population growth, attributed to a decline in the death rate, while the birth rate remains relatively high. The decline in the death rate in Europe began to emerge in the late 18th Century, particularly in northwestern Europe and spread over the next 100 years to the southern and eastern regions. The decline in the death rate was driven by two factors: improvements in food supply brought by higher yields, as agricultural practices improved with the 18th Century agricultural revolution; there were also significant improvements in public health, reducing mortality rates (particularly among children).
- **Stage Three:** At this stage, the population is propelled towards stability, as it trends through a decline in the birth rate. In general, the decline in birth rates across developed economies began towards the end of the 19th

Century in Northern Europe, following several decades in the decline of death rates across the region. Several factors are attributed to this development. In rural areas, continued decline in childhood mortality brought many parents to realize they do not require many children to ensure a comfortable old age. Also, increasing urbanization changed the traditional values placed upon fertility and the value placed on children in rural society. Furthermore, increasing female literacy and employment, as well as access to contraceptive technology by the second half of the 20th Century played a role in influencing childbearing decisions.

- **Stage Four:** This is characterized by population stability. At this stage, the population structure has become older and in some cases fertility rates begin to fall below replacement levels and population decline sets in rapidly.

1.2 Contemporary Demographic Trends and Implications for Social & Economic Development

The global demographic trends have assumed a rather dynamic dimension, particularly in the past few decades, characterized by a rapid increase in human population in the developing countries of Asia, Africa and Latin America. The

trend has equally witnessed a decline in several industrial economies. The global population featured a rapid increase since the mid-20th Century, rising from 2.5 billion in 1950 to 6.9 billion in 2010. The trend features very little growth in developed economies, falling from 32% of the world population in 1950 and projected to fall even further, at 16% by 2030. On the other hand, populations in other regions have grown much faster, with the population profile in countries classified as “least developed”, mainly in sub-Saharan Africa, rising from 8% in 1950 and projected to reach 15% in 2030 (Lam and Leibbrandt, 2013). It should be noted that the global population growth rate peaked with just over 2% per annum in the mid-1960s and fell to 1.1% in 2010, with projections to fall even further to 0.7% in 2030. However, the global demographic trends also reveal considerable regional variation. Latin America and Asia had growth rates of about 2.5% per annum in the 1960s, followed by steady declines that have defined the global growth rates in recent times. In Sub-Saharan Africa, the demographic transition has been slower, featuring average population growth rates peaking at 2.8% per annum around 1980 and falling slowly to 2.5% in 2010, with projections of further declines to 2% in 2030 (Cohen, 2008). Figure 2 illustrates global demographic trends from 1950, including projections to 2045.

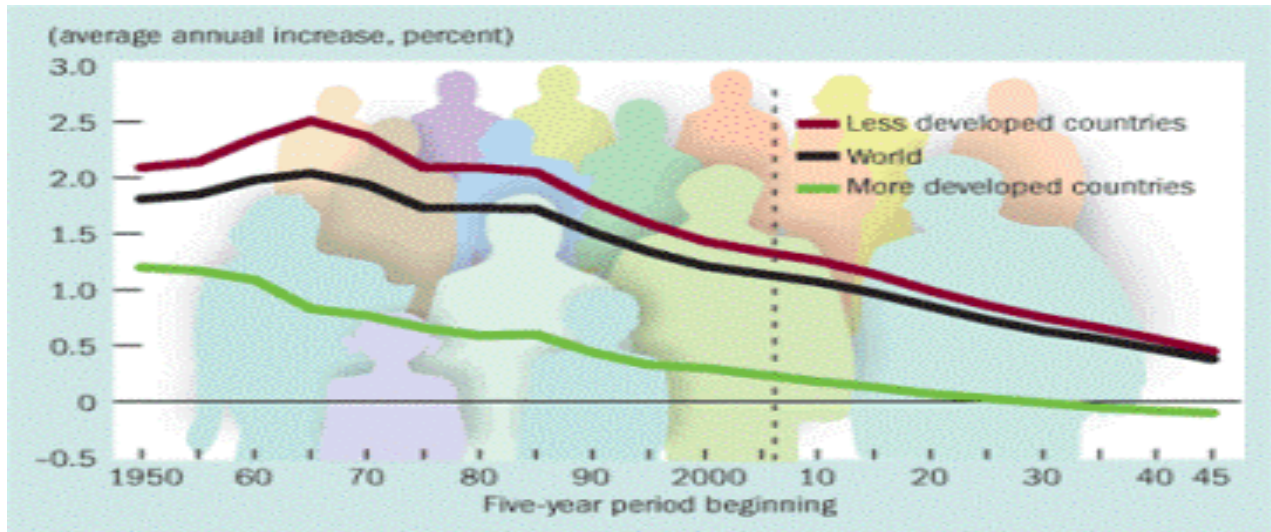


Figure 2: Global Demographic Trends, 1950-2045

Source: Cohen, 2008

While the global population of over 7 billion continues to grow at the rate of 1.1% annually, or 78 million people; this is at one-half the peak level of 2.1% in the late 1960s. Indications are that while the global demographic growth rate continues to slow; fueled by declining birth rates, the global population is projected to rise to 8 billion people by 2025. The trend will increase the world's working population, aged 15 to 64 years, by 610 million and those aged 65 years and older by 290 million, or 13 and 15%, respectively. (Chamie, 2012; Cohen, 2008)

Contemporary demographic trends also reveal about 95% of annual global population growth is occurring in less developed regions. Top seven contributing nations are: India, 22%; China, 9%; Nigeria, 5%; Pakistan, 4%; Indonesia, 3%; Brazil, 2%; and Ethiopia, 2%. While nearly all the world's demographic growth is

attributed to less developed regions, 54% of the world's Gross Domestic Product (GDP) is contributed by the ten largest industrial economies, led by the United States, Japan and Germany – representing 14% of the global population, but projected to decline to 11% by 2050 (United Nations, 2013).

The decline in global fertility, which has emerged since the 1960s, proceeds on a steady course. Currently, the average number of children per woman globally is 2.5, or about one-half the level 50 years ago. The downward trend is projected to continue, at 2.3 by 2025 and close to replacement level of 2.1 children per woman by 2050 (Chamie, 2012). Indeed, fertility rates for most developed economies, as well as an increasing number of developing economies are at or below replacement level, translating into little or even negative rates of population growth. Projections show that by 2050 the populations in some three dozen countries, including China, Germany, Italy, Japan, South Korea, Poland and the Russian Federation are expected to be smaller than they are today.

2.0 THE CHALLENGES OF AFRICA'S DEMOGRAPHIC TRANSITION

2.1 An Overview of Africa's Demographic Trends

Africa is the second largest and the second most populous Continent on earth, with an estimated population of 1.033 billion people. Africa comprises 54 recognized sovereign states and countries, 9 territories and 2 de facto independent states with little recognition (WPR, 2015). Africa has witnessed a considerable increase in its population over the last few decades. Its current population is five times its size in 1950. All indications are that the trend is to continue, with the population doubling from 1.2 billion to 2.4 billion between 2015 and 2050, before reaching 4.2 billion in 2100 (UNICEF, 2014).

Recent projection of Africa's population to 2030 reveals that it is expected to peak at 1.6 billion from 1.0 billion in 2010, which would place it at 19% of the world's population, while Asia and Latin America will account for 58% and 8%, of world population, respectively. The projections are based on historical fertility trends across the continent. However, lower fertility rates will allow Africa's overall annual population growth to remain at 2% by 2030, compared to Asia at 1%, Latin America and the Caribbean at 1.2%, Eastern Europe, -0.8% and the world as a whole at 1.5% (AfDB, 2012). Indications are that fertility decline stalled

significantly in Sub-Saharan Africa in the 1990s and early 2000s. Indeed, in the 1990s declining GDP per capita contributed to slowing fertility rate declines as did the AIDS pandemic, which also raised infant and child mortality rates. Poorly performing economies in the region fueled subsistence livelihoods and stalled fertility declines in many countries across the region (Bongaarts, 2008). A recent study of demographic transition in Sub-Saharan Africa also reveals a stall in the region's transition (Madsen, 2013). The study classified several countries as stalling in the fertility transition if annual pace of fertility decline between their two most recent Demographic and Health Survey (DHS) reports was below 0.05 child per woman, about one-half the historical average decline for developing countries in the late 20th century. The threshold, according to the study, represents a very slow rate of decline: the fertility rate in a country, with an annual decline of 0.05 would take 20 years to drop by one child. As shown in table 1, most of the countries with stalling fertility are located in West Africa. The countries where Total Fertility Rate (TFR) is stalling or increasing have a higher fertility rate, at 5.6 children per woman than the transiting group, at 4.2. Of the 22 countries involved in the study, 10 revealed annual fertility decline of at least 0.05 child per woman between the two most recent surveys and are considered to comprise the group in transition. The remaining 12 countries are undergoing a

fertility stall, with half of them actually recording a small increase, as revealed in

Table 1.

Table 1: Sub-Saharan African Fertility Rates & Transition Status			
Country	TFR, Previous Survey	TFR, Most Recent Survey	Status
Benin	5.6	5.7	stall
Burkina Faso	5.9	6.0	stall
Cameroon	5.0	5.1	stall
Chad	6.4	6.3	stall
Ethiopia	5.4	4.8	transition
Ghana	4.4	4.0	transition
Guinea	5.5	5.7	stall
Kenya	4.9	4.6	transition
Lesotho	3.5	3.3	stall
Madagascar	5.2	4.8	transition
Malawi	6.0	5.7	transition
Mali	6.8	6.6	stall
Mozambique	5.5	5.9	stall
Namibia	4.2	3.6	transition
Niger	7.2	7.0	stall*
Nigeria	5.7	5.7	stall
Rwanda	5.5	4.6	transition
Senegal	5.3	5.0	transition
Tanzania	5.7	5.4	transition
Uganda	6.7	6.2	transition
Zambia	5.9	6.2	stall
Zimbabwe	3.8	4.1	stall

Source: MEASURE DHS STATcompiler. Countries included are those with at least two surveys with an interval of less than 10 years. The most recent survey is no older than 2003.

** Niger, where fertility has never dropped below seven children per woman, could be more accurately considered a pre-transition country.*

Lack of knowledge or access to modern contraception has been largely blamed for the stall in fertility decline in the countries surveyed, with only two-thirds of married women in Niger and Nigeria having knowledge of modern contraception.

There is considerable optimism on Africa's mortality rates, which are set to improve over the coming decades, with communicable diseases being addressed more aggressively. The trend is however against the backdrop of the malaria epidemic threat in most African countries, blamed for a major proportion of morbidity and mortality. Projections nonetheless reveal progress in child and infant mortality rates: child mortality is expected to decline from 116 per 1000 live deaths in 2010 to 75 per 1000 live deaths in 2030, due largely to rising incomes, improved access to portable water and sanitation and better health facilities (AfDB, 2012).

In another study of Africa's demographic trends, Guengant and May (2014) classified African countries into four groups, based on the stages of their fertility transitions. The first group features fertility rates below four children per woman, with a strong convergence between low fertility and mortality rates. There are thirteen countries under this category, accounting for 22% of the continent's population. All the countries are either located in North Africa or in the southern

part of the continent or are island nations, such as Seychelles. The next group, comprising fifteen countries, features fertility rates between 4.0 and 5.0 children per woman. They also feature initial stages of convergence. This group of nations has witnessed positive economic performance and includes such countries as Ghana, Rwanda and Ethiopia, but also featuring others with poor economic records in recent times, including Zimbabwe and the Central African Republic. Like the first group, they also account for 22% of the region's population. The next group is almost as large as the first two groups combined. The sixteen countries include Nigeria, with an estimated population of 174 million and Africa's largest. The group accounts for 37% of the region's population, hardly featuring strong evidence of convergence, with fertility rates ranging between 5.0 and 6.0. However, the group demonstrates initial indications of demographic transition. The last group features the least change. Its members feature fertility rates over 6.0 children per woman, a trend that remains largely unchanged since the 1960s. Most nations under this category are landlocked, with low rates of urbanization. They include the Democratic Republic of Congo, Uganda and Niger, which at 7.5, has the world's highest fertility rate. It is noteworthy that the first three group of nations combined account for 78% of Africa's population, evidencing Africa's rather slow fertility transition, in a break with global trends.

Improved mortality rates in Africa however are expected to impact positively on the average life expectancy (at birth), which is projected to reach 64 years by 2030, compared to 57 years in 2010. The projection reveals considerable variation across regions. North Africa and East Africa are projected to record the highest life expectancy at 76 to 64 years, against the lower level of 56 years in Central Africa. The rise in life expectancy is further expected to be higher for low-income countries, where it will rise by 14 years between 1990 and 2030; in middle-income countries, the expected increase is 12 years; in the upper-middle-income countries, the expected increase is 5 years.

At the heart of Africa's demographic trend is the structure of the continent's population, which reveals a youthful profile. This trend was affirmed by Cincotta (2010), who noted that Africa's large proportion of young adults in the working age constitute over 40%, as well as a rapidly growing school-age population and high rates of workforce growth. However, the dynamics also have grave implications for the rising levels of unemployment, as well as its consequent political backlash. While fertility declines may yield an immediate reduction in the growth rate of children and the elderly population, there remains a substantially delayed decline in the rate of growth of the working-age population.

The large proportion of young people in Africa's contemporary population profile has been aptly described as a "youth bulge" (Ashford, 2007).

Africa's demographic trends also reveal a growing ageing population in the midst of unprecedented growth of the youth population. Population ageing is projected to accelerate between 2010 and 2030, as more people approach 65 years of age. Projections indicate the elderly could account for 4.5% of the population by 2030, from 3.2% in 2010. There are challenges associated with ageing population, as the group is highly linked with long-term physical and mental disability, as well as chronic conditions that are likely to increase the needs for personal care. Yet, average spending on health is low and health-care systems in several African countries are poor and ill-equipped to address these needs. Indeed, middle-income African countries, including Mauritius, Tunisia, Morocco, Algeria, Egypt and South Africa, are currently experiencing a significant increase in population ageing, with the proportion of their populations aged 65 years or more ranging between 4.5% - 7.3%. Other countries, including Libya, Botswana, Zimbabwe and Djibouti have also witnessed increasing proportion in the population of elderly citizens.

Emergent demographic profile in Africa equally reveals increasing urbanization, particularly in Sub-Saharan Africa. The region has experienced unprecedented urban growth, outpacing other regions around the world. In 2010, Africa had three cities with over 5 million inhabitants (Cairo, Egypt's capital; Kinshasa, Congo's capital; and Lagos, Nigeria's commercial capital). Projections reveal that the number could rise to 35 by 2050, with Kinshasa and Lagos each exceeding 30 million inhabitants (Guengart and May, 2014). Other burgeoning mega-cities are Tanzania's Dar es Salaam, Kenya's Nairobi and Angola's Luanda, with a provision of basic services to all of them to assume problematic dimensions. Developmental challenges associated with rapid urbanization continues to manifest in the proliferation of unplanned housing that eventually become shanties, devoid of social services and accompanied by insecurity and endemic poverty. Despite these challenges, African cities have played a pivotal role in sustaining economic growth in recent years, generating about 55% of the continent's total GDP (AfDB, 2012).

2.2 The Rising Profile of Africa's Working Population and Prospects for Demographic Dividends

Africa's population growth is projected to double by 2050 from its 1 billion people in 2010. The increase is projected to be driven by rapid growth in Sub-Saharan Africa, which is set to witness its working-age populations outnumber non-working people (AEO, 2015). Indications are that the ratio between the African population inside and outside of the workforce will become more favourable in the coming decades, with more people in the workforce supporting non-working population. For every 100 active workers in Sub-Saharan Africa, there will be just 60 inactive workers. The current rate in Nigeria is 89 inactive people per 100 active workers, while it is 103 in Uganda. In comparison, the United States has a rate of 50 inactive people per 100 active workers, while China has just 37 at present. The favourable trend that often accompanies working-age population (15-64) and the dependent-age population (under 15 and over 65), when the former outnumbers the latter, usually results in a concept known as "demographic dividends". Indeed, the demographic dividend refers to the window of opportunity that opens up when the largest proportion of the population is in the working-age group and the proportion of dependents (children and elderly) is smaller. The phenomenon reduces the dependency ratio

and fosters economic growth (UNFPA, 2014a). As a country’s total fertility rate declines, the proportion of the population under age 15 begins to reduce relative to the adult working-age population. The decline in this ratio sets the stage for smaller families, which now have more resources to invest in the health, education and well-being of each child. As the population declines with the number of people to support, the country is presented with a window of opportunity for rapid economic growth if the right social and economic policies are implemented and investment made, as illustrated in figure 3.

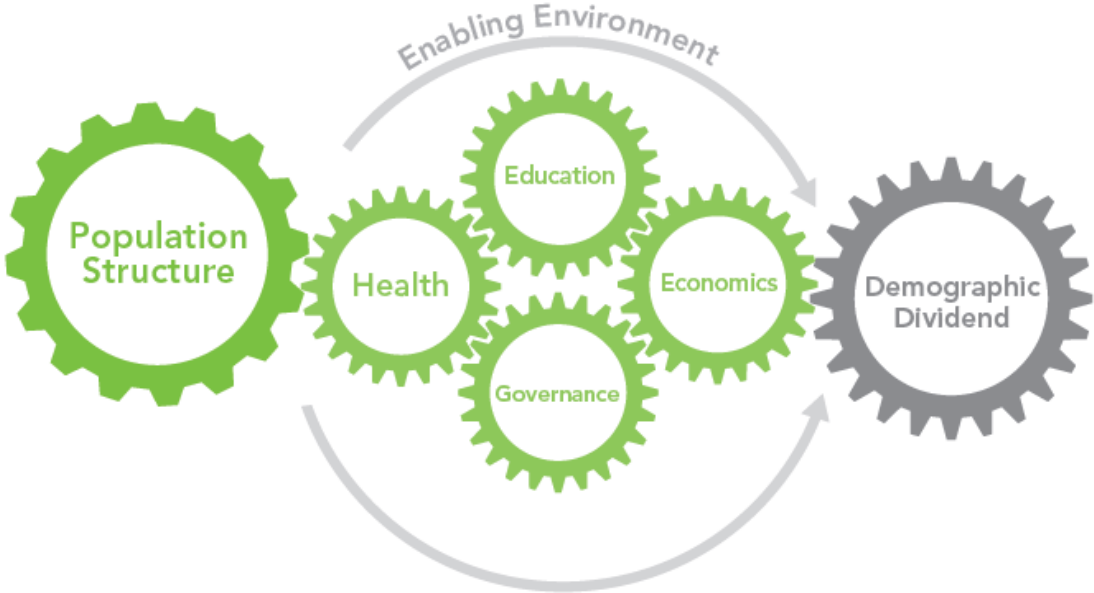


Figure 3: Policy Interventions facilitating a Demographic Dividend

Source: Population Reference Bureau, 2012

Sub-Saharan Africa is the only region in the world yet to reap a demographic dividend, although some progress is being made in a few countries (Gribble and Bremner, 2012). For example, the population, health and education indicators for the countries in the eastern and southern Africa have surpassed those from western and central Africa. While the region had an annual average economic growth rate of about 5% over the last decade, lack of access to education and healthcare poses a challenge to sustainable economic growth. Also, the region's relatively high population growth rates-an average of about 2.5% per annum-have dampened economic growth. This is against the backdrop of widespread impoverishment, with more than 70% of the population living on less than US\$2.00 a day. In recent times, however, access to healthcare and education has improved in some countries. Indeed, health gains have been rapid, translating into a sharp decline in both infant and child mortality. For example, infant mortality in the region declined from 142 deaths per 1,000 live births in 1970 to 85 in 2010. Literacy rates are also improving: primary education completion rates are 63% for females and 71% for males. The impact of female education on childbearing decision is expected to be profound across the region, increasing the prospects for reaping demographic dividends, as evident in several East Asian economies, particularly in the past few decades and, in the opinion of experts,

could become a reality for many developing economies, especially in Sub-Saharan Africa (UNFPA, 2014).

Africa is set to account for 3.2 billion of the projected 4 billion increase in the global population by 2100. Its working-age population is projected to increase by 2.1 billion over the same period, compared to a net increase of 2 billion (Drummond et al, 2014). With declining mortality and fertility rates, Africa's share of the working-age population is projected to increase from about 54% in 2010 to peak at about 64% in 2090. The rising share of Africa's working-age population is contributing to its productive potential, particularly when most advanced economies are confronted with an ageing population. Africa's share of the global working-age population is projected to increase from 12.6% in 2010 to over 41% by 2100, as indicated in Table 2.

Table 2: The Proportion of Africa’s Share of Global Working Population 2010 and Projections for 2100.

	Total Population (bn)			Working-age Population (bn)		
	2010	2100	Change	2010	2100	Change
World	6.9	10.9	4.0	4.5	6.5	2.0
Africa	1.0	4.2	3.2	0.6	2.7	2.1
Africa/World (Per Cent)	14.9	38.5		12.6	41.2	

Source: IMF Staff estimates based on UN World Population database

The magnitude of Africa’s emergent demographic trends holds transformational implications for the region’s economies.

In another report, the IMF (2015) projects by 2035, the number of Sub-Saharan Africans reaching working-age (15-64) will exceed that of the rest of the world combined, with the following regional and global economic implications:

- For the region, the current demographic trends include a rapid growth in the share of working-age population. In most parts of the world, similar transitions have been associated with higher savings and investments, raising potential and actual growth.

- For the global economy, integrating Sub-Saharan Africa's labour force into global supply chains would be beneficial. This is particularly important against the backdrop of the increasingly ageing populations in much of the rest of the world. Indeed, on current trends, the world's working-age population, excluding that of Sub-Saharan Africa, is projected to start declining by 2050.

The main findings of the IMF's report are summarized as follows:

- Sub-Saharan Africa can benefit significantly from the pending demographic dividend, depending on the speed of transition and policy choices. Indications are that the region's income per capita could be an additional 25% higher in 2050, largely resulting from demographic transition. By 2100, it could be about 55% higher. If complemented with supportive policies, the dividend could increase to about 50% by 2050 and nearly 120% by 2100. For many countries, this may allow them to emerge as middle-income economies.
- To maximize the demographic dividend, Sub-Saharan Africa will have to create high-productivity jobs at an average of about 18 million jobs per year until 2035. It would require a gradual transformation from the

informal sector which currently accounts for about 90% of the 400 million jobs in low-income Sub-Saharan African economies; to non-agricultural formal sector employment.

- The overall magnitude of the dividend will depend on the speed of the transition, particularly how fast infant mortality and fertility rates decline. The more rapidly those rates decline, the greater and faster will the increase in the share of the work-age population be. Failure to speed up the transition will delay the demographic dividend.
- Factors that matter for growth, particularly macroeconomic stability, trade openness, and strong institutions also matter for harnessing a demographic dividend, but assume a greater dimension against the backdrop of rapidly growing populations and increasing shares of working-age population. Investments in human capital, including healthcare and education, are critical in the early stages to speed up the transition, improve the productivity of the workforce, and increase the size of the potential dividend.

3.0 NIGERIA'S POPULATION PROFILE AND IMPLICATIONS FOR DEMOGRAPHIC DIVIDENDS

3.1 An overview of Nigeria's Demographic Profile

With a population estimated at 174 million people, Nigeria is Africa's most populated country, accounting for about one-sixth of the continent's population. Nigeria's population has grown rapidly over the past several decades, in a development that could be aptly described as a case of demographic explosion. The nation's rapid population growth profile, which was evident even before its independence in 1960, continues with little evidence of slowing down. For example, the nation's population was 30,403,305 in 1952, which almost tripled to 88,992,220 in 1991. The population continued with its rapid growth since 1991, almost doubling at 174,507,539 by 2013, as shown in table 3.

Table 3: Historical Profile of Nigeria’s Population Growth Trends

Year	Population	± % (Per Annum)
1952	30,403,305	–
1963	54,959,426	+5.53%
1991	88,992,220	+1.74%
2006	140,431,790	+3.00%
2013	174,507,539	+3.15%

Source: CIA World Fact book, 2013

Nigeria has experienced a population explosion over the last 50 years, a trend blamed on very high fertility rates, which have quadrupled its population over this period. Growth was particularly fastest in the 1980s, after child mortality declined rather sharply and has slowed since then. The birth rate has also slightly reduced. The trend was affirmed in the 2012 revision of the United Nations report, World Population Prospects, with a total population in 2010 put at 159,708,000 compared to only 37,860,000 in 1950. The nation’s rapidly increasing population features a high proportion of children below the age of 15 in 2010, at 44.0% of the population, while 53.2% of the population was aged between 15 and 65 years

and only 2.7% was aged 65 years or older (United Nations, 2012). Table 4 shows Nigeria's long-term age distribution patterns.

Table 4: Nigeria's Long-term Population Distribution Patterns

Year	Total population (x1000)	Population aged 0–14 (%)	Population aged 15–64 (%)	Population aged 65+ (%)
1950	37 860	41.7	55.3	3.0
1955	41 122	41.6	55.6	2.8
1960	45 212	41.6	55.6	2.8
1965	50 239	41.9	55.2	2.9
1970	56 132	42.6	54.6	2.8
1975	63 566	43.4	53.8	2.8
1980	73 698	44.0	53.2	2.8
1985	83 902	45.0	52.2	2.8
1990	95 617	44.9	52.3	2.9
1995	108 425	44.1	53.0	2.9
2000	122 877	43.5	53.7	2.8
2005	139 586	43.6	53.7	2.7
2010	159 708	44.0	53.2	2.7

Source: CIA World Fact book, 2013

Nigeria's contemporary population profile features a high proportion of young population, an indication of high birth rates. However, it also shows a slimming aged population, indicative of an increasing death rate or low life expectancy.

Nigeria's population pyramid is dominated by a high proportion of young population, indicating that population growth is likely to increase even more in the future. In the opinion of demographers, Nigeria is in stage 2 of the demographic transition model. The stage is characterized by high birth rates, with declining death rates. The trend results in a steadily rising population profile. Declining death rates in Nigeria in recent times is attributed to the following issues (CIA, World Fact book, 2013):

- Improved health care (e.g. smallpox vaccination)
- Improved hygiene
- Improved sanitation
- Improved food nutrition
- Declining infant mortality rates

The 2013 Nigeria Demographic and Health Survey (NDHS) shows the national population as unevenly distributed across the country. Large areas in the Chad basin, Middle Niger Valley, and the grassland plains, among others, are sparsely populated. The average population density for the nation in 2006 was estimated at 150 people per square kilometer. The most densely populated states are Lagos (2,607 people per square kilometer); Anambra (868 people per kilometer) and Imo (758 people per kilometer). Most of the densely populated states are located in the southern part of the country. However, Kano with an average population density of 442 people per square kilometer, is the most densely populated state in the North.

Nigeria's rapid population growth is driven by improved hygiene and advances in health and education services. Indeed, projections indicate the nation's population is expected to rise to 288.7 million by 2050 (United Nations, 2007). The structure of the population reveals a rather robust working-age population in 2009, at 43% and expected to reach 58% by 2050. By far, the majority of the growth in Nigeria over the next decade is projected to occur amongst children and youth. The population of young adults will also increase, but insufficiently to offset the rapid increase in children they will be caring for. Therefore, youth dependency will grow in the coming decades (CFI, 2013).

3.2 The state of Nigeria's Fertility Transition

Contemporary demographic trends indicate a steady decline in fertility rates in Nigeria since the mid – 1970s (Ibisomi, 2009). Total Fertility Rates (TFR) declined from 7.0 in 1975 to 6.43 between 1978 and 1982. TFR for 1990, 1999, 2003 and 2008 are put at 6.01, 5.2, 5.7 and 5.7, respectively (NDHS, 1990, 1999, 2003 and 2008). It is therefore evident that TFR in Nigeria has trended downwards from the 1970s. The 2013 NDHS reveals a national fertility rate of 5.5, an affirmation of the nation's continuous fertility decline (NPC, 2013).

The overall age pattern of the nation's fertility as reflected in the age-specific fertility rates (ASFRs) indicate that childbearing begins rather early. The data indicate low fertility amongst adolescents (122 births per 1,000 women), peaking at 253 births per 1,000 among women aged 25-29, and decreasing thereafter. The TFR in rural areas (6.2 births) is considerably higher than in urban areas (4.7 births, a rural-urban trend that is true for all age groups in the nation). Table 5 shows age-specific fertility rates across the nation in 2013.

Table 5: Nigeria's age-specific fertility rates, 2013

Age group	Residence		Total
	Urban	Rural	
15-19	62	162	122
20-24	188	267	235
25-28	237	265	253
30-34	218	247	234
34-39	148	169	160
40-44	59	91	78
45-49	20	35	29
TFR (15-49)	4.7	6.2	5.5
GFR	159	213	190
GBR	35	42	39

Notes: Age-specific fertility rates are per 1,000 women

TFR: Total fertility rate expressed per woman

GFR: General fertility rate expressed per 1,000 women aged 15-44

CBR: Crude birth rate expressed per 1,000 population

Source: NDHS, 2013

The 2013 NDHS also reveals fertility disparity across geo-political zones in Nigeria. Fertility is highest in the North West zone, where women have an average of 6.7 children. On the other hand, fertility is lowest in the south-south zone, with an average of 4.3 children per woman. The survey further reveals that fertility varies with the mother's education and economic status. Women with more than secondary school education have an average of 3.1 children, while women with no education have an average of 6.9 children. Also, fertility tends to increase as the wealth of the respondent's household decreases. Women from the poorest households, in general, have three children more than women who live in the wealthiest households (7.0 versus 3.9 children per women).

Feyisitan and Bankole (2002) identified factors accounting for fertility decline in Nigeria as follows:

- **Fertility desires:** In order to sustain fertility declines, there must be changes in fertility norms towards smaller family size. Fertility norms, usually

reflected by the demand for children, are often measured by the number of children desired under prevailing social and economic circumstances. The study reveals that among three or more parity women, the parity-specific percentage of women wanting no more children in Nigeria increased from 5.4 in 1981/82 to 16.9 in 1990 (an increase of about 400%). The trend of a decline in the demand for children was also evident in the percentages wanting no more children in 1981/82 and 1990, reinforced by data on mean ideal number of children. Not only was the overall mean ideal number of children lower in 1999 (6.7 in 1999 as against 8.36 in 1981/82), parity-specific mean ideal number of children was lower for all parities in 1990.

- **Marriage:** The role of marriage in determining fertility levels in the Nigerian society is important. The study reveals that the proportion of women married is declining. For all women, the proportion declined by 10.6% (from 78.4% to 70.1%) between 1990 and 1999. Also, the prevalence of polygamous unions is declining and living arrangements are changing. The proportion of women in polygamous unions declined by 5.4% for all women between 1990 and 1999. However, the variation is masked by significant regional trends, which reveal 33.6% for women in the south-east and 18.9% for women in the Northeast. Also, there is a discernible increase in the age

at which women get married: among women aged 25-49, the medium age at marriage increased by 1 year or 7% between 1990 and 1999. Indeed, age at marriage is higher in urban centres and among women in the southern regions.

- **Contraceptive use:** The study reveals a steady increase in the access to contraceptive technology in Nigeria, particularly since the 1980s. In the early 1980s, 6.2% of women exposed to the risk of child bearing were using contraception and of these, only 0.7% had access to modern (efficient) methods. However, by 1990, 7.5% of all women and 6% of currently married women had access to contraception; of these, 3.8% of all women and 3.5% of currently married women were using modern methods. By 1999, the use of contraception had increased significantly: 15.7% of all women were using any method and 9% were using modern technology. Among married women, use of contraception increased between 1990 and 1999 by 155%, from 6% to 15.3%. Also, by 1999, about 9% of married women were using modern contraceptive methods. The study further reveals an increase in contraceptive use by women in both rural and urban centres between 1990 and 1999. For example, the use of contraception in rural areas increased by 233% and by 76.6% in urban centres.

- **Abortion:** An increase in abortion rate is usually accompanied by fertility decline, particularly in high medium fertility populations. Data on abortion in Nigeria is scanty, owing to the criminalization of the act in the nation. Drawing conclusions from another study on abortion in Nigeria (Henshaw et al, 1998), Feyisitan and Bankole (2002) reveal that each year, Nigerian women obtained about 600,000 abortions, at a rate of 25% of abortions per 1,000 women, aged 15-44. About 40% of abortions are estimated to be performed by physicians in established health care facilities, while the rest are conducted by non physician providers.
- **Other factors:** Among other factors, two were identified in the study as particularly critical to declining fertility rates in Nigeria. First, women's education has been shown to influence fertility rates in Nigeria. Studies have consistently indicated lower fertility rates amongst women with secondary and higher levels of education, according to the study. Also, the participation of women in the labour force, which had increased over the years in Nigeria, is another factor influencing fertility decline. Like their male counterparts, women are often forced to postpone marriage and child rearing in order to consolidate their earnings capacity.

3.3 Economic Transformation and prospects for Demographic Dividends in Nigeria

Nigeria's economy has undergone considerable transformation, particularly in the past decade, characterized by robust growth, averaging about 7% per annum (Euler Hermes, 2014). This is in sharp contrast to the 1980s and 1990s, when the economy experienced slow or even negative growth. Nigeria has emerged as Africa's largest economy, following the rebasing exercise conducted on its Gross Domestic Products (GDP) from 1990 to 2010, resulting in an 89% increase in the estimated size of the economy (AEO, 2014). Consequently, Nigeria's estimated annual GDP has risen to US \$510 billion. The exercise also reveals a more diversified economy than previously thought. It affirms Nigeria's impressive growth over the past decade, estimated at 7.4%, a performance higher than the average for West Africa and far higher than Africa's average, estimated at 5%. The nation's economic performance is underpinned by favourable improvements in the non-oil sector, with real GDP growth of 5.4%, 8.3% and 7.8% in 2011, 2012 and 2013, respectively.

Agriculture – particularly crop production – trade and services continue as the main drivers of the economy. The oil sector, the traditional pillar of growth in the

nation's economy, was not particularly impressive, with 3.4%, - 2.3% and 5.3% estimated growth in 2011, 2012 and 2013, respectively. Table 6 shows Nigeria's recent macroeconomic indicators, including projections to 2015.

Table 6: Nigeria's key Macroeconomic Indicators, 2012-2015

	2012	2013(e)	2014(p)	2015(p)
Real GDP growth	6.7	7.4	7.2	7.1
Real GDP capital growth	3.9	3.6	4.4	4.7
CPI Inflation	12.2	8.5	8.1	8.2
Budget balance % GDP	-1.4	-1.8	-1.2	-2.0
Current account balance % GDP	2.8	4.4	5.8	5.1

Note: Estimates (e), Projections (p)

Source: African Economic Outlook, 2014.

Despite the robust performance of the Nigerian economy over the past decade, economic outlook over the immediate future is not as optimistic. The sharp decline in the prices of crude oil is largely to blame, with prices declining from

about US \$100.00 per barrel in late 2014 to about US \$60.00 in mid-2015 (OPEC, 2015).

It is also noteworthy that Nigeria's rapid economic growth is yet to translate into significant reduction of poverty. Nigeria's poverty headcount ratio, according to a recent world bank (2014) was 35.2% and 33.1% of the population in 2010 and 2013, respectively. Despite the challenges associated with Nigeria's economic profile, the nation has good prospects for reaping the benefits that may accompany its emergent fertility decline. With several industrial economies in Europe and Asia constrained by aging populations and facing slow growth, Nigeria's large and growing working-age populations can become drivers of growth. The nation already has the ninth-largest working-age population in the world, and by 2030 the proportion of Nigeria's working-age group (15-64 years) is expected to be higher than the current position. At current labour participation rates (56%), the demographic dividend could add 0.8% per year to GDP. However, if labour participation rates can be raised to Indonesian levels (68%), labour inputs could add 1.0% to annual GDP by 2030 (MGI, 2014).

A report presented at the World Economic Forum in 2014 by the Global Agenda Council on population growth (GACPG) reveals prospects for reaping demographic

dividends in Nigeria. While affirming that Nigeria's fertility rate at 5.5 children per woman is higher than the average in sub-Saharan Africa and more than twice the World average, the nation's age structure can also become a potential asset to foster growth and position itself to achieve a demographic dividend, particularly with its higher proportion of working-age population relative to the non-working age group. The report projects a significant rise in the share of working-age people, with a potential ratio of working-age to non-working age people rising to approximately 2 by 2050. If employed productively, the working-age group can cause Nigeria to reap significant economic gains, according to the report. In a projection to 2030, the report reveals a "business-as-usual" scenario would place Nigeria's economic growth at 4.02% during 2010-2013, roughly its growth trajectory from 2000-2008. However, leveraging on demographic change and projected life expectancy increases the GDP per capita increases to almost 12% higher by 2020 and nearly 29% higher by 2030.

However, the report cautions that the dividend will not be automatic. In order to seize the opportunity, Nigeria's policy framework must develop its work force and ensure its productivity. The report further emphasizes the need to accelerate progress in both fertility and mortality reduction through quality reproductive health services and commodities; enhance access and quality of education for

boys and girls and encourage women participation in the labour market, while enacting policies to enable sustainable job creation schemes for its youth.

The report acknowledges regional variation in Nigeria's demographic transition trends. It noted that the Southern geopolitical zones (SS, SW and SE) are already undergoing a demographic transition, with slower population growth and favourable age structures, less dependency and consequent higher per capita incomes. The Northern geopolitical Zones (NW, NE and NC), on the other hand, have more rapid growth and youthful age structures, with higher dependency and lower per capita income. Finally, the report concludes with the following recommendations (GACPG, 2014):

FEDERAL LEVEL

- Conduct an immediate review and revival of the National Population Policy and its implementation mechanisms, with strong leadership by the president and National Assembly.
- Accelerate ongoing efforts to improve maternal and child health, and ensure all unmet needs for family planning are matched with Federal Government resources, including a focus on teenage-friendly reproductive health services.

- Fast track access to quality basic, secondary and post-secondary education for girls and boys.
- Enact culturally appropriate affirmative action policies and laws to encourage women's participation in the work force and business opportunities, particularly in the northern parts of the country.
- Use various media and the local film industry to promote culturally-appropriate role models for girls and young women.
- Constructively engage religions and traditional leaders with positive assurances of government's intention.

STATE LEVEL

- Review population policy and implementation approaches, deriving guidance from the reviewed national policy by each state.
- Commit resources to complement federal government efforts in the areas mentioned above, by each state

4.0 SUMMARY, RECOMMENDATIONS AND CONCLUSION

4.1 Summary

Demographic trends are important issues in contemporary development discourse. Development practitioners have advocated demographic transition in the population profile of developing countries in order to benefit from the 'dividends' which often accompany such transitions. Recent survey data reveal that African fertility rates have fallen in almost all African countries; in about half of them, the fall has slowed down and in a few cases it has stopped. While the fertility decline in Nigeria is less than the regional average in Sub-Saharan Africa, indications are that the nation is on course to reap its demographic dividends in future. This development holds serious implications for demographic dividends across the continent since a decline in population growth is an important driver of economic growth. Across the region, many countries are in their early stages of demographic transition, particularly the fertility decline, and a trend that is much slower than in other less-developed regions of the world. However, demographic trends in the region also reveal an increase in the working-age population, which holds positive implications for demographic dividends.

4.2 Recommendations

This section presents recommendations aimed at fast tracking Africa's fertility decline and to hasten the demographic dividends that often accompany it. The recommendations are as follows:

- **Increase Women's access to Contraceptive Technology:** In several African Countries, there is insufficient access to family planning services and contraceptive technologies by women, resulting in high fertility rates. Efforts should be mobilized to increase access to contraception through designated outlets in both rural areas and urban centers.
- **Improve literacy rates:** Illiteracy remains problematic in several African countries, undermining development efforts. The problems assume even more protracted gender dimensions across the region. Education is important for women and girls if Africa's fertility transition is to be successfully pursued. Various studies reveal that educated women often postpone child-bearing decisions, a trend that is helpful to fertility transition in Africa.

- **Abolish Harmful Cultural Practices:** There is urgent need to abolish harmful cultural practices across the African continent, particularly as they relate to the wedding of minors. Under-aged individuals or minors are often victims of harmful practices, where children are given away in marriages arranged by families, with or without the consent of the minors involved. This development has often been blamed for Africa's high fertility and mortality rates.
- **Upgrade Healthcare Facilities:** There is need to upgrade healthcare facilities in most African countries to mitigate high levels of maternal and child mortality rates. Rural areas are particularly vulnerable to high mortality rates, fueled by the dearth of primary health-care facilities. In urban centres, accessibility to effective health-care services is undermined by the emergent demographic explosion, which has become the bane of rapid urbanization in most African countries.
- **Expand Economic Opportunities for Africa's Youth:** Africa has the largest proportion of youths in the world, with serious consequences for that segment of the population. The demographic profile in most African countries also reveals a high rate of youth unemployment, often posing

grave consequences for both social and political stability. Policy makers need to design programmes embracing socio-economic development, targeting the region's teeming youthful populations. Opportunities should include capacity-building for skills acquisition, as well as entrepreneurship and enterprise development programmes. A successful programme embracing opportunities for Youth is particularly important to achieving the demographic dividends associated with fertility transition underway in African countries.

- **Embrace Gender Equality:** In order to fully reap the benefits associated with fertility transition in Africa, there is need for mainstreaming gender equity into the region's development policy. Women have as much to contribute as men do to Africa's socio-economic development agenda. Therefore, there is need to strengthen institutional capability and foster gender equity in African societies as a tool for fast tracking demographic dividends.
- **Build Macroeconomic Policy for Inclusive Growth:** Policy makers in Africa are to build macroeconomic policy instruments embracing inclusive growth as a key strategy to achieve the demographic dividends across the region.

This is growth that features widespread contributions to national output by all segments of society, including the poor, aged, women, youth and other vulnerable elements of the population.

- **Deepen Poverty Reduction Strategies:** A major impediment undermining socio-economic development in Africa is endemic poverty. About one-half of the region's population is living in absolute poverty. In order to tackle the scourge, most African countries have embraced various poverty reduction programmes since the 1980s, with varying degrees of transparency and accountability. There is an urgent need to deepen these strategies to reap the benefits that accompany the emergent fertility decline in many African countries. The strategies should embrace rehabilitation of physical and social infrastructure, improved access to social services; public sector reforms; capacity-building and social transfers to the poor.

4.3 Conclusion

Africa's demographic profile reveals a rapid population growth across the continent from the 1950s until recently, characterized by robust fertility rates, ranging between 5.5 and 7.5 children per woman. However, indications are that

fertility rates have peaked on the continent by the mid-1980s and are now declining in several countries. Lower fertility rates translate to a lower overall population growth rate, projected at 2% per annum by 2030; with a peak population of 1.6 billion from 1.0 billion in 2010. The region's demographic transition profile provides challenges and opportunities for policy makers to leverage effective policies aimed at fast tracking demographic dividend that may accompany declining fertility rates across the continent.

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