

SIX

Nigeria

The Relationship between Growth and Employment

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UNDERSTANDING THE RELATIONSHIP BETWEEN GROWTH AND EMPLOYMENT IN NIGERIA

Nigeria has maintained remarkable growth over the last decade, recording an average growth rate of 6.8 percent from a large economic base, and the potential for further growth is reasonably high. Real gross domestic product (GDP) growth was estimated at 6.23 percent in 2014, compared to 5.49 percent in 2013. The rebasing of its GDP in April 2014 by the National Bureau of Statistics, to better reflect the size and structure of the economy, saw it surge past South Africa to become Africa's largest economy, with a rebased GDP estimate of US\$454 billion in 2012 and US\$510 billion in 2013. The rebased GDP, using updated prices and improved methodology, also reveals a more diversified economy than previously thought, with rising contributions of previously

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undocumented services (including the entertainment industry) to GDP. In addition, as a result of banking sector reforms, especially the bank consolidation exercise of 2004, an increasing number of private Nigerian banks are present in many African countries.

However, given the country's high population, per capita GDP was only US\$2,688 in 2013, ranking 121st compared to South Africa, which, at 69th, had a per capita GDP of US\$7,507. The rebasing also indicated that the Nigerian economy is transforming from an agrarian economy to a tertiary service economy, without going through the intermediate stage of industrialization. This atypical transition, the so-called tertiarization that has so far failed to deliver quality jobs, poses challenges for the sustainability and inclusiveness of economic growth in Nigeria.

Recent growth has also not translated into significant social and human development, contrary to the postulates in the development literature that associate faster economic growth with poverty reduction. The 2010 Nigeria Poverty Profile Report by the Nigeria National Bureau of Statistics (NBS 2010a) estimated the poverty incidence at 69 percent in 2010, up from 54.4 percent in 2004, using the Harmonized National Living Standard Survey (HNLSS) of 2009–10. The country's performance is at odds with the general international trend of poverty reduction, in particular in other countries experiencing rapid economic growth (Ajakaiye and others 2014).

Nigeria's socioeconomic indicators are also poor. The level of unemployment increased from 23.9 percent in 2011 to 25 percent in 2014, while the country's human development index (HDI) value increased by only 8.1 percent in the last decade, from 0.466 in 2005 to 0.504 in 2013, positioning the country at 152 out of 187 countries. Albeit marginal, Nigeria has made some progress in other development indicators. According to the United Nations Development Programme (UNDP) (2014) HDI, which takes into account life expectancy and literacy as well as per capita GDP, life expectancy at birth increased by 6.9 years between 1980 and 2013, mean years of schooling increased by 0.2 years, and expected years of schooling increased by 2.3 years. Gross National Income (GNI) per capita also increased by about 25.7 percent between 1980 and 2013.

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The country remains highly dependent on the oil sector, which accounts for about 70 percent of government revenues and 85 percent of exports. While oil revenues have helped support the country during times of boom, the oil sector also presents a major challenge during bust periods. For example, crude oil prices lost over 50 percent in the last quarter of 2014 and traded close to 50 dollar per barrel at the end of the year.

This has had a devastating effect on Nigeria, with major fiscal contractions among the three tiers of government, and a slowdown in overall economic growth. The economy has been particularly hard hit by some major external shocks, including the rebalancing of the Chinese economy, which brought with it lower commodity prices; the slow global economic recovery; and other global financial developments. They have impacted the Nigerian economy through trade, exchange rates, asset markets (including commodity prices), and capital flows, further aggravating the country's longstanding vulnerabilities, including inadequate infrastructure, high unemployment, and high poverty rate.

In a bid to shore up the Naira value and preserve the external reserves, Central Bank of Nigeria (CBN) devalued the Naira in November 2014 by 8.4 percent. However, with sustained pressure on the foreign exchange, the CBN shut down the official window in February 2015, implying another tactical devaluation of the Naira. This move led to relative stability in the currency market as the CBN intervened to meet excess demand through special interventions. Given continued efforts of the CBN to support the Naira in the face of declining oil prices, Nigeria's external reserves plummeted to US\$30.3 billion as at 17 March 2015—barely enough to cover six months of imports—a threshold that posed a major threat to Nigeria's balance of payments transactions.

Perceived neglect and economic marginalization have also fuelled resentment in the predominantly Muslim North. The militant Islamist group, Boko Haram, has grown increasingly active and deadly in its attacks against state and civilian targets, including the April 2014 abduction of 276 schoolgirls from Chibok, which attracted extensive international attention.

Meanwhile, Nigeria's democratic process was further consolidated with the relatively peaceful outcome of the general elections held in May 2015, which ushered in a new regime. For the first time in the

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country's history, power was successfully transferred from a ruling government to the opposition. Elected officials both at the federal and state level are already confronted with a perfect storm in the area of the economy as a result of dwindling revenues. The challenges that the Buhari administration has been trying to confront include the diversification of the economy, fighting corruption through blockage of fiscal leakages, prioritization of government expenditures to boost investment in critical infrastructure, and job creation. While intuition suggests that employment growth and poverty reduction are closely linked, there has been little research in this area in Nigeria apart from Treichel (2010) and World Bank (2016). This paper, therefore, tries to fill this gap by studying the experience of Nigeria, where average annual economic growth has reached 6.8 percent in the last decade but unemployment has been rising persistently. In line with the orientation of the project, the Nigerian case study intends to deepen our understanding of the character of Nigeria's non-inclusive growth experience and identify the potential limits and constraints to inclusive growth experience and the likely domestic and external economic growth opportunities available for Nigeria in the medium- to long-term, and explore how these can be exploited.

STYLIZED FACTS OF LABOR MARKETS, EDUCATION, AND GROWTH IN NIGERIA

Nigeria has continued to witness significant growth above the continental average in the last fifteen years. Table 6-1 shows that Nigeria's Gross Domestic Product (GDP) grew from 3.1 percent in the 1990s to an average of more than 5 percent beginning in 2000, largely driven by the value addition from the service sector.

Table 6-2 presents the sectoral composition of Nigeria's GDP. While the economy has traditionally been dominated by crude oil production, the sector accounted for only about 10 percent of the GDP in 2014.

Nigeria is still predominantly agrarian. Approximately 50 percent of the population engages in agricultural production at a subsistence level despite its steady decline and benign neglect as a result of the oil boom

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TABLE 6-1. *Growth and Share of Sectors in Nigerian GDP Growth, Five-Year Averages, 1990–2014*

Percent of GDP					
	1990–94	1995–99	2000–04	2005–09	2010–14
Agriculture value added	25.4	27.5	29.2	25.1	21.9
Industry value added	24.8	22.4	22.3	21.2	25.5
Services value added	49.8	50.1	48.4	53.7	52.6
Growth in GDP (%)	3.1	2.1	6.5	6.3	5.7

Source: Authors' computation from underlying data obtained from World Development Indicators, 2015 (World Bank 2015a).

that the country experienced in the early 1970s. Agriculture as a percentage of GDP has stabilized at about 20 percent in 2014 (table 6-2), compared to about 40 percent in the mid-1980s. Agricultural holdings are typically small with low yields and low productivity.

The industrial sector's contribution to the GDP declined from 27.7 percent to 24.2 percent in 2014. Of note is the manufacturing sector, which has been in a deplorable situation. Its contribution to GDP has been declining since the structural adjustment era, and currently hovers around 10 percent, as shown in table 6-2.

The decline in industrial capacity, especially in heavy industry, has had serious impact on Nigeria's long-term economic growth and poverty reduction. Nigeria's steel sector, especially the Ajaokuta Steel Company, no doubt represents a perfect illustration of why Nigeria's industrialization drive remains stunted. Despite having the second largest iron ore deposit in Africa, Nigeria has, curiously, failed to breathe life into the moribund Ajaokuta Steel Company in Kogi State, which was conceived as far back as September 1979 with the vision of generating important upstream and downstream industrial and economic activities critical to the diversification of the economy into an industrial one. While the project would directly employ about 10,000 workers at the first phase of commissioning, upstream and downstream industries are expected to engage over 500,000 employees.

Unfortunately, none of the benefits has accrued to Nigeria, even as the country continues to spend about \$3.3 billion annually on steel

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TABLE 6-2. *Sector Composition of Nigeria's Gross Domestic Product*
Percent of GDP

<i>Sector</i>	2011	2012	2013	2014	Q1 2015	Q2 2015
Agriculture	22.3	22.1	21.0	20.2	17.8	17.9
Industry	27.8	26.8	25.4	24.2	21.1	21.2
Oil and gas	17.5	15.8	12.9	10.8	6.6	7.6
Solid minerals	0.1	0.1	0.1	0.1	0.1	0.1
Manufacturing	7.2	7.8	9.0	9.8	10.2	9.3
Construction	3.0	3.1	3.3	3.6	4.2	4.2
Services	49.9	51.1	53.7	55.6	61.1	60.9
Information and communication	10.1	10.1	10.4	10.8	11.9	13.9
Finance and insurance	2.4	2.8	3.0	3.1	4.0	3.7
Real estate	7.3	7.7	8.3	8.4	7.8	8.7
Accommodation and food	0.4	0.5	0.8	0.9	1.3	0.7
Services, arts, entertainment, and recreation	0.1	0.2	0.2	0.2	0.3	0.2
Trade, wholesale and retail	16.4	16.5	17.1	17.6	20.1	18.9
Other services	13.2	13.3	13.8	14.5	15.8	14.8

Source: World Bank (2015b).

importation, which is set to rise to at least \$15 billion in the next ten years to meet its high infrastructure needs. The steel complex has become a subject of intense controversy and politicking by various interests, culminating in the termination of the concession agreement between the federal government and Global Infrastructure Nigeria Ltd (GNIL), an Indian firm, in 2008. Although, the federal government had accused the Indian firm of breaching the provisions of the concession agreement and asset stripping, the company had gone to the International Court of Arbitration in London, challenging the revocation of the agreement. While the legal hurdles slowing down the project have been removed, the project has been a subject of legislative scrutiny following revelations that the country was paying huge sums of money to the company's idle staff.

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As shown in table 6-2, tertiary activities have gradually been on the increase, rising from 50 percent in 2011 to almost 61 percent of Nigeria's GDP in the first half of 2015. The major service subsectors include retail and wholesale, real estate, information, and communication (African Economic Outlook 2015). Trade, information and communications technology, and real estate together comprise almost 70 percent of the services sector output. The service sector trade, especially, is still dominated by informal sector activities operating at low margins and low levels of productivity.

Trade was the single largest sectoral component of GDP in the first half of 2015, at 20 percent, followed by agriculture (17.8 percent), information and communications technology (11.9 percent), manufacturing (10.2 percent), real estate (7.8 percent), with oil and gas contributing only 6.5 percent of the country final output.

In sum, despite the high economic growth witnessed in the last decade and a half, the country has not yet been able to transform into an innovation-based, high-skilled, "knowledge" economy; hence, its trade composition and pattern has remained predominantly on primary production, with minimal participation in the global value chain.

The evidence in tables 6-1 and 6-2 suggests that the process of structural transformation, though in its formative stage, has commenced in Nigeria. The country is making the atypical transformation from agriculture to services, and this is not unique to Nigeria. Several developing countries in Sub-Saharan Africa and Latin America are witnessing what Rodrik (2015) described as premature de-industrialization, as the bulk of labor are absorbed in nontradable services operating at very low levels of productivity, in activities such as retail trade and housework. Industry, especially manufacturing, has transformed in several ways, especially with the dominance of global supply chains. As Rodrik (2014) established, manufacturing has become much more capital- and skills-intensive, with diminished potential to absorb large amounts of labor released from low-productivity agriculture. This has sparked the debate on whether a services-led model can deliver rapid growth and good jobs in Africa in the way that manufacturing once did. Ghani and O'Connell (2014), using historical data, established that services can, indeed, be a growth escalator, while skeptics like Rodrik (2014) and

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Kormawa and Jerome (2015) posit that services can hardly deliver rapid growth and good jobs, especially in developing countries where most operate at low margins and low levels of productivity.

The result is slightly at odds with Adeyinka and others (2013). Based on an analysis of Nigeria's General Household Survey (GHS) from 2006 to 2009, they indicated that Nigeria has exhibited what one might consider the standard pattern of structural change, with labor leaving the agricultural and wholesale and retail trade sectors to join sectors such as manufacturing, communications and transportation, and services. Specifically, aggregate labor productivity grew by approximately 17 percent from 1996 to 2009 due to the movement of labor to higher productivity sectors. While positive, this is smaller than the growth in labor productivity arising from within-sector improvements, which resulted in aggregate labor productivity growth of approximately 62 percent.

The results are consistent for a resource-abundant country that has different relative price structures that impact on their structural transformation, especially through the so-called "Dutch disease," which makes nonnatural resource sectors unprofitable.

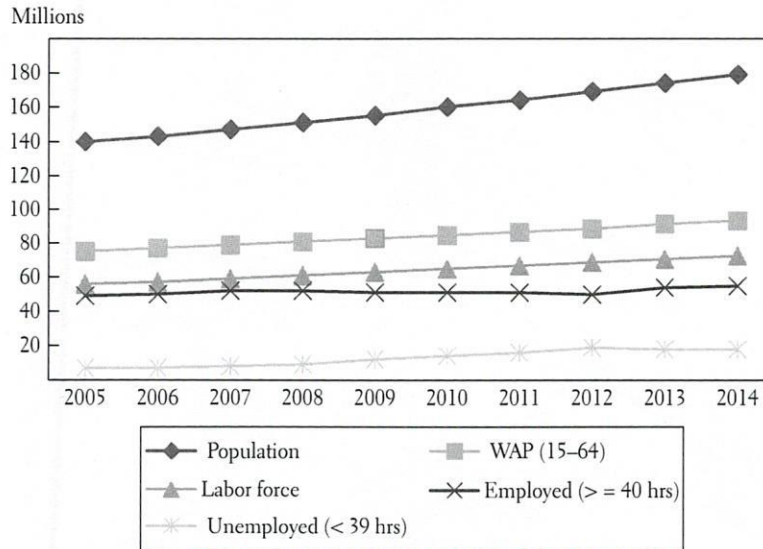
While aggregate labor productivity growth is positive, structural change has not proceeded at a pace consistent with the large gaps in labor productivity between sectors. The country's policy environment hampers structural transformation through restriction of agricultural productivity, and poor infrastructure has constrained the business environment and slowed down the expansion of manufacturing and the business services.

Structure of Nigeria's Employment

In Nigeria, the total labor force is made up of persons age 15–64 years, excluding students, home-keepers, retired persons, stay-at-home parents, and persons unable to work or not interested in work (Kale and Doguwa 2015), while the unemployment rate is the proportion of the labor force who were available for work but did not work in the week preceding the survey period for at least thirty-nine hours. The labor market and employment situation as presented in figure 6-1 reveals that there was an average increase of 2.8 percent in the population growth between 2010 and 2014. Nigeria's population rose from 138.6 million in

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FIGURE 6-1. Trend in Population and Labor Market Situation, 2005–14

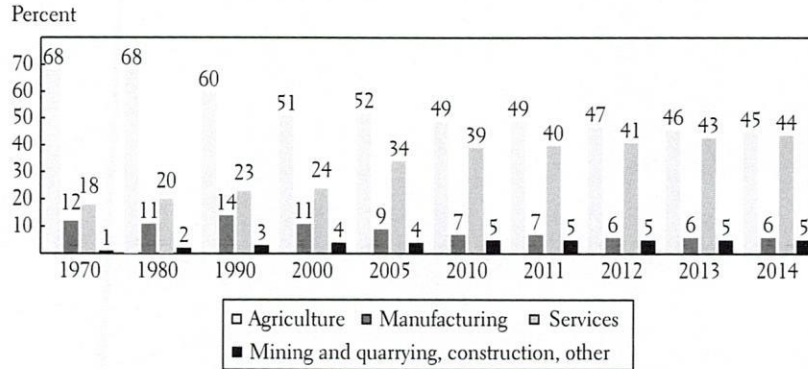


Note: WAP=working age population

2005 to 159.7 million in 2010, and to 178.5 million in 2014. In the same vein, the labor force, made up of the total number of employed and unemployed persons, increased by 2.9 percent on average, from 65.2 million in 2010 to 72.9 million in 2014. However, the total labor force in full remunerative employment increased at an average of 2 percent over the period, compared to 6.1 percent and 16.48 percent for the underemployed and unemployed population, respectively.

Figure 6-2 presents the data on employed persons in Nigeria by sector from 1970 to 2014. Agriculture has continued to provide the most jobs for the country’s labor force, although this is declining. In 2014, it accounted for 45 percent of all jobs, down from 51 percent in 2000. The services sector is the second largest job-providing sector, rising from 24 percent in 2000 to 44 percent in 2014, while the share of the manufacturing sector fell from 11 percent in 2000 to 6 percent in 2014. While the service sector is the fastest growing sector, the fall in employment in manufacturing industries explicates significant levels of de-industrialization. Its composition fell from 12.3 percent in 1970 to 9.3 percent in 2005 and 6 percent in 2014.

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FIGURE 6-2. *Employment Trend by Sectors (shares), 1970–2014*

While information on the employment situation in Nigeria is still confined largely to the formal sector, with scant information on the informal sector, it is generally acknowledged that the ascribed informal workforce has grown tremendously, both in real terms and in activity diversification since the Structural Adjustment Program (SAP) of 1986. Estimates suggest that the informal sector accounts for between 45 percent and 60 percent of the urban labor force, up from about 25 percent in the mid-1960s and the percentage is more in rural areas (Abumere and others 1995). A national survey carried out in the year 2000 puts the number of informal sector enterprises in the country at 8,604,048, employing 12,407,348 persons. (Central Bank of Nigeria 2001a). By 2010, the total number of people employed in the informal sector grew to 48,602,017 people, according to Nigeria's National Bureau of Statistics, as shown in table 6-3.

A cursory examination of table 6-3 indicates that employment in Nigeria's informal sector generally follows the same pattern as the formal sector. It is dominated by agriculture, wholesale and retail trade, and manufacturing. The three sectors contributed a whopping 66.4 percent of total employment.

While definitions and descriptions of the informal economy vary considerably, three successive national surveys recognize some noteworthy attributes of this sector, including its broad activity spectrum that spans the entire segment of the economy, its relatively low productivity, the dominance of youth in the age cohort, with the 20–40 years group accounting for over 50 percent of the workforce, ownership structure

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TABLE 6-3. *Informal Sector Employment, 2010, Nigeria*

<i>Sector</i>	<i>Number employed</i>	<i>Percent</i>
Agriculture, forestry, and farming	14,837,693	30.5
Wholesale and retail trade, motor vehicle/motorcycle repair	12,097,189	24.9
Manufacturing	5,337,000	11.0
Other service activities	3,471,702	7.1
Accommodation and food services activities	2,730,308	5.6
Transportation and storage	2,009,183	4.1
Education	1,557,665	3.2
Construction	1,142,569	2.4
Administrative and support service activities	986,480	2.0
Public administration and defense, compulsory social security	800,333	1.6
Professional, scientific, and technical activities	779,209	1.6
Human, health, and social work	739,936	1.5
Activities of household as employers, undifferentiated goods	551,353	1.1
Information and communication	469,513	1.0
Arts, entertainment, and recreation	390,275	0.8
Financial and insurance activities	171,403	0.4
Electricity, gas steam, and air conditioning supply	152,610	0.3
Mining and quarrying	146,488	0.3
Water supply, sewage, waste management, and remediation activities	86,778	0.2
Activities of extraterritorial organizations and bodies	75,633	0.2
Real estate activities	68,697	0.1
Total	48,602,017	100.0

Source: National Bureau of Statistics, 2010c

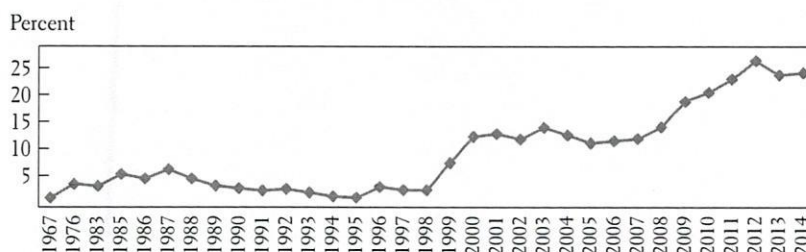
that is mostly sole proprietorship, and spatial location with a majority of informal enterprises neighborhood-based (Abumere and others, 1995; Central Bank of Nigeria, 2001a; and Oduh and others 2008).

Profile of Unemployment in Nigeria

The unemployment rate across Nigeria has been very high since the beginning of this century. The indicator that measures the proportion of active population that is without but is actively seeking work increased

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FIGURE 6-3. Unemployment Rate, Nigeria, 1967–2014



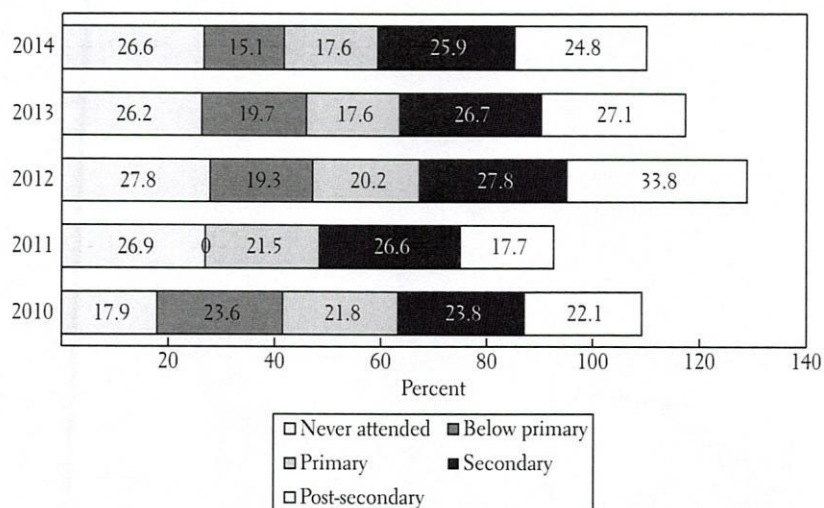
to 25.1 percent in 2014 from 24.7 percent in 2013, as shown in figure 6-3. Since 2000, the rate of unemployment has grown at a compound annual average of 4.8 percent, even as it has continued to fluctuate and intensify.

Rising rural unemployment is also evolving sectorally, as opportunities are shifting away from agriculture despite the high prevalence of subsistence farming. Stagnating production and low productivity in the sector, where more than half of the rural population works, and the high growth witnessed in the services sector, are key reasons for the large variations across urban and rural labor groups. The unemployment rate is much higher in the northern part of the country, where two-thirds of the population engage in subsistence agriculture, and relatively lower in the southern part where more than half of the population is engaged in self-employed wage work (World Bank 2016).

Data from the National Bureau of Statistics (NBS) also shows that there is a higher incidence of unemployment for women than men; and in recent times, their access to quality job opportunities declined even further. While the number of unemployed males has hovered around seven to eight million in the past five years, the unemployed female population increased from 6.7 million in 2010 to over 10 million in 2014 (National Bureau of Statistics 2015b).

Youth unemployment, on the other hand, is intensifying. Large concentrations of youth, both trained and untrained, educated and uneducated, are idle and without any hope of securing a decent job. Youth unemployment was recorded as 45.8 percent in 2014. As can be seen from figure 6-4, unemployment is generally high regardless of level of education. For example, in 2014, unemployment rates among persons

FIGURE 6-4. Unemployment Rate, by Educational Group, 2010–14



who never attended school and those with secondary and post-secondary education hover around 25 percent, while the unemployment rate among persons with primary education or below is somewhat lower, at 15.1 percent and 17.1 percent, respectively. Among those who have secondary and post-secondary education, skills gaps and job search barriers are major barriers to gainful employment.

BRIEF REVIEW OF THE LITERATURE

The current phenomenon of “jobless growth” witnessed across several developing economies, some in Africa, poses far-reaching challenges on the age-old economic assumption of growth in GDP directly resulting in an increase in employment. Okun’s (1962) pioneering and seminal contribution provided some evidence in this regard. In his study of the statistical relationship between a country’s unemployment rate and economic growth rate, he demonstrated that there is a positive relationship between output and employment, given the logical conclusion that output depends on the amount of labor used in the production process. However, economic realities have since evolved.

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Today, jobless growth has emerged as a global phenomenon. In its outlook on the 2015 Global Agenda, the World Economic Forum (WEF) reports that deepening income inequality and persistent jobless growth are two of the most pressing challenges currently confronting mankind. Jobless growth exists where economies exiting recessions demonstrate economic growth while employment is either decreasing or barely stabilizing (World Economic Forum 2014). In such situations, unemployment remains stubbornly high despite economic growth. According to WEF, these characteristics are often a result of technologically derived job displacements.

Some papers have focused on sectoral patterns of economic growth. For instance, Hull (2009), in her investigation of the relationship between economic growth, employment, and poverty reduction, identifies sectors as “more productive” and “less productive,” such that growth in a sector will not directly lead to general benefits to all sectors of the economy. This highlights the relevance of the productivity intensity of sectors as a tool for profiling growth. Using a sample of 106 growth periods covering thirty-nine countries, Gutierrez and others (2007) concluded that the sectoral growth pattern and employment/productivity profile vary significantly among countries. According to their study, the sectoral pattern of employment generation and productivity growth are key determinant factors of the rate of unemployment. Loayza and Raddatz (2010) also support this argument that growth in unskilled-intensive sectors contributes more to poverty reduction by providing better jobs.

The World Bank (2005), in its study of fourteen countries, noted that three countries that experienced pro-poor growth witnessed more labor-intensive growth. In another country-specific panel data analysis for the manufacturing industry carried out on eight Central and Eastern European countries, employment was completely de-linked from output, mostly in medium and low skilled sectors (Onaran, 2008). This result was particularly apparent in the Czech Republic, Bulgaria, and Romania, not only in the first period of transition recession, but also in the post-recession period. Boeri and Garibaldi (2006) had also provided evidence that in the aftermath of 1996, the period of economic downturn in the CEE-10 led to significant job destruction, and growth in GDP did not result in statistically significant job creation. This study

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was also consistent with Lehmann (1995), who argued that capital and managerial shortages could lead to weak labor demand.

Based on recent studies on Africa, it has been observed that the continent's rapid growth over the last decade has so far not been able to create significant employment opportunities. Ancharaz (2010) alludes to the hypothesis that such growth has been driven largely by commodity exports. Export-led growth does not necessarily translate into higher employment levels, considering that extractive industries are generally capital-intensive and may not create many jobs, especially for women, as they expand. Resource-driven countries in the continent are further faced with lack of export diversification and equally concentrated markets. Ancharaz (2010) confirmed that export growth was strongly correlated with real GDP growth, particularly in Angola, Gabon, and Nigeria.

Olotu and others (2015) view the phenomenon as a result of an inability to fully utilize available factors of production. The study on Nigeria argues that jobless growth is increasing a result of the very high number of graduates produced every year and the country's incapacity to absorb them. The country's growth and business environment, which has not been able to significantly expand the formal sector, has left the economy largely trapped in its pre-2001 trajectory, when it started to witness a sustained expansion in its non-oil economy.

On the empirical front, the World Bank has in recent years developed the Job Generation and Growth (JoGGs) decomposition tool to link "changes in employment, output per worker and population structure at the aggregate and sectoral level" (World Bank 2010). Using Shapley decompositions, the methodology decomposes growth in GDP per capita in two consecutive periods, in its employment, productivity, and demographic components to disentangle the sources of output-per-worker growth. The JoGGs decomposition tool has been adopted to analyse the incidence of jobless growth in Uganda (Bbaale, 2013) and Rwanda (Malunda, 2013). In Uganda, Bbaale proved that the industrial and services sectors have higher prospects for alleviating poverty through productivity and employment generation. On the other hand, Malunda's research on employment intensity in Rwanda showed that the country's manufacturing sector lagged behind other sectors in terms of output and productivity growth. His results also showed that

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growth in the East African country's dependency ratio impacted negatively on its per capita GDP growth.

Using the JoGGs decomposition tool, particularly in the context of economic structural transformation, Byiers and others (2015) recently studied employment means in a group of Development Progress countries from Latin America, Africa, and Asia.¹ The paper showed that inter-sectoral shifts contributed more to growth than rising productivity within them. These labor movements were also toward the services sector, including precarious, low-productivity jobs, rather than manufacturing. Byiers and others additionally raised a rather crucial aspect of employment dynamics, underscoring the importance of politics as a key determinant of employment progress. New assessments of African government policies and institutions have emphasized governance as a crucial factor responsible for the uneven growth performance in most of Africa (African Development Bank, 2013).

GROWTH AND LABOR MARKET ANALYSIS

This section provides a brief overview of the data and methodology adopted for the study.

The Data

To profile Nigeria's growth in terms of the employment and productivity of sectors, we make use of aggregate data: total GDP, population, and employment from 2005–14, at five-year intervals of (2005–09) and (2010–14) as presented in table 6-A1. Monetary data are sourced from the National Bureau of Statistics (2015a) and World Bank World Development Indicators (2015a). Population and labor statistics are sourced from the United Nations Department of Economic and Social Affairs (2015), the National Bureau of Statistics (2015b), and Nigerian Institute for Social and Economic Research (NISER) (2015).² The sectoral disaggregation of the economy into agriculture, mining, quarrying and construction, manufacturing, and services is due to data limitation. Results are presented in the stepwise approach using the Job Generation

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and Growth Decomposition (JoGGs) tool from the World Bank. The unit for all monetary values is 1 unless otherwise stated.

Methodology

We adopted the methodology of Gutierrez and others (2007)³ and the World Bank stepwise decomposition approach using the Shapley decomposition method (World Bank 2010) to untangle the roles of output per worker, employment, and population structure in growth changes at the aggregate and sectoral levels. The Shapley decomposition method, presented in a stepwise manner, is used to decompose per capita GDP growth into output per worker, employment, and capital. Following this method of decomposition, GDP per capita, $Y/N = y$ can be written as:

$$\frac{Y}{N} = \frac{Y}{E} \frac{E}{A} \frac{A}{N}$$

Equation (1)

or

$$y = \omega \bar{e} a$$

Where Y is total value added, E is employment, A is the population of working-age, and N is the total population.

The ratio $\omega = Y/E$ is output per worker (labor productivity), $e = E/A$ is the ratio of people employed to the total working-age population (that is, employment rate),⁴ and $a = A/N$ is the ratio of working-age population to total population (that is, dependency ratio).

Applying the Shapley decomposition approach to equation (1), the changes in per capita value added can be decomposed into changes in labor productivity, changes in employment rates, and changes in the dependency ratio. The approach is based on the marginal effect of eliminating the change in each of the contributory components in a sequence on the value of a variable and for each component, by considering all possible alternatives, thus eliminating residuals using weighted average. Each component, thus, has the interpretation of a counterfactual. For instance, from equation (1), the amount of growth that can be

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attributed to changes in output per worker (w) is obtained by calculating the resulting growth in per capita value added under the hypothetical scenario in which employment rate (e) and the share of the working-age population in total population (a) had “remained constant,”⁵ but output per worker had changed as observed. The result between the hypothetical growth and the observed growth is defined as the contribution of changes in output per worker to per capita value added growth. The same interpretation applies to other components.

Shapley decomposition has the advantage of being additive. Therefore, if the marginal contribution of each component to the observed change in per capita value added, obtained through Shapley decomposition is $\bar{\omega}$, \bar{e} , and \bar{a} , then:

$$\frac{\Delta y}{y} = \bar{\omega} + \bar{e} + \bar{a}$$

Equation (2)

While \bar{e} refers to changes in employment as a fraction of the working-age population (employment rate), the term $\bar{\omega}$ captures changes in output per worker, and \bar{a} reflects changes in the demographic structure of the population, that is, changes in the dependency ratio. Observed increase in employment rates (e^-) will reflect increases in participation and movements of people out of unemployment and into employment.

Although, the term $\bar{\omega}$ captures changes in output per worker, the interpretation is not completely direct due to influence from: 1) increases in the capital/labor ratio; and 2) relocation of jobs from bad jobs sectors (low productivity) to good jobs sectors (high productivity). Under the constant returns to scale assumption, we can explain the first two influences: if $Y_t = \Phi_t f(E_t, K_t)$, where K_t is the capital stock at time t , Φ_t is a technological parameter, then we can imply that output per worker Y_t/E_t is equal to $\Phi_t f(1, K_t/E_t)$. Change in the parameter Φ_t will capture all other sources of growth not due to changes in capital/labor ratio (this is the Solow residual). It will, therefore, mainly capture changes in technology and relocation of production between sectors with different productivity levels (inter-sectoral shifts). However, we should note that it may also capture cyclical behavior of outputs; given that firms operating in economic downturns may have underutilized

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capital; when the demand rises again, this will be reflected as a rise in output per worker. The third influence is from workers moving to a high-productivity sector from a low-productivity sector, so that at the aggregate level, average output per worker increases.⁶

The last component in equation (2) reflects changes in the demographic structure of the population. For instance, due to growing dependency ratio, an increase in labor productivity and employment may affect per capita income negatively if the employment and productivity growth is not sufficient to counter the rapid growing young or ageing population.

A further analysis is to understand sectoral employment and productivity intensity in relation to aggregate intensity, and we can, therefore, rewrite equation (2) as follows:

$$\frac{\Delta y}{y} = \sum_s \bar{\omega}_s + \sum_s \bar{e}_s + \bar{a}$$

Equation (3)

Here, $\bar{\omega}_s$ denotes the amount of growth in output per capita that can be linked to productivity changes in sector s while \bar{e}_s is the amount of growth in output per capita that can be linked to changes in the share of employment of sector s . The productivity term captures growth, changes in the capital/labor ratio, and employment shifts within the sector. Most papers that analyze the sectoral growth pattern profiles aggregate growth in terms of sectoral growth with respect to productivity and employment. We can, therefore, say that Shapley decomposition simply sums growth in each sector multiplied by the average share of the sector in total value added. And this is equal to aggregate growth.

RESULTS

Following the Shapley procedure, Nigeria's growth episode is profiled by: 1) growth according to aggregate productivity, employment, and demographic change; 2) growth according to changes in sectoral productivity, employment shares, and aggregate demographic; and 3) growth profile according to its sectoral pattern.

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TABLE 6-4. Changes in Main Variables (Population, Employment, Output, and Productivity) in Nigeria, 2005–09 and 2010–14

	2005	2009	% change 2005–09	2010	2014	% change 2010–14
GDP (value added) (millions Naira)	37,789,508	50,058,959	32.50	54,612,264	67,152,785	23.0
Total population (million)	140	155	11.3	160	179	11.80
Total working-age population (million)	75	83	10.5	85	94	11.0
Total number employed (million)	50	51	2.30	51	53	4.4
GDP (value added) per capita	270,726	322,169	19.00	341,951	376,170	10.01
Output per worker	762,612	987,175	29.45	1,066,144	1,255,779	17.79
Employment rate	66.1	61.23	-7.37	60.23	56.66	-5.93
Share of working-age population in total population	53.71	53.3	-0.41	53.25	52.87	-0.38

Source: Authors' calculations based on JoCGs Decomposition tool.

Main Variables

Nigeria recorded a growth rate of 19 percent in per capita value added, for the 2005–09 period. However, there was a significant decrease between 2010 and 2014, to 10.01 percent. The growth in period one (2005–09) and two (2010–14) was accompanied by a 7.37 percent and 5.93 percent reduction in employment, and an increase in labor productivity by 29.5 percent and 17.8 percent in the two periods, respectively. The result indicates the phenomenon of jobless growth in Nigeria. In both cases, there was a reduction in the share of the employed in the total population of working-age, although now decreasing at a decreasing rate.

Decomposition of Growth Per Capita

The decomposition of aggregate per capita GDP growth into its main components using the Shapley decomposition for the two periods is presented in table 6-5. The table includes contribution in Naira value of 2010 to absolute observed growth in per capita GDP as well as the percentage contribution.

TABLE 6-5. *Decomposition of Growth in Per Capita Value Added in Nigeria, 2005–09 and 2010–14*

	2005–09		2010–14	
	2010 Naira	% total change in per capita value added growth	2010 naira	% total change in per capita value added growth
Total change in per capita GDP (value added)	51,443.48	100.00	34,219.55	100.00
Change linked to output per worker	76,495.76	148.70	58,809.93	171.86
Change linked to employment rate	-22,798.11	-44.32	-22,005.09	-64.31
Change linked to ratio of working-age population in total population	-2,254.17	-4.38	-2,585.29	-7.56

Source: Authors' calculations based on JoGGs Decomposition tool.

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According to table 6-5 and figures 6-A.1 and 6-A.2 in the appendix, while productivity was a dominant contributor, accounting for 148.7 percent and 171.9 percent of observed growth in the two periods, respectively, growth changes linked to employment were negative. The negative contribution of employment implies that 44.3 percent and 64.3 percent of the change in per capita value added can be linked to a decrease in the employment rate in Nigeria over the 2005–09 and 2010–14 periods, respectively. Thus, growth in Nigeria since 2005 was a jobless growth, a growth not followed by satisfactory job creation. Interestingly, changes in the structure of the population also contributed negatively to observed growth in both periods. It was –7.6 percent between 2010 and 2014 and –4.4 percent between 2005 and 2009. In other words, there were more dependents (minor and elderly) depending on each working-age adult. Given the negative effect on observed growth of high dependency ratio, there may be a need to investigate the increasing population growth in Nigeria. It is, however, important to note that the negative contributions of the employment rate and population structure to the growth in per capita value added were swamped by that of growth in labor productivity over the years.

Employment Generation and Productivity by Economic Activity

Tables 6-6a and 6-6b present the data on employment by sector for 2005–09 and 2010–14. Total employment in Nigeria grew by 4.4 percent between 2010 and 2014, compared to 2.3 percent between 2005 and 2009. Although mining and services sectors registered absolute growths in the number of employed at both periods, only the service sector gained in the share of total employment in 2005–09 and 2010–14, increasing by 3.4 percent and 6 percent, respectively. An increasing marginal shift from the agricultural sector, which usually employs more than 50 percent of the population in both absolute figures and proportion of people working in the sector, can be observed. Agriculture, which is the leading employer in Nigeria, saw its output per worker increase only marginally (figures 6-A.3 and 6-A.4). This increase can, however, be attributed to the movement of persons to better paying

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TABLE 6-6A. Employment by Sectors of Economic Activity in Nigeria (Total Employment), 2005–09 and 2010–14

	Total employment					
	2005	2009	% change	2010	2014	% change
Agriculture	25,938,722	25,241,535	-2.69	25,142,003	23,872,140	-5.05
Manufacturing	4,607,000	3,548,572	-22.97	3,469,912	3,197,316	-7.86
Mining and quarrying, construction, other	2,048,000	2,539,065	23.98	2,610,456	2,878,999	10.29
Services	16,959,000	19,380,145	14.28	20,001,744	23,526,545	17.62
Total	49,552,722	50,709,317	2.33	51,224,115	53,475,000	4.39

Source: Authors' calculations based on JoGCs Decomposition tool

TABLE 6-6B. *Employment by Sectors of Economic Activity in Nigeria (Employment/working-age population), 2005–09 and 2010–14*

	2005	2009	% change	2010	2014	% change
Agriculture	34.6	30.48	-11.92	29.56	25.29	-14.44
Manufacturing	6.15	4.28	-30.28	4.08	3.39	-16.97
Mining and quarrying, construction, other	2.73	3.07	12.22	3.07	3.05	-0.62
Services	22.62	23.4	3.44	23.52	24.93	5.99
Total	66.1	61.23	-7.37	60.23	56.66	-5.93

Source: Authors' calculations based on JoCGs Decomposition tool

jobs. This phenomenon of inter-sectoral mobility, which has seen people leave the agricultural sector, explains a significant level of prolonged low productivity and underemployment in the sector, which, as the highest employing sector, affects the majority of the country's labor force. The widespread trend suggests that a greater problem lies in the quality of jobs created, where a huge percentage of people who cannot afford not to work engage in low productivity and low paying jobs.

Table 6-7 and figures 6-A.5 and 6-A.6 in the appendix are the result of the decomposition from equation (3). Table 6-7 shows how growth in employment (-4.5 percent) and (-3.6 percent) in 2005–09 and 2010–14, respectively, are distributed among economic sectors. Over the two periods to 2014, overall employment in the agricultural and manufacturing sectors fell significantly. However, while the number of people employed in the agricultural sector fell even faster over time, the fall in manufacturing employment slowed relatively from -22.97 percent between 2005 and 2009 to -7.86 percent between 2010 and 2014. Agriculture consistently had the largest negative contribution of 4.12 percent and 4.27 percent to the change in the employment rate in Nigeria over the 2008–09 and 2010–14 periods, respectively. The global financial crises of 2007–08 had varying impacts on Nigeria's employment distribution, while employment in electricity, gas and water, and mining and quarrying declined steadily, the building and

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TABLE 6-7. Contribution of Employment Changes to Overall Change in Employment Rate in Nigeria, 2005–09 and 2010–14

	2005–09		2010–14	
	Contribution to change in total employment rate (percent points)	Percent contribution of the sector to total employment rate growth	Contribution to change in total employment rate (percent points)	Percent contribution of the sector to total employment rate growth
Agriculture	-4.12	84.6	-4.27	119.5
Manufacturing	-1.86	38.2	-0.69	19.4
Mining and quarrying, construction, other	0.33	-6.9	-0.02	0.5
Services	0.78	-16	1.41	-39.4
Total employment rate	-4.87	100	-3.57	100

Source: Authors' Computation based on JoGGs Decomposition tool.

construction expanded, as employment of persons in the subsector increased from just 1.3 percent of the total labor force in 2005 to 3.3 percent by 2014.

Sectoral Employment Changes to Growth in Total Per Capita Output

This section investigates each sector's contribution to observed growth and employment performance. Table 6-8 and figures 6-A.7 and 6-A.8 in the appendix present the contributions of employment from various sectors to growth in total per capita output. In the 2005–09 and 2010–14 periods, employment contribution shrank in all sectors except in the services sector, which more than doubled its contribution from 3642.8 Naira in 2005–09 to 8675.1 Naira in 2010–14. Of note is the fact that the contraction of employment in the agriculture sector led to a 76.9 percent reduction in its contribution to total change in per capita output.

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TABLE 6-8. Sectoral Employment Contribution to Per Capita GDP (Value Added), Nigeria 2005–09 and 2010–14

	2005–09		2010–14	
	Contribution to change in per capita GDP (naira)	% of total change in per capita GDP	Contribution to change in per capita GDP (naira)	% of total change in per capita GDP
Agriculture	-19,295.1	-37.5	-26,298.0	-76.9
Manufacturing	-8,708.6	-16.9	-4,264.7	-12.5
Mining and quarrying, construction, other	1562.7	3.0	-117.5	-0.3
Services	3,642.8	7.1	8,675.1	25.4
Total contribution	-22,798.1	-44.3	-22,005.1	-64.3

Source: Authors' calculations based on JoGGs Decomposition tool.

Note: Monetary values are 2010 naira.

Understanding the Role of Inter-Sectoral Shifts

Structural shifts or changes are the movements of labor from low productivity sectors to high productivity sectors, and they have an important role in explaining the country's growth pattern. While an increase in the share of employment in sectors with above average productivity is expected to increase overall productivity and contribute positively to the inter-sectoral shift effect, the opposite effect occurs with labor movement out of above-average productivity sectors.

In other words, if sector i experiences productivity below the average productivity level (that is, a low productivity sector), and employment shares s_i decrease, it is expected that the sector's contribution will be positive, implying that the outflow from this low productivity sector has contributed to the increase in output per worker. However, if the same sector experiences an increase in s_i , then the inflow into this low productivity sector will decrease output per worker and, thus, have a negative effect on the inter-sectoral shift term.

Table 6-9 presents the inter-sectoral shift effect. The inter-sectoral shift captures the movement of labor between sectors, implying that, on average, labor moved from lower productivity sectors to higher pro-

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TABLE 6-9. *Decomposition of Output Per Worker within Sector Changes in Output Per Worker and Inter-Sectoral Shifts in Nigeria, 2005–09 and 2010–14*

	2005–09		2010–14	
	<i>Contribution to change in total output per worker (naira)</i>	<i>Contribution to change in total output per worker (%)</i>	<i>Contribution to change in total output per worker (naira)</i>	<i>Contribution to change in total output per worker (%)</i>
Agriculture	62,049.3	27.6	58,706.1	31.0
Manufacturing	34,588.8	15.4	67,542.6	35.6
Mining and quarrying, construction, other	-64,726.9	-28.8	-22,642.9	-11.9
Services	137,366.1	61.2	42,451.9	22.4
Inter-sectoral shift	55,285.4	24.6	43,577.9	23.0
Total change in output per worker	224,562.6	100.0	189,635.4	100.0

Source: Authors' calculations based on JoGGs Decomposition tool.

Note: Monetary values are 2010 naira.

ductivity sectors. The inter-sectoral shift effect on output per worker was 55,285.4 Naira in the 2005–09 period. However, the effect reduced marginally within the 2010–14 period, to 43,577.9 Naira.

Tables 6-10a and 6-10b and figure 6-5 present a summary of the growth decomposition profile of Nigeria in percentage contribution and in Naira 2010, respectively. The demographic component accounted for a 4.4 percent negative contribution in the 2005–09 period, and a 7.6 percent negative contribution between 2010 and 2014. Also, the total value added per capita decreased from 51,443.48 Naira in 2005–09 to 34,219.55 Naira in 2010–14 (tables 6-10a and 6-10b). The table reveals that the services sector played the biggest role from 2005–09 to within-sector changes in output per worker and also highest contribution to employment changes (figure 6-5). Nigeria's growth is, thus, mostly explained by inter-sectoral shifts.

In summary, Nigeria's real GDP growth of 7 percent in the last decade was largely driven by the services sector, which experienced a

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TABLE 6-10A. Growth Decomposition: Contribution to Total Growth in GDP (Value Added) Per Capita in Nigeria, 2005–09

Sectoral contributions	2005–09			
	Within sector changes in output per worker**	Changes in employment	Inter-sectoral shifts	Total
Agriculture	21,136.66	-19,295.08	3,912.63	5,754.21
Manufacturing	11,782.43	-8,708.56	1,172.02	4,245.89
Mining and quarrying, construction, other	-22,048.78	1,562.70	10,906.87	-9,579.22
Services	46,792.85	3,642.83	2,841.08	53,276.76
Subtotals	57,663.17	-22,798.11	18,832.59	5,3697.64
Demographic component	...	...	...	-2,254.17
Total change in value added per capita	...	...	...	51,443.48

Source: Authors' calculations based on JoGGs Decomposition tool.

** Monetary values are 2010 naira.

... = not applicable.

TABLE 6-10B. Growth Decomposition: Contribution to Total Growth in GDP (Value Added) Per Capita in Nigeria, 2010–14

Sectoral contributions	2010–14			
	Within sector changes in output per worker**	Changes in employment	Inter-sectoral shifts	Total
Agriculture	18,205.98	-26,298.02	7,978.04	-14.00
Manufacturing	20,946.37	-4,264.71	-986.04	15,695.62
Mining and quarrying, construction, other	-7,022.05	-117.46	2273.76	-4,865.75
Services	13,165.22	8,675.09	4,248.65	26,088.96
Subtotals	45,295.52	-22,005.09	13,514.41	36,804.84
Demographic component	...	...	...	-2,585.29
Total change in value added per capita	...	...	...	34,219.55

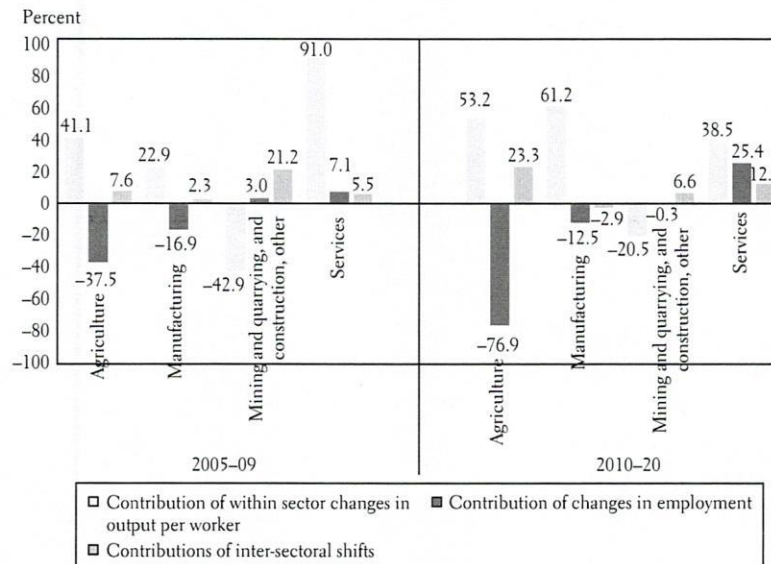
Source: Authors' calculations based on JoGGs Decomposition tool.

** Monetary values are 2010 naira.

... = not applicable.

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FIGURE 6-5. Growth Decomposition: Contributions Made to per Capita Income, by Sector, 2005–09 and 2010–14



significant increase in the total number of workers employed in the sector from 34 percent in 2000 to 44 percent in 2014 (an additional 9 million workers).

While 6.6 million workers moved into tertiary activities between 2005 and 2010, over 2 million workers left farming activities and around 1.4 million workers were disengaged from the manufacturing sector. Although the growth in services-led jobs cushioned the prevailing high labor redundancy, it was unable to offset the unemployment trend, which fell only marginally from 7.37 percent during the 2005–09 period to 5.93 percent between 2010 and 2014. Ironically, labor productivity also declined, from 7.37 percent to 5.93 percent over the two periods.

Growth in the country’s working-age population from 75 million in 2005 to about 95 million in 2014, nearly half of its total population, contributed negatively to employment and slowed labor mobility. At the micro-level, this contributed to underemployment as additional workers became less able to find better paying jobs and improve their living situations. At the aggregate level, the phenomenon limited the

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country's capacity to quickly adapt to technological changes and exploit its competitive advantage for industries to develop.

EMPLOYMENT ELASTICITY OF GROWTH IN NIGERIA, 1981–2014

A widely used indicator for analyzing the relationship between growth and employment is the employment elasticity of growth, which gained popularity following the seminal work of Okun (1962). Despite the widespread use of this concept, especially in tracking sectoral potential for generating employment, it has some notable shortcomings (see Hull 2009). First, it is incapable of stating the actual extent of job creation. For instance, a country that grew by 1 percent and enjoyed a 1 percent increase in employment would have the same employment elasticity rate as a country that had a 5 percent growth rate accompanied by a 5 percent increase in employment. Second, the measure does not take demographic changes into account. Third, and most obvious, the employment elasticity of growth is incapable of indicating the quality of new jobs created. In spite of these criticisms, employment elasticity of growth is a convenient tool for summarizing the employment intensity of growth or sensitivity of employment to output growth (Islam and Nazara 2000).

Two major approaches have been used in the literature to estimate employment elasticity of output. The first is the simple arithmetic method of computing the arc elasticity by dividing the proportionate change in employment by the proportionate change in output during a given period, usually a year. While this methodology is computationally easy, Islam and others (2010) demonstrated that it tends to exhibit a great deal of instability and may, therefore, be inappropriate for comparative purposes. The base year or the terminal year may, for example, be abnormal, so that the elasticity obtained may not reflect the "normal" technological relationship between labor and output for a given sector (Ajilore and Yinusa, 2011).

The second method involves applying the econometric method of regression analysis, and there are different variants of this. This is the approach adopted in this study. We compute a log linear regression equation between employment and GDP to generate both aggregate as

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TABLE 6-11. *Employment Elasticities of Growth in Nigeria*

<i>Sector</i>	<i>Estimated elasticity</i>
Overall	0.115240***
Agriculture	0.4810***
Manufacturing	0.3030
Services	0.8531***

Source: Authors' computation.

*** represents the significance at 1 percent.

well as sector-specific employment elasticities for Nigeria using annual data between 1981 and 2014. The results, presented in table 6-11, indicate that the elasticity of employment with respect to economic growth has been generally low except for services. The aggregate employment elasticity estimates for Nigeria is estimated at 0.11, which implies that with every 1 percent growth in GDP, employment increases by just eleven basis points. The implication is that the relative high growth has not led to an appreciable increase in employment.

The results from the sectoral analysis indicate that agriculture has elasticity of 0.48, while the services sector has generally been employment-intensive at 0.85. Manufacturing employment elasticity is 0.30 and insignificant. This is the sector that should constitute a repository of more productive, remunerative, and, hence, decent jobs. Consistent with the earlier results, the findings confirmed the low labor absorptive capacity of the Nigerian economy at the aggregate and at sectoral levels, especially manufacturing, supporting the notion that growth performance in Nigeria is, after all, a “jobless” one.

UNLEASHING ITS POTENTIAL

Although a number of factors have also naturally positioned Nigeria to be among the topmost economies, half a century following independence, however, Nigeria's economic growth has not only been disappointing until recently, but highly cyclical, sporadic, and non-inclusive (Ajakaiye and others 2014). From the aforementioned analysis, we can observe the influence of changes in the structure of the population on

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growth and the labor market as well as the movement to the low-productivity service sector. However, with the high level of human and natural resource endowments, Nigeria is yet to unleash her potential. Nigeria is Africa's most populous country, with about 170 million people in 2013, and the sixth most populous nation in the world. The current demographic structure of the country exhibits a growing youthful population with an estimated median age of 17.9 years (17.3 for males and 18.4 for females), as well as the fact that 42 percent of the population are younger than fourteen years, 29 percent are age 15–19 years, and 24 percent are in the age range of 30–59 years (National Population Commission (NPC) [Nigeria] and ICF International 2014).

Demographic Dividend

The observed demographic structure implies that Nigeria is on the verge of a major demographic transition in which the ratio of youth to other age groups is increasing (Bloom and others 2010). Total fertility, which is estimated to have fallen to 5.73 in 2015, is projected to slide further, to 5.10, by 2030. Hence, the working-age population, which is estimated at 52.9 percent in 2015, is expected to expand further, to 55.1 percent, by 2030, as the under-fifteen population contracts. This growth would mean that the working-age population (WAP) will grow from 97 million in 2015 to 151 million in 2030, representing almost 16 percent of Africa's labor force. This youth bulge is expected to stimulate growth and development, otherwise known as demographic dividend. Recent developments among the East Asian Tiger economies, such as Hong Kong, South Korea, and Singapore, suggest that a demographic dividend is possible for Nigeria (WEF 2014). The expansion in the number of people in the workforce relative to the number of dependents should provide a significant boost in economic productivity, not only in the production of manufactured goods, services, or agricultural produce, but also in the wake of an increasing purchasing power that fuels economic growth and development.

An empirical study carried out by Bloom and others (2010) estimated that not only will Nigeria's economy be three times larger than today in 2030, with GDP per capita increasing by more than 29 percent, but the country also has the capacity to lift about 31.8 million people out of

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poverty if it can overcome its challenges to collect its demographic dividend. In other words, if productively employed, the extra adults create a window of opportunity for significant inclusive economic growth in Nigeria. However, these dividends are not automatic (Olaniyan and others 2012). To reap this demographic dividend, the country needs concrete policy actions targeted toward the creation of productive jobs for youths. Increased investment in education is necessary given that the country's adult literacy rate is only 56.9 percent with huge variations between sex (male 65.1 percent and female 48.6 percent), regions, and states (NBS 2010b). Furthermore, there is a need for increased health investment in gender equality to improve women's opportunities and choices and achieve inclusive and sustained economic prosperity for all.

Apart from the population, Nigeria is endowed with highly educated individuals who mostly are in the diaspora, even though the country is increasingly experiencing a shortage of professionals due to human capital flight. In 2007, the emigration rate of Nigerians with tertiary education was estimated to be 36 percent, while, for physicians and nurses, the rates were about 13.6 percent and 11.7 percent, respectively (Ratha and others 2007). Long-term economic growth cannot be achieved in the absence of people with professional technical expertise and investment in the real sectors (agriculture and industry) (Mba and Ekeopara 2012). If the external human capital is harnessed alongside the internal capital, the growth trajectory is not only likely to be high but also inclusive.

CHALLENGES OF JOBLESS GROWTH IN NIGERIA

Our results show that the Nigerian economy is characterized by positive GDP growth, but it is a jobless one and this is due to a number of challenges.⁷

Challenge of Low Industrial Base

Industry is crucial to sustaining Nigeria's economic growth. This is why economic development policies (with each having a bearing on the industrial sector) were adopted ranging from the Import Substitution Strategy (ISS) through indigenization to the Structural Adjustment

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Program (SAP). The country's recent growth rate is masking serious underlying deficiencies that must be addressed if there is to be any meaningful long-term transformation, a structural deficit that illustrates a reliance on primary production due to the absence of industrial capacity. Bringing this problem to an end would partly require focusing on efforts that will transform the largely agricultural economy into value added activities (Arrey 2013). Nigeria also cannot continue to depend on oil as the major source of its foreign exchange and revenue earnings. The recent crash in the price of oil and its effect on the economy further lends credence to this necessity.

Challenge of Infrastructural Deficits

Infrastructural services such as transport, water and sanitation, power, telecommunications, and irrigation have been critical in the structural transformation of advanced economies. They represent a large portfolio of expenditure in these economies, ranging from one-third to one-half of public investments. Besides proving that infrastructure capital has a significant positive effect on economic output and growth (Kessides, 1993), studies have shown that where infrastructure appears to lead economic growth, the impact becomes relatively long-term. These structural impacts are further explicated through the effect on the quality of life of citizens, as well as the influence on the marginal productivity of labor and capital for both public and private investments. The current level of infrastructure deficit in Nigeria has been identified by Sanusi (2012) as the major setback to Nigeria's Vision 20:2020 of becoming one of the twenty largest economies in 2020. The absence of infrastructural services has hindered urbanization and the demographic dividends of the country's working population boom.

Challenge of Poor Governance and Weak Institutions

Governance is one of the key factors that explain the divergence in performance across developing countries (Khan 2007). This especially defines the level of inclusiveness that policies bring, as they are formulated and implemented by institutions. The role of the government

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does not depend solely on its involvement in the economic transformation process but, more important, on how it is able to govern development with a decisive ideological orientation and effective institutions and policies underpinned by adequate bureaucratic and organizational capacity and political will (Nkurayija 2011). Good governance, therefore, promotes democracy, human capital formation, and efficiency in the economy. Besides the weakness in the poor intermediation of production factors is the issue of the high cost of governance and administrative structures associated with the running of government. According to Warimeh (2007), the misuse of public funds is another cause of the increasing high cost of governance in Nigeria. This political economy eventually creates room for corruption and passiveness, thereby weakening government plans and policies for economic growth. For instance, Nigeria's rank in government effectiveness fell from its highest level in 2000 of 30.29 to 27.49 in 2013.

Challenge of Insecurity

Nigeria, in recent times, has witnessed an unprecedented level of insecurity. The phenomenon has found greater expression following the emergence of Boko Haram since 2011, which led to humanitarian crises particularly in the northeastern parts of the country (Jerome 2015). According to Nigeria's National Emergency Management Agency (NEMA), at least 470,500 people were displaced in 2013 alone by such violence, and there is very little information about their protection and assistance needs. The country ranked 151 out of 162 in the 2014 Global Peace Index for major factors such as society and security, as well as domestic and international conflict, with a national cost of violence estimated at US\$28.5 billion.⁸ These are also the associated effects of insecurity, including fear, coercion, loss of relatives, properties, and livelihoods, displacement, breakdown of production channels, and deprivation of basic needs, which worsen the already high level of poverty. Violence and insecurity have a global impact as they erode a country's human and social capital, reduce life expectancy at birth, destroy its productive and financial capital, and can threaten macroeconomic stability (Soares 2006; Geneva Declaration 2008). Security expenditures

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have the effect of eroding savings and investments in the broader economy, as well as labor productivity at the individual level. The World Development Report 2011 found that “a country that experienced major violence over the period from 1981 to 2005 had a poverty rate 21 percentage points higher than a country that saw no violence” and for every three years a country is affected by major violence, poverty reduction lags behind by 2.7 percent (World Bank 2011).

CONCLUSIONS AND PROPOSED REMEDIAL ACTIONS

Over the last decade, Nigeria has experienced a steady and unprecedented wave of growth, which came with unique structural changes in sectoral employment. Characteristics of this growth process in the light of findings of this study hold an important development policy interpretation, with the need for the reallocation of people to better-quality jobs to address unemployment, underemployment, and poverty. Nigeria will need to galvanize its policy space not only to stimulate job creation and productivity within sectors, but also to ensure sector growths that encourage labor shifts from low- to high-productivity sectors. Findings show that Nigeria’s highest productivity sector is the manufacturing sector, which has lagged behind in terms of contributions to output and employment elasticity of output.

Although several factors have contributed to growth in Nigeria, foremost, growth has been driven by sectoral variations in terms of employment, sectoral development, and value added, but there is no significant structural change on the employment front. Even though the share of agriculture in total GDP has reduced, it is still the sector that employs the highest number of people, despite its low productivity and subsistence features.

Proposed Remedial Actions

Our results show that Nigeria has been experiencing jobless growth over the past decade and a half. The observed structural changes do not seem to be growth enhancing and seem to lack an employment generation capability. Thus, this type of growth is not inclusive.

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Given the need for people to move out of less rewarding sectors (especially agriculture and rudimentary, informal services sectors) and the ongoing high rate of urbanization, underemployment has become entrenched rather than just a passing phenomenon. In the circumstances, unemployment has continued to increase, while underemployment has resurfaced as a bedeviling challenge facing the country's large youthful labor force.

To remedy the situation, Nigeria first needs to create more decent jobs. The World Bank has estimated that the Nigerian economy needs to create between 40 and 50 million jobs between 2010 and 2030 as a result of the continued high fertility rate, which is set to rapidly increase the working-age population by some 66 million people between 2010 and 2030, compared to an increase of 35 million people between 1990 and 2030 (World Bank 2016). These numbers roughly translate into over 2 million additional jobs per year, which will be mostly taken up by new entrants to the labor market. Emphasis should be on productive jobs that work well for development, as encapsulated in the World Development Report on Jobs (World Bank 2012). This could be sourced by: 1) promoting higher agricultural productivity, especially in smallholder farming; 2) spatially balanced investments that provide opportunities in the currently disadvantaged northern regions; and 3) bringing more girls into education and productive employment, which would contribute to higher family earnings, enhance family planning, and improve nutrition for children. For the foreseeable future, agriculture and small nonfarm household enterprises will continue to account for the bulk of new jobs. Nigeria must consider how to increase productivity in agriculture and non-farm enterprises and devise avenues of attracting youths into the sector. There should also be resolute commitment to raising productivity in the agricultural sector through sustained massive support for agricultural research and extension (as has been done in Brazil, China, India, and Malaysia), mechanization, commercialization of technologies, and enhanced value addition through effective support for agro-processors and agri-businesses.

Nigeria needs to invest more in building a skilled workforce through diverse measures, such as improving the quality of basic education; the removal of barriers to good-quality education; making education more

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relevant to the labor market through better links between schooling and job needs as well as strengthening the employability of graduate; and emphasis on vocational education. These investments would help increase the productivity of Nigeria's workforce. While Nigeria is already the sixth largest receiver of remittances in the world, with a tangible \$20.8 billion recorded in 2015 according to the World Bank Group (2016) Migration and Remittances Factbook 2016, the diaspora could participate more in Nigeria's development by bringing much needed skills. The Nigeria Investment Promotion Commission estimated that each year, some 2,000 Nigerians who have been trained outside the country return home to seek employment or business opportunities. Such "diaspora-tapping" also provides the rationale for the TOKTEN (Transfer of Knowledge through Expatriate Networks) program of the United Nations Development Programme. These programs need to be either formalized or scaled up.

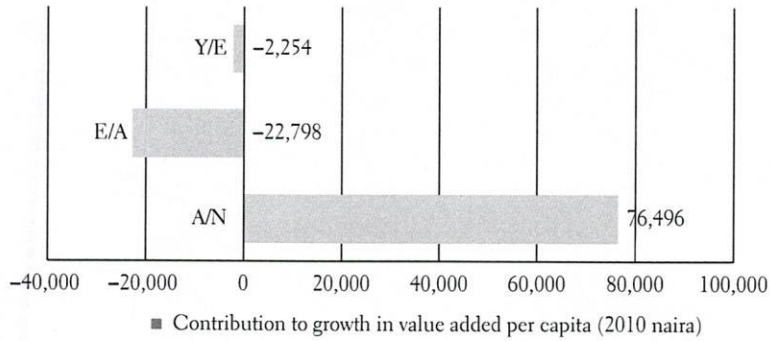
Special attention should be paid to the development and technological upgrade of the manufacturing sector in general and labor-intensive components in particular. In addition, effective programs for the modernization of the service sector, especially the distributive trade subsector characterized by informality and low productivity, should be articulated, effectively implemented, regularly monitored, and their impacts carefully evaluated to provide a basis for evidence-based pragmatic and proactive modifications as may be necessary. For Nigeria to benefit from its demographic dividend, developing the entrepreneurial potential of its youth population is an important opportunity for growth. Specific labor-market interventions, including federal and state-level youth skill-building institutions—for example, post-secondary trade schools, post-tertiary education skill building institutions (as in Canada), and innovative public works programs—should be targeted toward the high number of poor and vulnerable people.

Finally, an enabling business environment needs to be created by tackling the obstacles to doing business, such as electricity, poor infrastructure, and corruption. Federal, state, and local governments should focus on improving regulatory environments, infrastructure, and developing human capital as essentials for inclusive growth.

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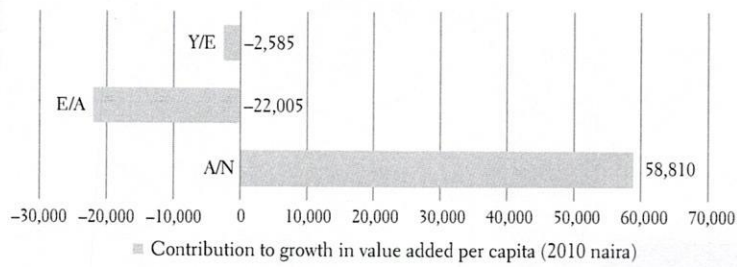
APPENDIX

FIGURE 6-A1. Aggregate Employment, Productivity, and Demographic Profile of Growth in Nigeria, 2005–09



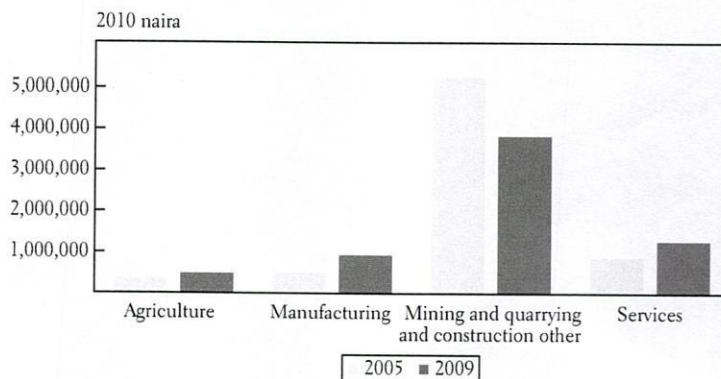
Note: Y/E=Output per worker; E/A=Employment rate and A/N=Demographic change

FIGURE 6-A2. Aggregate Employment, Productivity, and Demographic Profile of Growth in Nigeria, 2010–14



Note: Y/E=Output per worker; E/A=Employment rate and A/N=Demographic change

FIGURE 6.A3. Output per Worker by Sectors, 2005–09



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FIGURE 6.A4. *Output per Worker by Sectors, 2010–14*

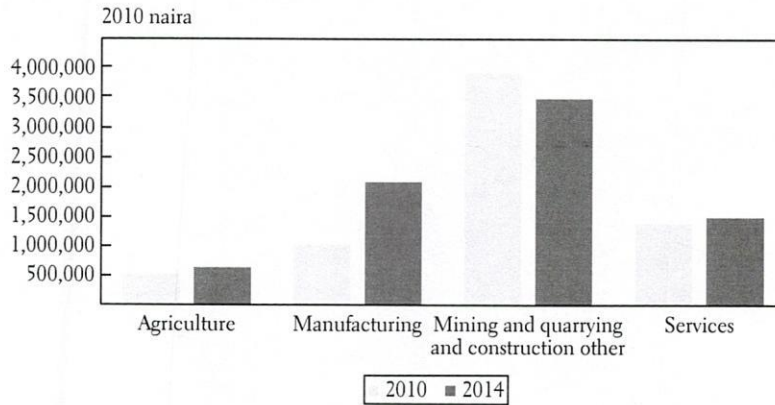


FIGURE 6.A5. *Contribution of Each Sector to Change in Employment-to-Population Ratio, 2005–09*

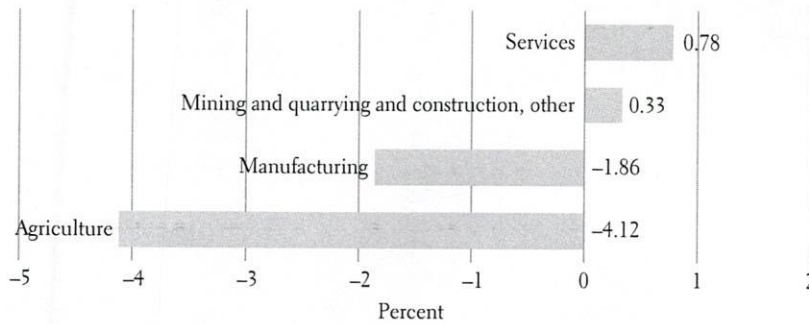
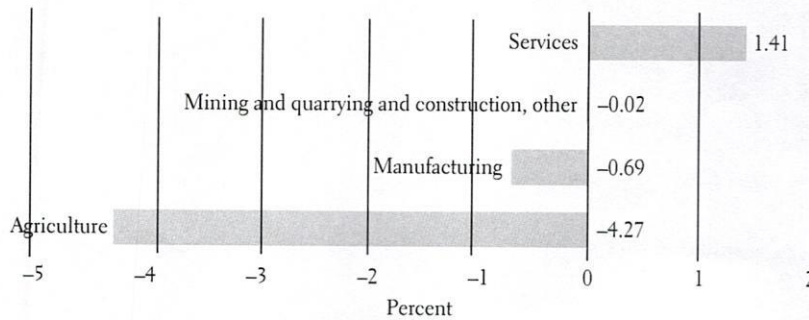


FIGURE 6.A6. *Contribution of Each Sector to Change in Employment-to-Population Ratio, 2010–14*



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FIGURE 6-A7. Contribution of Change in Employment-to-Population Ratio to Change in GDP (value added) per Capita, by Sector, Nigeria 2005–09

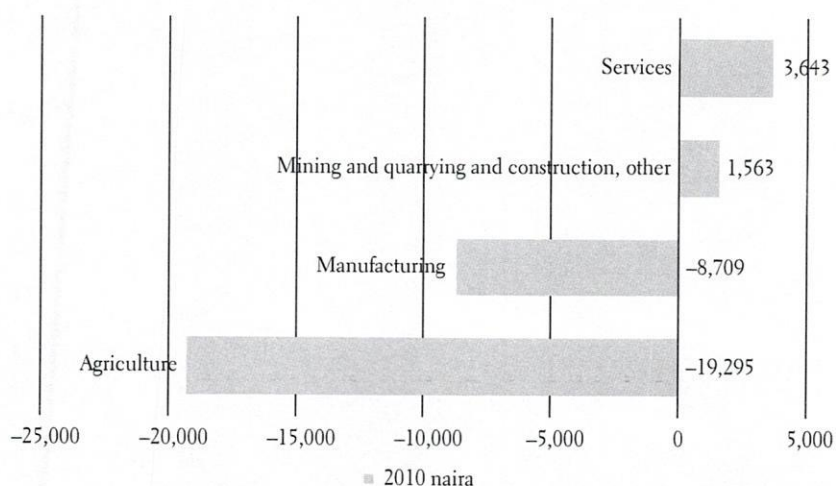
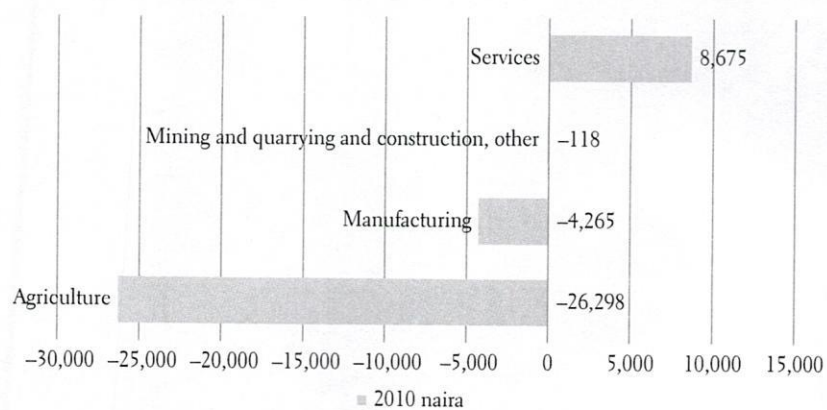


FIGURE 6-A8. Contribution of Change in Employment-to-Population Ratio to Change in GDP (value added) per Capita, by Sector, Nigeria 2010–14



NOTES

1. Including Brazil, Cambodia, Chile, Ethiopia, India, Indonesia, Mauritius, Mongolia, South Africa, Sri Lanka, Thailand, Uganda, and Vietnam
2. Employment and unemployment data are compiled by NISER from the erstwhile National Development Plan, 1980–84, the National Rolling Plans (1990–2003), NBS Statistical Fact Sheets, the database of the National Manpower Board, 1970–2005, and other publications.

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3. The methodology followed the World Bank job generation and growth decomposition tool process. Detailed methodology is available in the tool's appendix.

4. Employment rate is defined by ILO measure as the population that "participates" in the labor market, and participation is defined as all those looking for jobs or already employed. But in developing countries, the definition of participation is very blurry because employment may be low due to agents that are seasonally unemployed. We, therefore, believe that, in the case of developing countries, a better measure of the labor force is the working-age population rather than those actively participating in the labor market.

5. Components can remain constant by treating them in various ways: by leaving them in the level observed in the initial year, or the start at the final year, or one of them can stay in the level observed in the initial year and the other start at the level observed in the final year. Choice of treatment depends on decomposition approaches but, as mentioned, the Shapley decomposition approach uses a weighted average of each possible alternative and, therefore, eliminates residuals.

6. Output per worker in this paper may be referred to as productivity under the assumption that it encompasses all three influences.

7. It should be noted that the challenges are inexhaustible and only a few selected ones are discussed in this study.

8. See www.visionofhumanity.org/#page/indexes/global-peace-index/2014/NGA/OVER.

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