

TRADE & COMPETITIVENESS PRACTICE



**AN ASSESSMENT OF THE INVESTMENT CLIMATE IN NIGERIA**

**The Challenges of Nigeria's Private Sector**

GTC07

AFRICA

WORLD BANK REPORT NO: ACS15736

AUGUST 2016

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## Abbreviations and Acronyms

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BMGF	Bill and Melinda Gates Foundation
CAC	Corporate Affairs Commission
CBN	Central Bank of Nigeria
CPI	Consumer Price Index
DB	Doing Business
DFID	Department of International Development
ECA	Excess Crude Account
FCT	Federal Capital Territory
FMA&RD	Federal Ministry of Agriculture and Rural Development
GDP	Gross Domestic Product
GHS	General Household Survey
GON	Government of Nigeria
HH	Household
HHI	Herfindahl-Hirschman Index
ICA	Investment Climate Assessment
IMF	International Monetary Fund
IP	Intellectual Property
LSMS	Living Standard Measurement Study
MFI	Micro Finance Institution
MSME	Micro, Small and Medium Enterprises
NBS	National Bureau of Statistics
NECO	National Examinations Council
NFRA	National Food Reserve Agency
NFE	Non-Farm Enterprises
PIB	Petroleum Industry Bill
R&D	Research and Development
SD	Standard Deviation
SME	Small and Medium Enterprises
SMEDAN	Small Enterprise Development Agency Nigeria
TFP	Total Factor Productivity

## Acknowledgements

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This report was prepared by a World Bank team led by Johanne Buba, under the overall guidance of John Speakman, practice manager; Marie Françoise Marie-Nelly, Nigeria country director; and Indira Konjhodvic, Nigeria country program coordinator. In alphabetical order, the coauthors are Johanne Buba, Xavier Cirera (chapter 5 on the impact of firm-level innovation on productivity), George Clarke (chapter 4 on the productivity of the formal sector), and Michael Wong. Other contributors include Moustapha Doukoure, Irene Nnomo Ayinda-Mah, and John Litwack. The team would like to acknowledge the collaboration with Elliot Rasmuson, Keith Garrett, Eleonora Bertoni, Paul Corral, and Vasco Molini.

The team would like to thank the Enterprise Survey unit and, in particular, Joshua Seth Wimpey (DECEA) and Jorge Luis Rodriguez Meza (DECEA) for conducting the Enterprise Survey in Nigeria. The team would also like to acknowledge the invaluable participation of DFID in this survey.

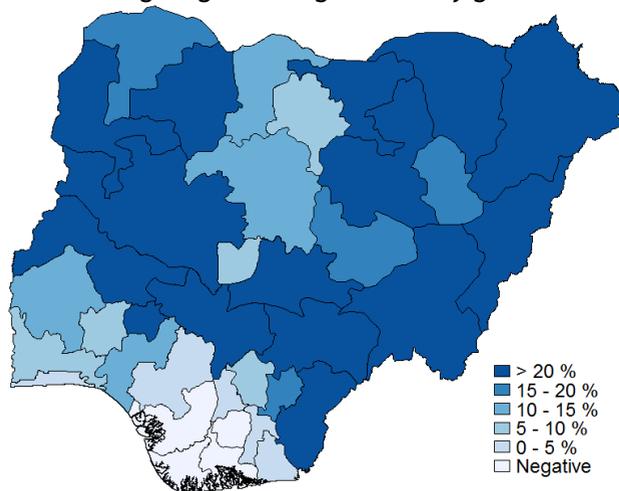
## Executive Summary

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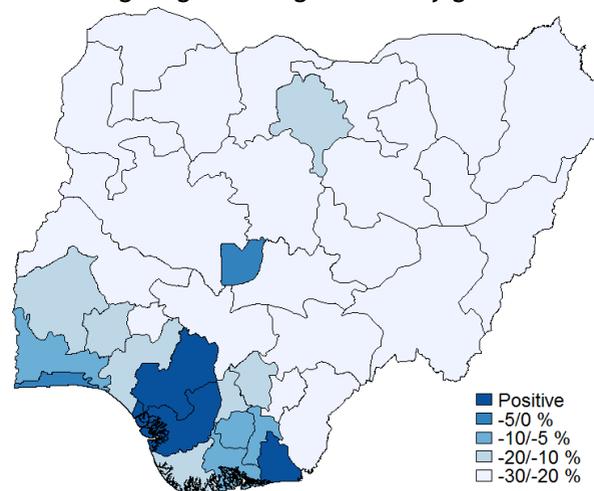
**The Nigerian economy has experienced significant economic growth over the last decade.** According to the latest national statistics, GDP growth averaged 5.3 percent from 2011 to 2014, and in 2014, when GDP grew at 6.2 percent, most of the growth was attributed to manufacturing, construction, trade, and service sectors. However, the economy remains highly exposed to fluctuations in the international oil market. Oil prices in international markets have fallen from approximately US\$115 per barrel in June 2014 to approximately US\$40 per barrel today.<sup>1</sup> The impacts on the macro economy can already be observed.<sup>2</sup> There is an urgency to diversify the Nigerian economy.

**Economic opportunities seem to vary widely across the country.** Economic activity in Nigeria is significantly more concentrated in the southern part of the country, with the exception of Kano in the north. Using night lights data as a proxy for economic activity, the data reveal a progressive convergence of the less economically vibrant central and northern regions toward the south during the last decade (map 1). The same data, however, indicate that this trend has slowed in recent years (map 2). As a result, most economic activities are still located in southern Nigeria, with the exception of several growth concentrations in Abuja, Kano, Kaduna, Jos, and Sokoto.

**Map 1: Proxy for Economic Activity Growth, over the Period 2003–2012**  
Average nighttime light intensity growth



**Map 2: Proxy for Economic Activity Growth, over the Period 2009–2012**  
Average nighttime light intensity growth



Source: Authors' calculations based on Defense Meteorological Satellite Program (DMSP) data

Note: Nighttime lights are used as a proxy for economic activity, following the work done by Henderson et al. (2012) and Michalopoulos and Papaioannou (2013). These data are collected by satellite images every night and averaged over the course of the year. Each geographic cell constitutes a pixel of roughly one square kilometer. The intensity of each pixel is reported as a number ranging from zero to sixty-three, where every observation above sixty-three is capped at sixty-three. Intensity for each state is the average intensity of all cells that constitute a state.

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<sup>1</sup> As of March 2016

<sup>2</sup> IMF growth predictions for 2015 have been cut from over 7 percent to 5 percent.

**With a median age of fourteen years old, Nigeria’s population of 180 million people will require an estimated forty million new jobs by 2030 to absorb new labor market entrants.** Nigeria’s population pyramid remains dominated by children and youth, and with 3 percent annual growth of the population, the working-age population in Nigeria is growing disproportionately.<sup>3</sup> While explicit unemployment in Nigeria—by the ILO definition—appears to be well under 10 percent, low-productivity jobs in agriculture and services currently account for the majority of employment. Only nine million out of eighty-seven million working-age adults are indeed wage workers in either the private or the public sector, while the rest of the population works in agriculture or is self-employed. The government, therefore, considers the shortage of productive jobs to be the most important current challenge in the country.

**This report presents employment in Nigeria from a worker perspective as well as from a firm perspective.** Using recent household data, the report complements the report “More, and More Productive, Jobs for Nigeria: a Profile of Work and Workers” (World Bank 2015) and provides an overview of employment opportunities in Nigeria from a labor force perspective. This report also intends to investigate the job agenda from a firm perspective and represents a first attempt to better understand the drivers of economic diversification, firm growth, and employment in Nigeria.

**The report draws on two different data sources: the General Household Survey (GHS) and the Enterprise Survey.** The GHS provides data on the contribution of wage work to the Nigerian economy and its share of total employment. The GHS module on non-farm household enterprise provides information on the dynamics of micro and small enterprises, as well as the constraints they face. The Enterprise Survey, conducted in Nigeria from April 2014 to February 2015, was used to analyze the dynamics and constraints of the formal sector in Nigeria. The survey sample, which was limited to formally established companies with five or more employees, was composed of firms across nineteen states engaged in manufacturing, construction, or retail and wholesale trade. The results are presented in four regional groups: Lagos; Kano and Kaduna states; other southern states (Abia, Abuja, Anambra, Cross River, Enugu, Ogun, and Oyo); and other northern states (Gombe, Jigawa, Katsina, Kebbi, Kwara, Nasarawa, Niger, Sokoto, and Zamfara). A module on innovation was also administered to a portion of the survey sample. Details on the Enterprise Survey are provided in Annex 2.

**Two background papers underpin the analysis presented in this report:** *Firm Performance in Nigeria* (Clarke 2015) looks at firm-level productivity using the Enterprise Survey, and *The Impact of Firm-Level Innovation on Productivity in Nigeria* (Cirera 2015) looks at firm-level innovation and the link with productivity.

## 1. Employment in Nigeria

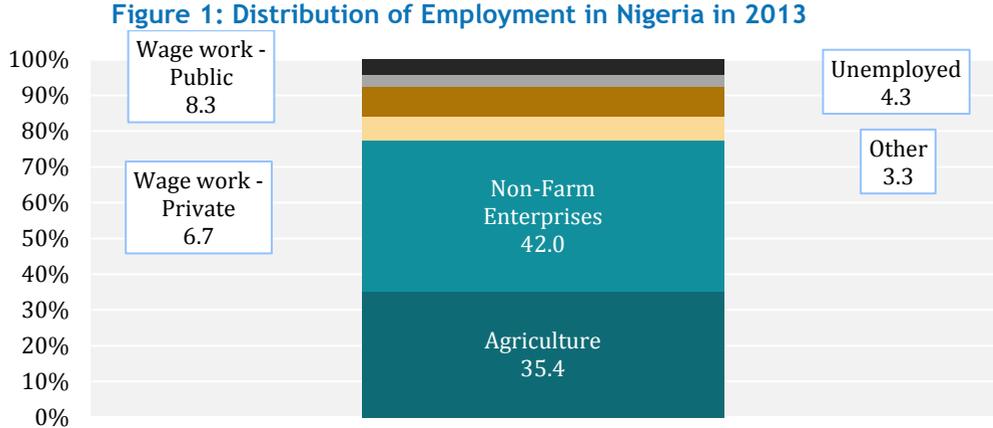
**What constitutes *employment in Nigeria*?** The Nigerian population was estimated at 158 million in 2011. Some eighty-seven million are between fifteen and sixty-four years old and constitute the *working-age population*. Within this group, there is additional distinction between

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<sup>3</sup> World Bank, *More, and More Productive Jobs for Nigeria: a Profile of Work and Workers*, Washington, DC, (2015).

the *inactive population*—those not looking for a job—and the *active population* (also called the *labor force*)—employed or looking for a job. In Nigeria, approximately thirty-three million people make up the inactive population. The remaining fifty-four million people constitute the labor force, of which a very small fraction (about 5.5 percent) is *unemployed*.

**Most people work for themselves.** Analysis of the GHS results suggests that more than 70 percent of the Nigerian labor force is self-employed or in agriculture: approximately 35 percent works in agriculture—self-employed or for private and/or public farms—and more than 40 percent is engaged in a non-farm household enterprise (NFE). Only 15 percent of the labor force is employed in a wage work occupation (as their main occupation). This is strikingly different from labor force distributions observed in lower-middle income countries in East Asia (Indonesia, Philippines, or Vietnam), where wage work typically comprises 30–60 percent of overall employment. A regional analysis demonstrates that the share of wage work in Nigeria’s South South and South West zones is more in line with the East Asian distribution, while in the North East and North West, only 8 percent of the employed labor force works in the wage sector (and primarily in the public sector).



Source: Estimates based on GHS 2012–13

Note: Population-weighted proportion. Questions used: “In your main activity/employment, what is the employer in this job?” combined with “Have you received wages, salary, or other payments either in cash or in other forms from this employment for this work?” and “In what sector is this main activity?”

**Private sector and job creation**

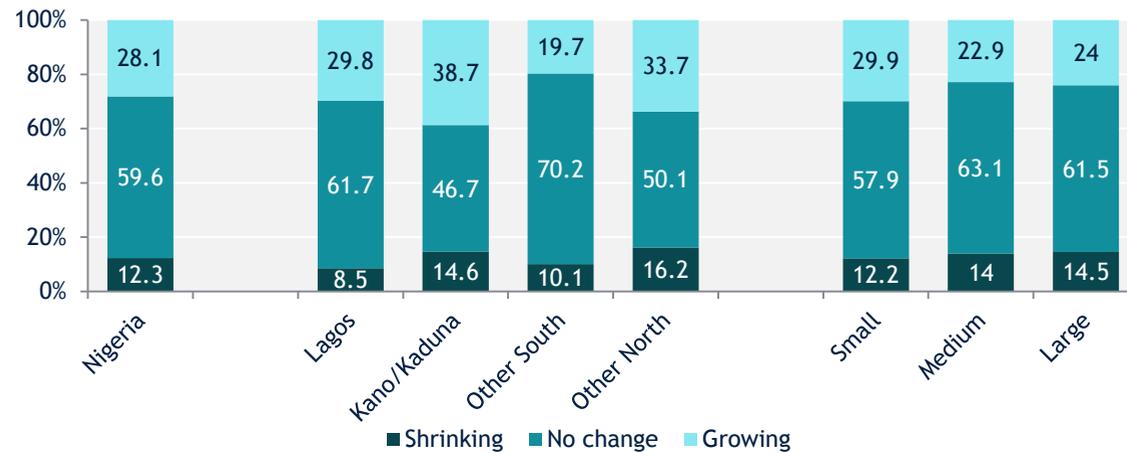
**What is the size of the private sector in Nigeria?** This report defines the private sector as the population of firms that employ individuals through remuneration in the form of a salary, a daily wage, or a per-task payment. This definition is broad, and as a result, includes both formal and informal firms. As shown in figure 1 above, the private sector accounts for a very small—but growing—proportion of employment. While the predominance of public sector employment has been slowly declining across all geopolitical zones in Nigeria, the growth of the private sector varies widely across the country. For example, private sector wage work is a significant contributor in the South South and South West zones (12 percent of labor force), while almost nonexistent in the North East and North West zones (1 percent of labor force).

**Nigeria has approximately thirty-seven million enterprises, of which a significant proportion are characterized as Non-Farm Household Enterprises (NFEs).** Approximately 40 percent of Nigerian enterprises are farm enterprises, while the rest are mainly informal, non-farm enterprises (NFEs). According to the Small Enterprise Development Agency Nigeria (2014), there are approximately sixty-eight thousand small firms (10–49 employees) and forty-seven hundred medium firms (50–200 employees). In 2013, 63 percent of all households were operating an NFE. This rate was particularly high in the South West (74 percent) and North West (67 percent) zones, and with relatively high population densities, these two regions account for more than half the NFEs in the country. Almost all NFEs operate without a registration, and about 50 percent are operated from inside the household. In 2013, the average size of an NFE was 1.5 employees, including the owner.

**A subset of the informal sector, characterized here as a microenterprise (ME), is capable of generating wage jobs.** The prevailing assumption regarding the NFE sector is that 1) informal firms do not generate wage jobs, and 2) support to informal firms would create market distortions and discourage those firms from formalizing. As a result, the NFE sector has long been excluded from the jobs agenda and private sector development projects. This report demonstrates that there is a subset of NFEs in Nigeria that are capable of generating a substantial number of wage workers. Within the NFE sector, we defined two types of non-farm enterprises (NFEs), namely household enterprises (HEs), which are generally operated by a single person, and microenterprises (MEs), defined as NFEs that hire workers who are not members of the household and/or are registered with the Corporate Affairs Commission (CAC). While this distinction is rather arbitrary, these two types of NFEs appear to behave differently, in particular when it comes to job creation. The data demonstrate that while both types experienced an increase in sales between 2010 and 2013, MEs hired more workers and averaged annual growth of 7.5 percent during this period. By comparison, HEs experienced a decline of 5.1 percent in terms of employment growth. In 2013, approximately 12 percent of the NFEs—in other words, four million firms—were microenterprises, and, on average, these firms employed three workers (owner included).

**The formal sector appears to have even greater potential for growth and job creation.** Despite declining sales growth (-5.3 percent annually), employment in the formal sector in Nigeria grew at an average of 6.0 percent per year between 2011 and 2013. The results from the Enterprise Survey (2014), summarized in figure 2 below, indicate that a majority of firms retained their workforce, a significant percentage hired additional workers, and only 12.3 percent of firms downsized their labor force. A third of respondents indeed indicated that they were overstaffed, mainly because they anticipated an upturn in sales.

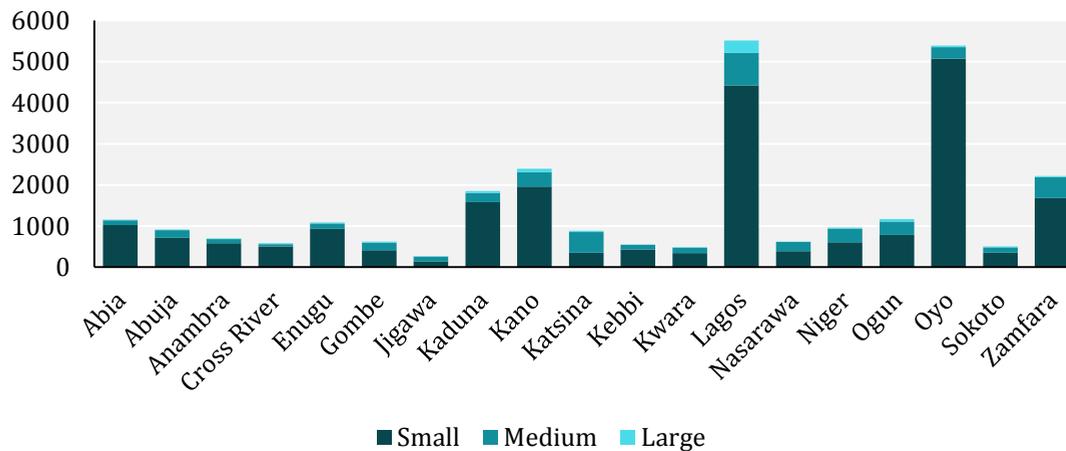
**Figure 2: Percentage of Firms Reporting Shrinking, Unchanged, or Growing Workforce during the Last Financial Year (2014)**



Source: Authors' calculations based on data from Enterprise Survey 2014–15

**However, the contribution of the formal sector to employment is limited by the very small number of firms, particularly in Nigeria's poorest regions.** According to the National Bureau of Statistics and other local registries, there are only approximately twenty-eight thousand formal firms operating across the country. Figure 3 demonstrates that formal firms are primarily concentrated in Lagos and Oyo and to a lesser extent in Kano, Kaduna, and Zamfara.

**Figure 3: Number of Formal Firms in the Nigerian States, 2014**



Source: World Bank universe of formal firms in Nigeria used for the Enterprise Survey (2014) based on NBS dataset and local and municipal registries

## 2. Constraints of the Private Sector

### The informal sector

**This report’s analysis suggests that ME firms have the potential to create jobs; however, additional analysis is needed to better understand the growth drivers within this subset of firms.** Of the firms that were operational in both 2011 and 2013, 54 percent of the MEs in 2013 were operated as HEs in 2011, which suggests that HEs are able to transition to MEs. External shocks play a role in this transition; however, given the large number of firms that remain as HEs, external factors explain only a small fraction. Other factors—such as household background, personality traits of the owner, and other external factors that may also be explanatory—are not captured in the existing dataset and questionnaire. Therefore, it is not yet possible to fully understand what makes HEs transition to MEs.

**This report also investigates the main performance drivers of both HEs and MEs, with a focus on revenues per worker and total factor productivity (TFP).** There are two main findings:

- Female-owned HEs earn far less than male-owned HEs (30 and 40 percent lower for single and married female owners, respectively). However, there is no gender gap in the case of MEs.
- There is a positive return on education. HEs operated by owners with secondary and tertiary education earn 28 and 42 percent more, respectively, than HEs operated by an owner without any education or with primary education only. There is also a positive return on tertiary education for MEs.

### The formal sector

**Nigerian firms face a challenging business environment.** According to the Doing Business Report (2015), Nigeria ranks near the bottom in “ease of doing business” (170 out of 189 countries). This report considers the investment climate to include: (a) *economic incentives*, which are shaped by a set of macroeconomic policies, a regulatory framework, and public administrative procedures; and (b) *incentives embodied in institutional arrangements*, such as the security of property rights, the rule of law, and governance stability. Institutional arrangements influence private investment decisions by structuring the rules of the game as they affect investment uncertainty, risk, and investment safeguards (protection of property rights, enforcement of contracts, and maintenance of integrity of monetary standards).<sup>4</sup> Defined in this manner, the business climate encompasses those attributes that will influence the financial return

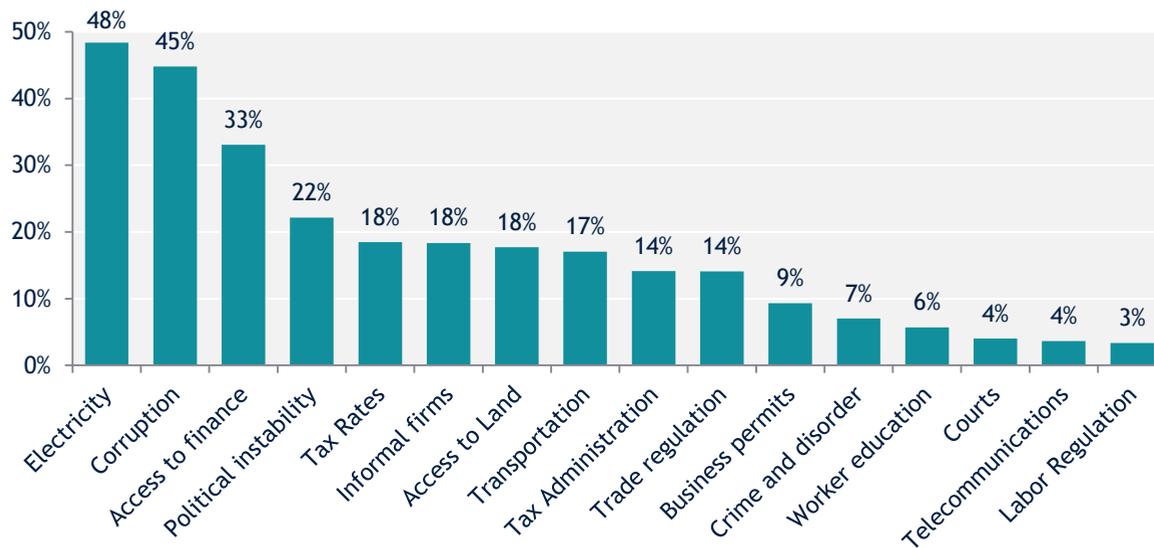
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<sup>4</sup> The term *investment climate*, broadly defined, includes a country’s unique attributes, or “geography” (climate, endowments of natural resources, distance from important markets, and so on), as well as the state of its infrastructure, economic and social policies, institutions, and governance stability. For operational purposes, a narrower definition is used that focuses on the endogenous determinants of investment. For example, Stern (2000a) notes that it is “the policy, institutional, and behavioral environment, present and expected, that influences the returns, and risks, associated with investment.” This definition, in its reduced form, includes economic incentives, which are shaped by macroeconomic and regulatory policies and public administrative procedures and incentives embodied in institutional arrangements such as security of property rights and rule of law and governance stability.

on different economic activities. Hence, a nonconducive business climate likely will discourage the private sector from investing in both human and physical capital, leading to low productivity of both labor and capital. According to the last two Nigeria ICAs (2009 and 2011), the three most important constraints were a lack of access to electricity, finance, and transport.

**In 2014–15, the areas of investment climate that most concerned firm managers were electricity, corruption, and access to finance.** When asked to rate the severity of investment climate constraints, Nigerian managers were most likely to report electricity, corruption, and access to finance as serious obstacles to business performance. Other areas of investment climate, such as political instability, access to land, tax rates and administration, and other regulations were rated as less serious obstacles (figure 4 below). When asked to identify the top three constraints to business performance, the conclusion was similar: access to finance (30 percent of firms), electricity (27 percent), and corruption (13 percent) were the three most reported constraints to doing business. None of the other constraints were listed by more than 6 percent of firms.

**Figure 4: Percentage of Firms Citing a Major Obstacle in the Investment Climate**

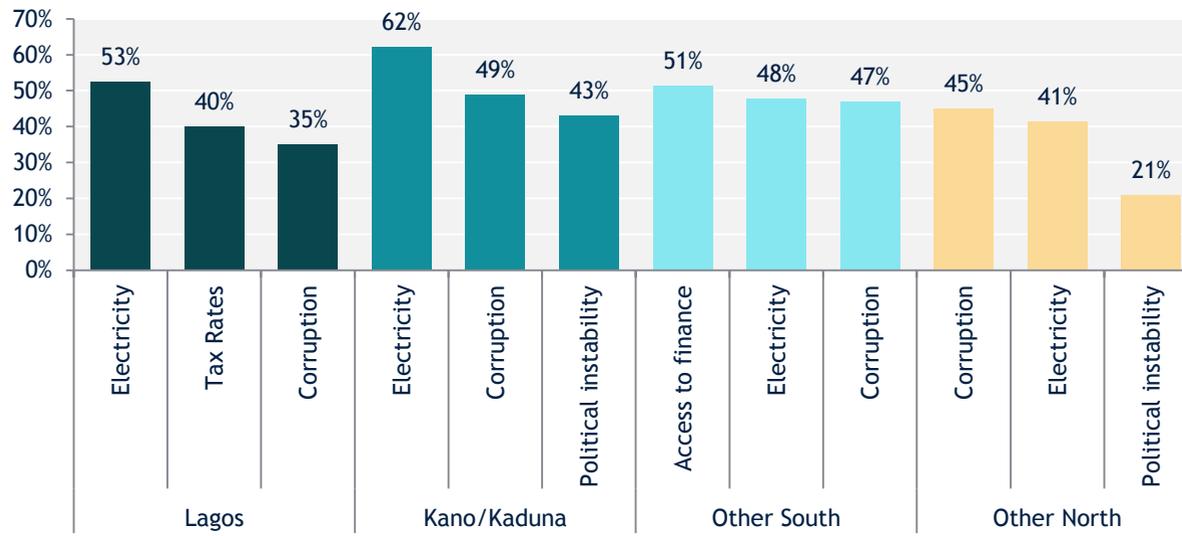


Source: Authors' calculations based on data from Enterprise Survey 2014–15

**Business environment in Nigeria is less conducive than in any other comparator country.** Power outages appear to be a more serious problem in Nigeria than in other countries, resulting in higher losses, a larger proportion of firms with generators, and ultimately higher costs for electricity and fuel. About 24 percent of managers said that bribes are needed to get things done in Nigeria, compared to only about five percent of Chinese managers, ten percent of Brazilian managers, and 15 percent of managers in South Africa. Regarding access to finance, although small firms commonly have worse access than large firms, small firms in Nigeria appear to be particularly disadvantaged in this respect when compared to the comparator countries (except Ethiopia). Comparisons with the other benchmark countries also reveal that tax administration is more of a problem than in comparator countries. Overall, the business environment in Nigeria appears unattractive.

While investment climate obstacles vary somewhat across the country, electricity reliability and corruption are common to all regions. Electricity reliability and corruption consistently rank among the top three reported constraints in all northern and southern states (figure 5 below). There are, however, some differences among provinces. Firms in northern states are more likely to rank political instability among the biggest constraints, whereas in southern regions, firms are more concerned with tax rates and access to finance.

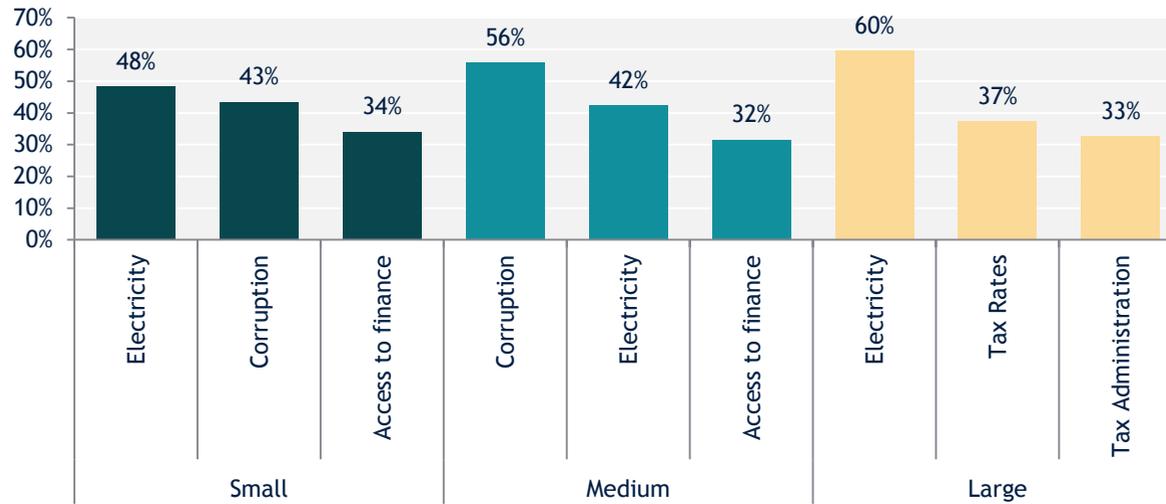
**Figure 5: Percentage of Firms Citing Obstacles in Different Regions**



Source: Authors' calculations based on data from Enterprise Survey 2014–15

**Smaller firms are more concerned by access to finance, while large firms report tax rates and tax administration as serious obstacles.** Figure 6 below demonstrates that access to finance ranks among the top three constraints for formal manufacturing firms of all sizes. However, small and medium firms tend to be more concerned about access to finance than larger firms; while over 30 percent of small and medium firms report access to finance as a major obstacle, only about 8 percent of large firms felt similarly. Indeed, small firms are far less likely than large firms to have access to bank loans. This is also the case in all comparator countries; however, the difference is particularly striking in Nigeria, where only about 26 percent of small and medium firms have bank loans, compared to 55 percent of large firms, a difference of 29 percent. This difference is larger than in any of the comparator countries except Ethiopia, where the difference is 31 percent, which suggests that the banking and trade credit systems in Nigeria work well for large firms but not necessarily for small and medium firms. In contrast, large firms were far more concerned than smaller firms about tax rates and tax administration, with 37 and 33 percent of large firms reporting these constraints to be major obstacles, respectively. Fewer than 20 percent of small firms ranked tax rates and administration as serious obstacles. A possible explanation is that small firms can more easily evade tax requirements than large firms and are therefore less concerned about tax rates and administration.

**Figure 6: Percentage of Small, Medium, and Large Firms Citing Major Obstacles**



Source: Authors' calculations based on data from Enterprise Survey 2014–15

### Focus on the manufacturing sector: competitiveness and business environment

**The manufacturing sector has been in recession in recent years while services are stagnant.** According to the Enterprise Survey, between 2011 and 2014, the average manufacturing firm had sales growth of -5.3 percent. The large decline in sales is not just due to inflation—the average firm reported that sales dropped by 1.3 percent in nominal terms over this period. The largest annual drop in sales between 2011 and 2014 was observed in the chemicals sector (-47 percent), followed by the textile industry (-19 percent), the food and beverage industry (-13 percent) and construction materials (-12 percent). Growth was positive in metals and machinery and paper and publishing. In the service sector, growth was overall positive—although close to stagnant. What has prevented the manufacturing sector from being more performance oriented and growing over the past four years?

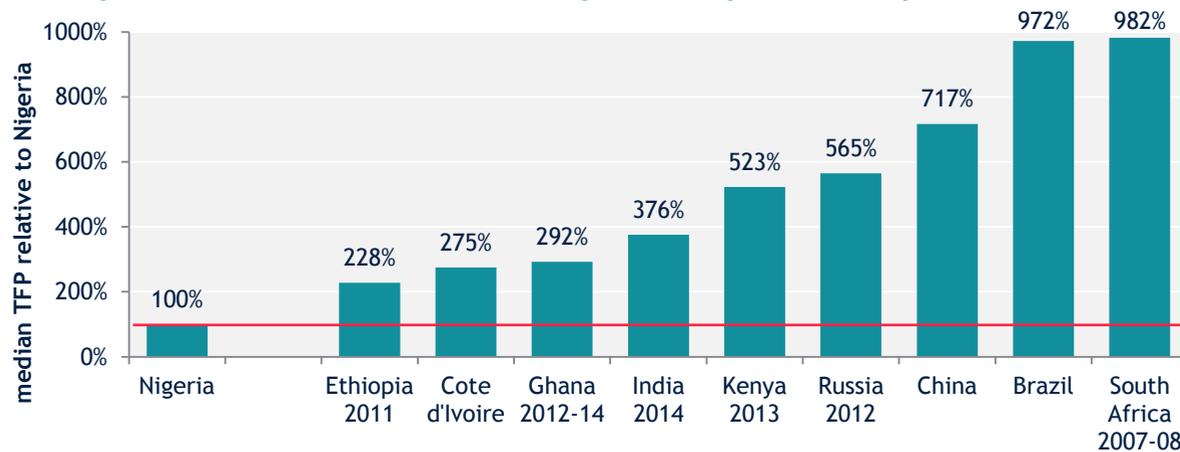
Different measures of firm performance are derived from analysis of the Enterprise Survey results. First, total factor productivity (TFP) is calculated using regression analysis and includes consideration of both capital and labor use. However, productivity is only one aspect of the competitiveness story. Firms with low productivity can remain competitive when wages are comparatively lower. The second measure of firm performance is unit labor cost, calculated as total labor cost divided by value added. Unit labor costs are higher when high labor costs are not fully reflected in high productivity. That is, when unit labor costs are high, all else equal, workers are earning higher wages than their productivity would justify. When this is the case, all else equal, firms will find it difficult to compete in international markets. The analysis additionally presents measures of firm growth, defined as growth of sales and employment.<sup>5</sup>

<sup>5</sup> Some of the performance measures discussed earlier in the report could only be calculated for manufacturing firms. For firms in other sectors, only information on intermediate inputs and capital was collected, and therefore, TFP and unit labor costs cannot be calculated. This is not the case for sales and employment growth. Because these metrics were collected for all firms, it is possible to compare across all sectors and subsectors.

## Low productivity driven by firms in the north

**The TFP of Nigeria’s manufacturing sector is lower than its per capita income would indicate.** When compared with other emerging markets, the TFP of Nigeria’s manufacturing sector is low. The median manufacturing firm in each of the BRICS economies possesses a TFP that is between 376 percent and 982 percent of the median manufacturing firm in Nigeria (Figure 7 below). TFP tends to be higher in countries where per capita income is higher, and because per capita income in Nigeria is lower than in most of the BRICS countries, this finding is not surprising. However, even by the standards of countries with lower per capita incomes than Nigeria, the TFP of its manufacturing sector is considered low. TFP is between two and three times higher in Ethiopia, Côte d’Ivoire, and Ghana, and it’s almost five times higher in Kenya. Overall, these results suggest that TFP in Nigeria should be substantially higher.

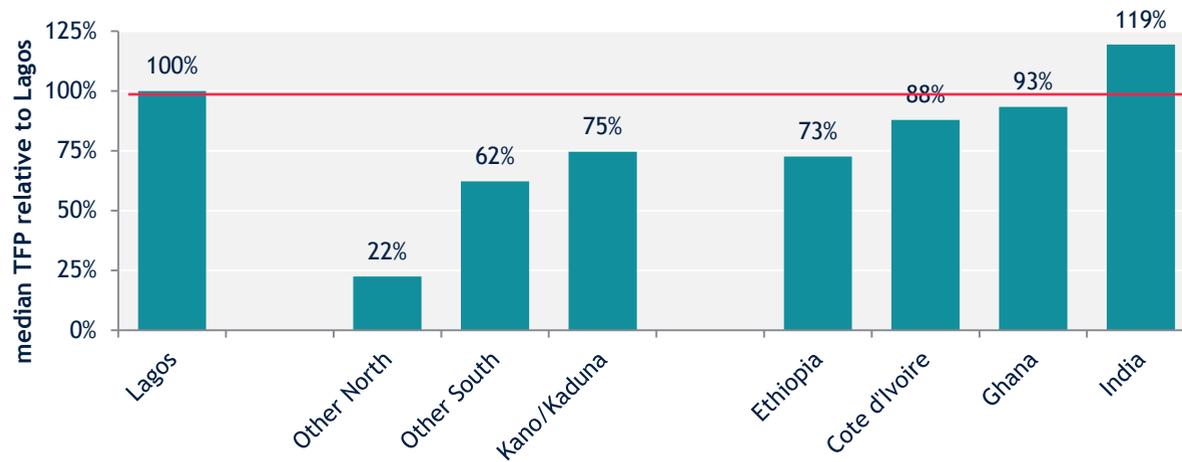
**Figure 7: TFP for a Median Manufacturing Firm in Nigeria and Comparator Countries**



Source: Authors’ calculation based on data from Enterprise Survey (2014–15 for Nigeria, latest available year for other countries)  
Note: Country estimates are from LAD regressions.

**Why is TFP so low in Nigeria?** At least in part, Nigeria’s low productivity measure appears to be driven by low productivity in the country’s north (Figure 10). While firm productivity in Lagos is similar to that in Ethiopia, Côte d’Ivoire, or Ghana, cities in Nigeria’s north lag behind considerably. Besides Kano and Kaduna states, northern cities possess a TFP that is approximately one-quarter of Lagos’s, and approximately one-third of southern states’ (except Lagos). Overall, this suggests that the low TFP measure in the north partially accounts for Nigeria’s overall low productivity.

**Figure 8: TFP for a Median Manufacturing Firm in Lagos and the Other Nigerian Regions**



Source: Authors' calculation based on data from Enterprise Survey (2014–15 for Nigeria, latest available year for other countries)  
 Note: Country estimates are from LAD regressions.

### ***Nigerian Manufacturing Sector—Noncompetitive Relative to Other Countries***

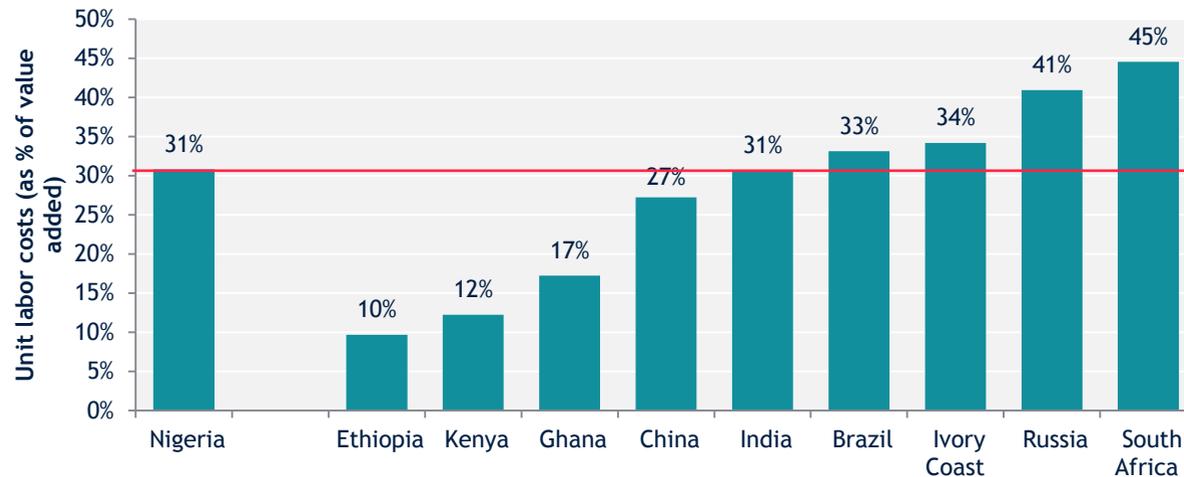
#### **Unit labor costs are relatively high in Nigeria compared to other African countries.**

The median firm in Nigeria has a unit labor cost equal to approximately 31 percent of output (Figure 9). The only other African countries that possess a higher unit labor cost are Côte d'Ivoire (34 percent) and South Africa (45 percent, which is particularly high).<sup>6</sup> Nigeria's unit labor cost compares more favorably with those in the BRIC economies, where it is only slightly higher than in China (27 percent), comparable with India and Brazil (31 and 33 percent, respectively), and lower than in Russia (41 percent).

**Unit labor costs differ substantially across Nigeria.** In Kano state, Kaduna state, and the rest of the southern states, the unit labor cost is comparable to countries with the lowest measures such as Ethiopia, Kenya, and Ghana (Figure 10), which suggests a comparative advantage of these states (compared to Lagos). Although productivity is low in other northern provinces, unit labor costs remain also relatively modest, which suggests that wages are relatively low in the north compared to other states. In contrast, unit labor costs in Lagos are high; at 57 percent, they are higher than in any comparator country including South Africa—which is not the case for TFP. This indicates that labor costs in Lagos are too high compared to TFP. As a result, firms in Lagos do not appear competitive when compared to other countries.

**Figure 9: Unit Labor Costs in Manufacturing in 2014—Nigeria and Its Comparator Countries**

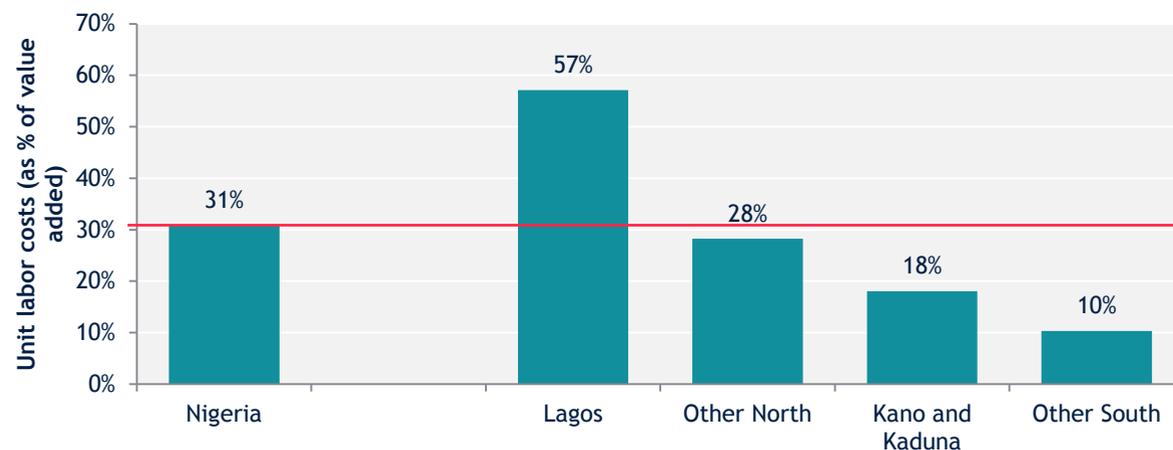
<sup>6</sup> See, for example, Clarke and others (2007) for a discussion of high labor costs in South Africa.



Source: Authors' calculations based on data from Enterprise Survey (2014–15 for Nigeria, latest available year for other countries)

Note: Unit labor costs are the ratio of labor costs to labor productivity. See Annex 3 for details.

**Figure 10: Unit Labor Costs in Manufacturing in 2014—Lagos and the Other Nigerian Regions**



Source: Authors' calculations based on data from Enterprise Survey 2014–15

Note: Unit labor costs are the ratio of labor costs to labor productivity. See Annex 3 for details.

### ***Low Investment, Particularly in the North***

**Nigerian manufacturing firms are not big investors.** One possible explanation for this is that firms might underinvest because they think long-term investment is risky. Political risk, for example, might discourage firms from investing. Similarly, previous studies have found that corruption can discourage investment—firms that are highly capital intensive are more vulnerable to corruption than firms that are highly labor intensive (Svensson 2003). Finally, when financial markets are underdeveloped, firms might underinvest because they have to finance investment with internal funds. As discussed in the next section, Nigerian firms cite corruption, political instability, and access to finance (see section above) as the biggest

constraints to doing business. Together, these constraints may discourage investment by Nigerian firms and somewhat artificially produce a high capital productivity measure. The issue seems to be more acute in the northern part of Nigeria, where firms are the most likely to be concerned with those investment constraints that might limit investment.

***A more conducive business environment in Nigeria could improve firm productivity by 40 percent.***

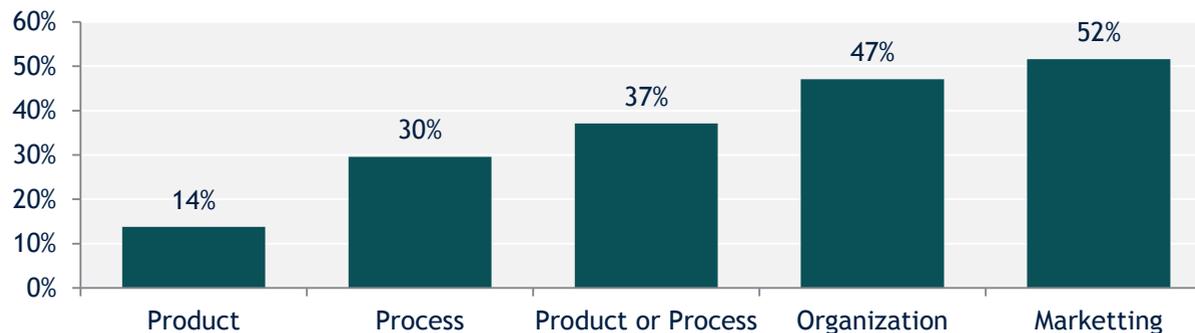
**Across every metric of the Enterprise Survey, the investment climate in Nigeria is more challenging than the median developing-country level.** Manufacturing firms in Nigeria spend more time meeting regulation requirements, pay more bribes, and lose more to crime, insecurity, and power outages than the median developing country. Manufacturing firms in Nigeria are also less likely to have bank credit, less likely to have their own websites, less likely to license foreign technologies, and less likely to have training programs. They are also less likely to export and less likely to be foreign owned. All of these factors contribute to a lower TFP.

If Nigeria’s Investment climate reached the median level of developing countries within each performance metric measured by the Enterprise Survey, TFP would be approximately 40 percent higher. The biggest gains would come from reducing crime, improving access to credit, reducing losses due to power outages, and increasing use of the Internet.

### Innovation in Nigeria

**Nigerian firms possess a low degree of technological innovation.** In 2014, only 14 percent of Nigerian firms introduced a product innovation, and approximately 30 percent introduced a process innovation. Technological innovations, product or/and process, were introduced by only 37 percent of firms. Nontechnological innovations were, however, more prevalent. Organizational innovations were introduced by 47 percent of firms, while more than half of firms introduced some type of marketing innovation.

Figure 11: Firm-Level Innovation Outcomes in 2014



Source: Authors’ calculations based on Enterprise Survey 2014–15

**Product innovation rates in Nigeria are the lowest among comparator countries and less than half the African average.** While Nigeria’s performance in process innovation is on par with other African countries, its rates of product innovation are less than half the African

average. Even while its performance in both types of nontechnological innovations—organizational and marketing—is above the African average, its poor performance in product innovation is most notable.

**Table 1: Innovation Rates in Nigeria and Comparator Countries**

	Product	Process	Product or Process	Organization	Marketing
Nigeria	13.8%	29.6%	37.1%	47.1%	51.6%
India	58.1%	66.2%	91.1%	55.1%	63.8%
Ghana	17.1%	25.3%	36.3%	30.5%	51.9%
Kenya	25.4%	26.4%	43.8%	35.9%	39.0%
Russia	20.5%	16.8%	28.2%	67.7%	-
Africa	27.2%	30.7%	46.5%	40.6%	46.1%

Source: Authors' calculations based on Enterprise Survey 2014–15. No information was available for Russia on marketing innovation.

**Innovation rates tend to be higher in the manufacturing sector than in the service sector.** Further, the innovation gap between manufacturing and services is more pronounced for technological than for nontechnological applications. The basic metals industry appears to be the most technologically innovative, while publishing and printing and wholesale are the least innovative. In terms of organizational innovation, garments and food—both labor-intensive industries—perform with the highest innovation rates, while wholesale trade and nonmetallic mineral products tend to be less innovative. Finally, empirical findings suggest that younger firms tend to innovate at higher rates than more mature firms.

**Firms with international exposure show higher innovation rates.** In relation to firms' foreign exposure, international traders, and especially importers, are more innovative than nontraders. This is similar to what is observed in other countries. However, contrary to what is found in other African countries, innovation rates of foreign-owned firms are lower than those for national firms.

**Firms that engage in R&D are more likely to introduce innovations; however, very few firms in Nigeria invest in R&D.** Table 2 demonstrates the R&D incidence (percentage of firms engaged in R&D), intensity (R&D expenditure per worker), and concentration (Herfindahl index for the concentration of R&D value across firms) for firms in Nigeria and across comparator countries. Only 10.5 percent of all Nigerian firms engage in R&D activities, and only 3 percent do both internal and external R&D, which is in stark contrast to the higher rates in India (56 percent of firms), Russia (13 percent), Kenya (23 percent), Ghana (15.5 percent), and the African average excluding Nigeria (18.4 percent).

**Table 2: Investment in Research and Development (R&D)**

	R&D Incidence % of all firms			R&D Intensity \$ per worker	R&D Concentration HHI <sup>b</sup>
	Overall	Internal	External		
Nigeria	10.5%	10.3%	3.0%	359	0.29
India	56.2%	53.0%	7.1%	48	0.07
Kenya	22.8%	22.1%	4.5%	234	0.69
Ghana	15.5%	14.2%	3.4%	602	0.55
Russian Federation	12.9%	11.9%	4.5%	2755	0.27
Africa <sup>a</sup>	18.4%	16.2%	6.9%	242	0.27

Source: Authors' calculations based on Enterprise Survey 2014–15

<sup>a</sup> Africa average, excluding Nigeria and including DRC, Ghana, Kenya, Namibia, South Sudan, Sudan, Tanzania, Uganda, and Zambia. Source: Authors' calculations based on countries' enterprise surveys.

<sup>b</sup> Herfindahl-Hirschman Index.

### 3. Conclusions and Recommendations

**Growth in the Nigerian NFE sector, especially driven by microenterprise growth, has the potential to increase household incomes and overall employment.** While the majority of NFEs are operated by a single person, MEs represent a subset that hires workers who are not members of the household. As a whole, all NFEs experienced an increase in sales from 2011 to 2013; however, only microenterprises managed to grow the size of their labor force. This finding suggests that policy initiatives should drive growth within the ME subset, at least in part by encouraging HEs to transition into MEs. The government's "YouWin" program demonstrates how this can be done transparently and effectively. All such programs should be rigorously evaluated to assess financial value and developmental impact.

**Policy initiatives that encourage entrepreneurial activity in northern states (excluding Kano and Kaduna) will grow local government revenues, strengthen local economies, and raise household incomes.** Given the low density of firms in the north of Nigeria, and the consequential lack of positive agglomeration effects, spatial solutions focused on carefully selected market segments and value chains could be used to harness nascent market opportunities. This type of policy initiative would encourage startups and allow fragile enterprises to connect to viable markets in economic centers throughout the country.

**Reduce external costs to private sector firms by improving the investment climate.** It is estimated that TFP of firms in Nigeria would improve by 40 percent if investment climate measures were improved to median developing-country levels. For example, reducing losses from power outages alone is estimated to improve sales by 17 percent, demonstrating that power-related reforms in Nigeria would have an immediate positive effect on firms. Further, Nigerian firms report high levels of management engagement with public officials, which represents increased opportunity for corruption, crime, and red tape. A special task force focused on reducing administrative bottlenecks should be established to allow private firms to focus more on firm competitiveness and productivity. This task force should have clear performance-related benchmarks, such as the removal of one regulatory constraint every six months for the next three years.

**Implement enterprise support programs that are private sector driven, reach a larger number of enterprises, and generate a high social return to increase firm-level capability and productivity of existing firms.** Currently, there is little cooperation or information sharing between firms themselves, and between firms, public research centers, and universities. As a result, the internal costs of innovating or adapting to changing market conditions are quite high, and investments that are made often perform poorly. Enterprise support programs have the potential to address this market dynamic effectively.

**Develop a financial sector tailored to the needs of MSMEs at scale.** As highlighted in details in this report, commercial banks serve only the large firms while MSMEs suffer from a very limited access to finance. The government has embarked on establishing a wholesale financial institution to encourage the provision of long-term finance to MSMEs. This policy initiative should be expedited to address the reported lack of access to finance for MSMEs in Nigeria. Other complementary measures should include: (a) improving financial sector infrastructure by implementing a movable assets registry, establishing a credit reporting framework, and improving payments systems; and (b) encouraging the development and supply of new financial products for MSMEs.

**Review and reform MSME initiatives with the objective of improving the efficiency of these programs and institutions.** The priority for development programs is to target the “right” entrepreneurs and to allocate resource-constrained project funds in a way that maximizes the impacts of interventions.

## Chapter 1: Introduction

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### 1. Objective

**The objective of this report is to evaluate the investment climate in Nigeria across all operational dimensions.** This report is largely based on the results of firm-level surveys administered to private enterprises and households and includes data on the cost of doing business, the regulatory environment, the labor market, the financial sector, the trade regime, and levels of investment.

**Another objective of this report is to better understand the dynamics of non-farm enterprises,** a type of informal activity that accounts for the bulk of total employment and private sector activity in Nigeria. This report thus includes a particular focus on non-farm enterprises, based on the two most recent rounds of household surveys in 2010–11 and 2012–13.

### 2. Structure of the Report

**This report is structured as follows:** Chapter 1 provides the macroeconomic context and methodology of the report. Chapter 2 gives a brief overview of the private sector in Nigeria, including both formal and informal firms. Chapter 3 focuses on non-farm enterprises, most of which are informal. Using the two rounds of household surveys, productivity and profitability across Nigeria are tracked and analyzed. Chapter 4 is based on the new Enterprise Survey (2014–15) and provides a detailed performance analysis of formal firms in the manufacturing sector. Chapter 5 uses the newly developed innovation module to investigate the effect of innovation on firm-level productivity.

### 3. Macroeconomic Context

Nigeria has the largest economy and population in Africa and has experienced fifteen years of uninterrupted civilian and democratic rule. This period also witnessed unprecedented economic growth and stability. Annual economic growth has exceeded an average of 5 percent and has been concentrated in sectors servicing the domestic market. Some areas of Nigeria, particularly Lagos State, have experienced quite rapid growth and poverty reduction in recent years.

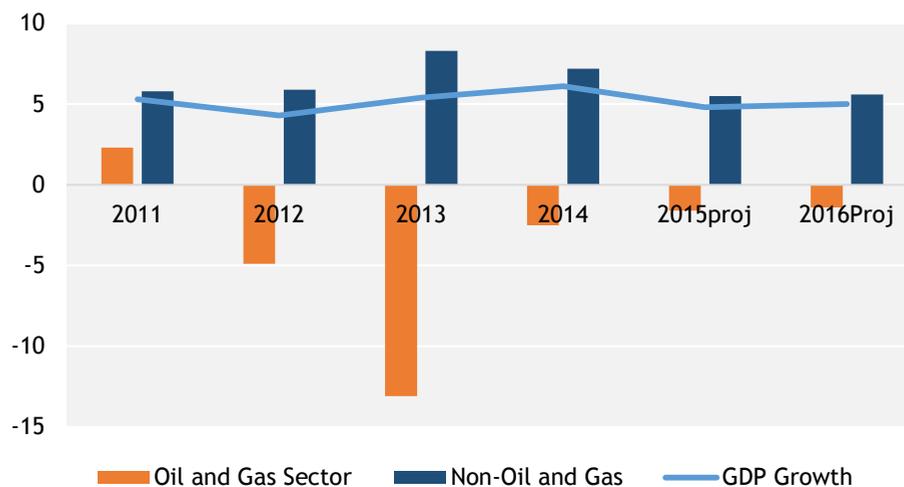
Nigeria has made important progress in reform and institution building during the period of civilian rule, progress that has continued into recent years. The creation of the Excess Crude Account (ECA) in 2004 was a milestone for the effective management of oil revenues and implementation of countercyclical fiscal policy, which are crucial for economic stability in Nigeria. The federal government and a number of Nigerian states have introduced important reforms in public financial management, including procurement, medium-term fiscal frameworks, sector strategies, and integrated financial management information systems. Priority areas for recent reforms have included power—the state-owned power holding company was

unbundled and privatized into four generating companies and eleven distribution companies—agriculture, social assistance, and financial sector / banking regulation.

After successful general elections on March 28, 2015, a new administration took over on May 29, 2015. This transition represents a new era in Nigerian politics; it is the first transition of power in the country since the return to civilian rule and democracy in 1999. The new administration has made it a priority to achieve greater transparency in public finance and the oil sector—and to combat the high level of corruption in the country.

**The Nigerian economy has experienced significant economic growth over the last decade.** According to the latest national statistics, GDP growth averaged 5.3 percent from 2011 to 2014. Recent growth has largely been driven by the expansion of domestic demand, while exports, dominated by the oil sector, experienced negative growth (-1.3 percent) in 2014 for the third year in a row (Figure 12). The decline of the oil sector can be attributed to reported increases in oil theft, temporary suspension of pipeline operation, and an uncertain regulatory environment that has limited investment in this sector. Since 2009, the government has been attempting to pass a comprehensive Petroleum Industry Bill (PIB) to improve the regulatory climate for oil and gas; however, controversy surrounding the draft legislation has so far prevented its passage in the National Assembly.

Figure 12: GDP Growth in Nigeria (Percent)



**Despite this protracted period of growth, welfare improvements have been unevenly distributed across the country.** While the share of the population living below the official poverty line<sup>7</sup> declined from 35 to 33 percent between 2010 and 2012, a regional breakdown of this metric is more telling. In the country’s South West (including Lagos), poverty rates dropped from 21 percent in 2010 to 16 percent in 2012. By contrast, poverty rates in the North West and North East did not decline at all during this period, standing at 46 and 50 percent, respectively, in 2012. Higher poverty rates in the North West and North East reflect a number of factors, including relatively poor social services, infrastructure weaknesses, and the recent instability in that region.

<sup>7</sup> The official poverty line in Nigeria is based on daily per capita consumption of 3,000 calories.

**The pace of inflation in Nigeria in recent years has been rather high, although tighter macroeconomic policy since 2011 has gradually subdued inflationary pressures.** Consumer Price Index (CPI) inflation remained in double digits until 2013, which reflected a number of factors including pressures for currency appreciation at the prevailing exchange rate (pre-2008), currency depreciation (2009), expansionary fiscal policy (2010 to mid-2011), administered increases in utility prices (2012), and poor weather conditions (2012). The introduction of tighter monetary and fiscal policy subsequently succeeded in bringing down core inflationary pressures. Year-on-year CPI inflation in December was 8 percent for both 2013 and 2014. The pace of inflation increased slightly in early 2015 following the depreciation of the naira, reaching 8.5 percent in March (year-on-year). It is expected that the pace of inflation will again decline following the stabilization of the naira.

**High interest rates impede private sector growth.** Following the recovery of Nigerian banks from the global financial turmoil of 2008–09, the Central Bank increased the base interest rate from 6 percent to 12 percent and increased it further to 13 percent in 2014. Considering that the Central Bank was also committed to holding the exchange rate essentially stable against the US dollar during 2012 through most of 2014, the domestic interest rate has been quite high by international standards and, consequently, the focus of some controversy within the country. Real credit growth to the private sector has remained extremely modest since the banking crisis and was even negative until 2013. The domestic interest rate is also a primary cause of the massive influx of short-term capital since 2012, which has arguably added additional volatility to the country’s already unstable balance of payments position. The Central Bank maintains that its tight monetary policy position has been necessary to bring inflation down to acceptable levels.

#### 4. Rationale for Report and Relevance to Government’s Priorities

**The Nigerian economy remains highly exposed to fluctuations in the international oil market.** Oil prices in international markets have fallen from around US\$115 per barrel in June 2014 to about US\$40 per barrel today. The impacts on the macroeconomy can already be observed.<sup>8</sup>

- First, the oil price shock produced a 20 percent depreciation of the naira. Until 2015, authorities held the official exchange rate quite stable, opting for rapid one-off depreciations in the face of strong pressures on the naira: 20 percent in 2009, 6 percent in 2011, and 6 percent in 2014.
- Second, oil exports account for about 95 percent of foreign earnings and about 70 percent of government revenues. As a result, Nigeria’s balance of payments has exhibited significant volatility in recent years, a situation exacerbated by economic policy and political factors. Gross foreign reserves, at US\$29 billion, are currently at their lowest level in recent years and provide just six months’ cover for imports of goods and services. However, since official statistics are widely considered to underestimate imports, actual import cover is probably closer to four to five months.

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<sup>8</sup> IMF growth predictions for 2015 have been cut from over 7 percent to 5 percent.

- Third, adjustments in economic policy in response to the drop in oil prices have had limited impact. The burden of the fuel subsidy, which increases with the oil price, has been consistently very high, costing the government close to US\$30 billion since 2011. The government tried to eliminate the fuel subsidy in early 2012, but growing civil unrest finally led to its reinstatement with a 50 percent reduction. As part of this agreement, a significant portion of the savings generated from this reduction have gone to finance special extra-budgetary programs under the Subsidy Reinvestment Program (SURE-P).
- Fourth, with the ECA almost depleted, the sharp drop in oil prices has severely strained federal and state budgets, resulting in significant budget cuts, particularly to capital expenditures. With 2014 oil revenues 6 percent below projection,<sup>9</sup> federal government revenues were 15 percent below those projected in the budget. In response to this decline, the federal government significantly reduced capital expenditure outlays in 2014. As a result, the 2015 total approved budget is 4 percent lower than the budget approved in 2014 in nominal terms. So far, allocations to key sectors such as education and health have been protected.
- Fifth, Nigerian states have been severely affected by the oil price shock. Most states depend on Federation Account (mostly oil) allocations for the vast majority of their budgetary revenues, and have therefore been compelled to tighten their budgets substantially. Given the nature of the revenue sharing rule, the extent of the decline in oil revenues accruable to the federal government is identical for most Nigerian states. For the oil-producing states, the decline is even greater. Further, most states have limited capacity to borrow, and require federal government approval for any foreign borrowing. There are reports that more than ten states have recently accumulated salary arrears. In addition, twenty-five out of thirty-six states have passed 2015 budgets that are, in nominal terms, below those approved in 2014. On average, approved state government budgets for 2015 are 10 percent below the approved budgets for 2014. The states of Rivers and Delta, which are heavily dependent on oil transfers, have made the largest adjustments, with their 2015 approved budgets at 30 percent and 27 percent below those approved for 2014, respectively.

**High population growth and insufficient job creation may worsen underemployment and poverty in Nigeria, especially for the youth.** Nigeria's population pyramid remains dominated by children and youth, and, with 3 percent annual growth in the general population, the working-age population in Nigeria is growing disproportionately.<sup>10</sup> While explicit unemployment in Nigeria by the ILO definition appears to be well under 10 percent, low-productivity jobs in agriculture and services currently account for the majority of employment. According to the Nigeria Jobs Report (2015), only nine million out eighty-seven million working-age adults are indeed wage workers in either the private or the public sector, while the bulk of the population works in agriculture or is self-employed. The government

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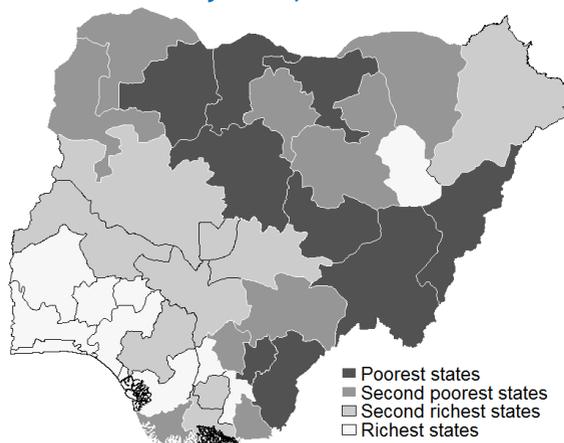
<sup>9</sup> The Nigerian Government has consistently overprojected nonoil revenues. Until recent years, this was compensated by oil revenues, which had been underprojected. However, both categories of revenues were overprojected in 2013 and 2014.

<sup>10</sup> The World Bank, *More, and More Productive, Jobs for Nigeria: A Profile of Work and Workers*, Washington, DC, (2015).

considers the shortage of productive jobs to be the most important current challenge for the country. With a population close to 180 million and a median age of fourteen, an estimated forty million new jobs will be needed to absorb labor market entrants by 2030.

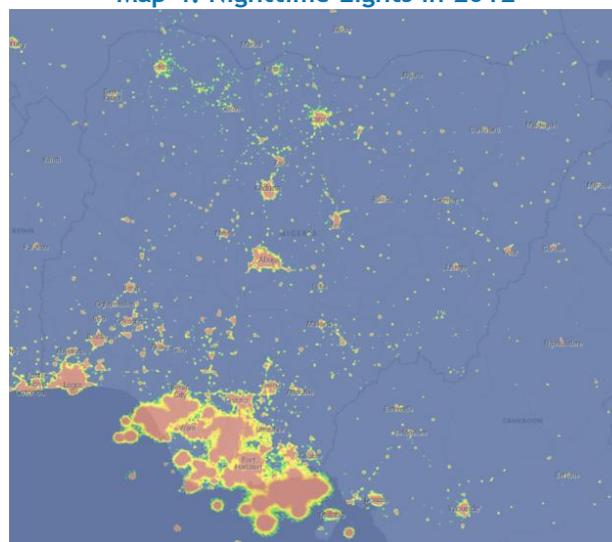
**With the predominance of economic activity occurring in Lagos, around oil and gas sources in the Delta region, and along the Kano/Kaduna corridor, economic progress in Nigeria has been uneven.** Apart from these specific regions, much of the rest of the country has remained economically stagnant with high poverty rates. As shown in map 3 below, the poorest states are located in the northern and eastern parts of the country. Map 4 below provides a snapshot of economic activity in Nigeria using nighttime light intensity as a proxy. It shows that the concentration of population and economic activity in the Delta region, as well as in Lagos and to a lesser extent in Abuja, is very high when compared to the rest of the country.

**Map 3: Proportion of Poor Households by State, 2012–13**



Source: GHS dataset (2012–2013)

**Map 4: Nighttime Lights in 2012**



Source: WB (2015) based on Defense Meteorological Satellite Program (DMSP) data

**The development of a vibrant private sector, particularly focused in the north, constitutes one option—among others such as investment in education or health programming—for reducing inequality in the country.** There is evidence to suggest that the availability of wage work can reduce poverty measures. As indicated in the Nigeria Jobs Report (2015),<sup>11</sup> the richest 20 percent of the population account for 40 percent of private wage work, which implies that wage work is a significantly more profitable occupation than agriculture or self-employment. Increasing the number but also the quality of jobs in Nigeria, especially for unskilled youth, may help reduce both underemployment and poverty, in particular in the areas that are subject to high poverty rates.

This report is an attempt to understand how to foster the development of a vibrant private sector beyond the bounds of the economic capital city of the country, Lagos.

<sup>11</sup> The World Bank, *More, and More Productive, Jobs for Nigeria: A Profile of Work and Workers*, Washington, DC, (2015).



## 5. Lessons Learned So Far

### **Low wages do not compensate for the low labor productivity observed in Nigeria.**

The last Nigerian Investment Climate Assessment (ICA 2011) finds relatively low wages in Nigeria relative to most of the comparator countries. The median firm reported annual wages of about US\$882 per worker, compared to about US\$1,800 in Kenya; US\$4,400 in Russia; and US\$7,600 in South Africa. This implies that Nigeria could potentially attract investors that seek low labor costs, especially in labor-intensive manufacturing sectors. At the same time, however, value added per worker was also lower in Nigeria than in most comparator countries: approximately US\$2,100 for a median manufacturing firm, compared to US\$7,700; US\$9,100; and US\$18,700 for firms in Kenya, Russia, and South Africa, respectively. Firms in Kenya are about 40 percent more productive, firms in Russia almost twice as productive, and firms in South Africa almost four times as productive. As a result, if we compare wages with labor productivity levels, unit labor cost (labor costs as a percentage of value added) in Nigeria are among the most expensive in Sub-Saharan Africa. In other words, the low wages in Nigeria do not compensate for low labor productivity, and this diminishes Nigeria's competitiveness compared to other comparator countries.

**Nigerian firms face a challenging business environment.** According to the Doing Business Report (2015), Nigeria ranks near the bottom in “ease of doing business” (170 out of 189 countries), suggesting the existence of major barriers. In this report, we consider the business environment to include (a) *economic incentives* that are shaped by a set of macroeconomic policies, a regulatory framework, and public administrative procedures; and (b) *incentives embodied in institutional arrangements* such as the security of property rights, the rule of law, and governance stability. Institutional arrangements influence private investment decisions by structuring the rules of the game as they affect investment uncertainty, risk, and investment safeguards (protection of property rights, enforcement of contracts, and maintenance of integrity of monetary standards).<sup>12</sup> Defined in this manner, the business climate encompasses those attributes that will influence the financial return on different economic activities. Hence, a nonconducive investment climate likely will discourage the private sector from investing in both human and physical capital, leading to low productivity of both labor and capital. According to the last two Nigeria ICAs (2009 and 2011), the three most important constraints to doing business are lack of access to electricity, finance, and transport. Investment climate constraints add substantially to the cost of doing business in Nigeria. Each year, more than 10 percent of sales is lost as a result of unreliable electricity, transport delays, and crime and corruption, which is twice the levels reported in South Africa, Brazil, Russia, and Indonesia.

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<sup>12</sup> The term *investment climate*, broadly defined, includes a country's unique attributes, or “geography” (climate, endowments of natural resources, distance from important markets, and so on), as well as the state of its infrastructure, economic and social policies, institutions, and governance stability. For operational purposes, a narrower definition is used that focuses on the endogenous determinants of investment. For example, Stern (2000a) notes that it is “the policy, institutional, and behavioral environment, present and expected, that influences the returns, and risks, associated with investment.” This definition, in its reduced form, includes economic incentives, which are shaped by macroeconomic and regulatory policies and public administrative procedures, and incentives embodied in institutional arrangements, such as security of property rights and rule of law and governance stability.

**Good management can help firms overcome a weak investment climate.** The ICA (2009) found that Nigerian firms that are better managed are 60 to 80 percent more productive than firms that are not. It also indicated that good managers can be almost as productive in a poor business environment as poor managers are in a good environment, thereby stressing the importance of management skills in improving the profitability and productivity of Nigerian firms.

**The Nigerian economy consists of productive enclaves in a sea of smaller, low-productivity firms.** Recent work conducted by Ramachandran et al. (2013)<sup>13</sup> indicates that Africa does not seem to be lacking in entrepreneurship or enterprise start-ups, rather, it lacks dynamic firms to drive aggregate productivity and employment. Most countries in Africa have only a small number of large, successful firms, but these firms often act as monopolies, with the political economy preserving this market structure. These firms often have close relationships with government and no interest in changing the rules of the game. The nature of the business environment maintains this unequal distribution of productivity.

**The existence of strong social networks in Nigeria may also lead to fragmented markets and high search and transaction costs.** In their study of the impact of ethnicity on socioeconomic well-being, Fenske and Zurimendi (2015)<sup>14</sup> show that oil price fluctuations affect adult human capital outcomes (education, employment, wealth, etc.) differently depending on their ethnic group. In addition, Aker et al. (2014) show that cross-border transaction costs are lower when traders share a common ethnicity. They conclude that “having a common ethnicity reduces the transaction costs associated with agricultural trade, especially in communications and credit transactions.” While not directly related to private sector development, these findings suggest that ethnic networks may create fragmented labor and supplier markets.

## 6. Scope, Methodology, and Data

**This report focuses on firm-level productivity and job creation in Nigeria,** and highlights regional differences where relevant. Nigeria is composed of thirty-six states grouped in six geopolitical zones (South West, South South, South East, North Central, North West, and North East), as shown in Figure 13 below. Different measures of firm-level productivity are used throughout this report, namely total factor productivity (TFP), labor productivity, and capital productivity. It then investigates the drivers of productivity and employment growth by linking firm-level variations to firm characteristics or different degrees of investment climate constraints. In particular, understanding the impact of investment climate constraints on firms is crucial to identifying private sector challenges and formulating tailored recommendations.

**Different data sources are used to better understand** the drivers of employment and productivity growth in Nigeria. The General Household Survey (GHS) provides data on the contribution of wage work to the Nigerian economy and its share of total employment. In

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<sup>13</sup> A. Gelb, C. J. Meyer, and V. Ramachandran, “Development as Diffusion: Manufacturing Productivity and Sub-Saharan Africa’s Missing Middle,” *Center for Global Development Working Paper*, (2014).

<sup>14</sup> J. Fenske and I. Zurimendi, “Oil and Ethnic Inequality in Nigeria,” *Centre for the Study of African Economies, University of Oxford*, (2015).

addition, the GHS module on NFEs provides information on the dynamics of these micro and small enterprises, as well as the constraints they face. The Enterprise Survey covers mainly formal enterprises with more than ten employees and was used to analyze the dynamics and constraints of the formal sector in Nigeria.

**General Household Survey.** The survey was carried out by the National Bureau of Statistics (NBS) in collaboration with the Federal Ministry of Agriculture and Rural Development (FMA&RD), the National Food Reserve Agency (NFRA), the Bill and Melinda Gates Foundation (BMGF), and the World Bank (WB). It comprises a cross-sectional survey of twenty-two thousand households throughout the country on an annual basis. Under the partnership, a full revision of the questionnaire was undertaken, and five thousand households became part of a panel survey, which collected additional data on multiple agricultural activities and household consumption. The purpose of the panel component was to improve data from the agriculture sector and link this to other facets of household behavior and characteristics. The first wave of the revised GHS and GHS-Panel was carried out in two visits to the panel households (after-planting visit in August–October 2010 and after-harvest visit in February–April 2011), and one visit to the full cross section (in parallel with the after-harvest visit to the panel). The second wave was carried out in 2012 in two visits (after-planting visit in September–November 2012 and after-harvest visit in February–April 2013). We made use of the household questionnaire—in particular the module on non-farm enterprises—as well as the community questionnaire to characterize the different Nigerian states.

**Enterprise Survey.** The survey was conducted in Nigeria from April 2014 to February 2015. The sample was composed of firms in manufacturing, construction, and retail and wholesale trade. Within these broad sectors, firms were randomly selected from lists of registered firms. The sample consisted of 2,676 small (five to forty-nine employees), medium (fifty to ninety-nine employees) and large (more than one hundred employees) firms in nineteen states, with approximately 50 percent in manufacturing. Only formally established firms with five or more employees were included in the sample. A module on innovation was also administered to a portion of this sample. Details on the Enterprise Survey are provided in Annex 2.

**Other sources used in this report include** two Investment Climate Surveys (2009, 2011); the Doing Business Report (2015); and results from the YouWin (Youth Enterprise with Innovation) program. The YouWin program, which was launched in 2011 by the Nigerian Government, provided grants to four thousand firms that were selected through a three-round business plan competition. The third round of the program attracted almost 114,000 applications and provided a large source of information on Nigerian entrepreneurs.

Figure 13: States and Geopolitical Zones in Nigeria



## Chapter 2: A Brief Overview of the Private Sector in Nigeria

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### 1. Introduction

**Nigeria’s nonoil sector has been growing, except in manufacturing.** In the 1990s, the growth of oil production led to a low level of investment in nonoil sectors. Since the early 2000s, the government of Nigeria has been attempting to diversify the Nigerian economy. Since 2003, 70 percent of growth observed in the nonoil sector has been attributable to the agriculture, wholesale, and retail sectors. Relatively new sectors, such as construction, financial, and ICT, have also recorded high growth and initiated a structural transformation of the Nigerian economy toward the services sector.<sup>15</sup> The emblematic example of this success is the entertainment industry—also known as Nollywood—that directly employs an estimated two hundred thousand people, mostly young university graduates. On the other hand, little investment has been made in the manufacturing sector, which, as a result, has progressively collapsed over the past decade.

**The private sector in Nigeria remains difficult to define.** Most Nigerian firms operate in the informal sector; they are not registered with the Corporate Affairs Commission (CAC) and do not pay taxes. As a result, the official numbers do not capture the informal activities that account for the bulk of the Nigerian economy. The most recent National Census of Industries and Businesses (NCIB) was conducted in 1998–99, and due to delays in making this data available, the resulting lack of information has posed challenges to policymakers. The World Bank has conducted a series of enterprise surveys (2007–08, 2009–10, and 2014–15), but these surveys cover only registered firms and exclude the informal sector.

**This chapter is a first attempt to provide a snapshot of the private sector in Nigeria,** covering the size, geographic boundaries, and composition of formal and informal activities. The analysis uses different sources of data, including household surveys, registrations from the YouWin program, official numbers, and nighttime lights to address the scope of this chapter. The first section investigates the size of the wage work sector and the share of wage workers in the private sector. The second section provides an overview of the formal and informal private sectors and their sectoral composition.

### 2. The Size of the Wage Work Sector in Nigeria

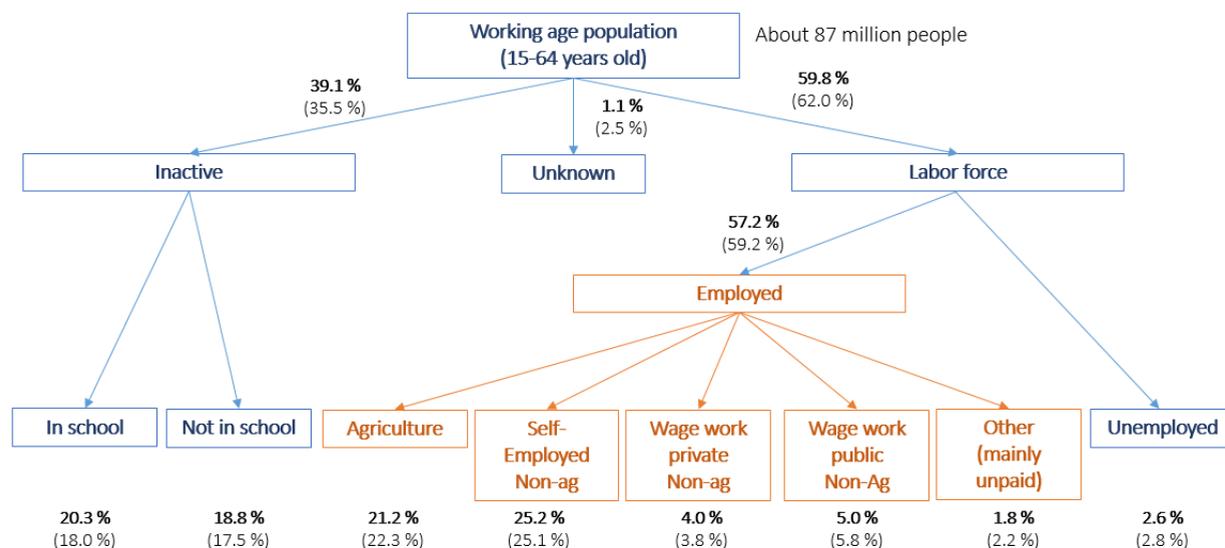
**A majority of Nigerians work.** Nigeria’s population, the largest in Africa, was estimated at 158 million in 2011. Some eighty-seven million people (over 50 percent) are between fifteen and sixty-four years of age (Figure 14 below). In this group of working-age adults, fewer than 3 percent are *unemployed* (defined as not working but looking for a job). Others are *inactive* (people not working but not looking for a job). More than half of this inactive population is not attending school, and 70 percent of this group are women. In 2013, about fifty million people

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<sup>15</sup> The World Bank, “Putting Nigeria to Work: A Strategy for Employment and Growth,” *Directions in Development*, ed. Volker Treichel, Washington, DC, (2010).

were employed. Most people work for themselves. Agriculture and nonfarm activities account for 70 percent of employment (as shown in Figure 15).

**Figure 14: Distribution of Nigeria’s Working Population (Fifteen to Sixty-Four Years Old) in 2013**



Source: Estimates based on GHS 2010–11 and GHS 2012–13

Note 1: Numbers in parentheses correspond to the estimates for 2010–11. *Wage work private* includes private firms, NGOs, cooperatives, and international organizations. *Wage work public* includes federal, state, and local governments.

Note 2: Population-weighted proportion. Questions used: “In your main activity/employment, what is the employer in this job?” combined with “Have you received wages, salary, or other payments either in cash or in other forms from this employment for this work?” and “In what sector is this main activity?”

**Wage work accounts for about 15 percent of employment, and more than half of wage work is in the public sector** (see Figure 15). Compared to lower middle-income countries in East Asia, where the wage sectors in Indonesia, Philippines, and Vietnam employ 40, 57, and 35 percent of workers, respectively, Nigeria’s wage work composition is quite small.<sup>16</sup> Further, the public sector has traditionally attracted the most educated workers. According to the Nigeria Job Assessment (2015), in 2011, more than half of those with secondary or tertiary education worked in the public sector.<sup>17</sup> However, the privatization of the banking, electricity, and telecom sectors has reduced the share of public sector employment, from 9.3 percent in 2011 to 8.3 percent in 2013 of labor force. The public sector is still dominant in 2013, though there is a slight convergence of the private sector (Figure 15).

**Economic activities in Nigeria have historically been concentrated in the southern part of the country, with the exception of Kano in the north.** However, in the past decade, there has been a progressive convergence of the less economically vibrant central and northern regions toward the south. Map 5 indicates that economic activity has indeed grown significantly faster in the central and northern regions. This has been driven partly by large investments in

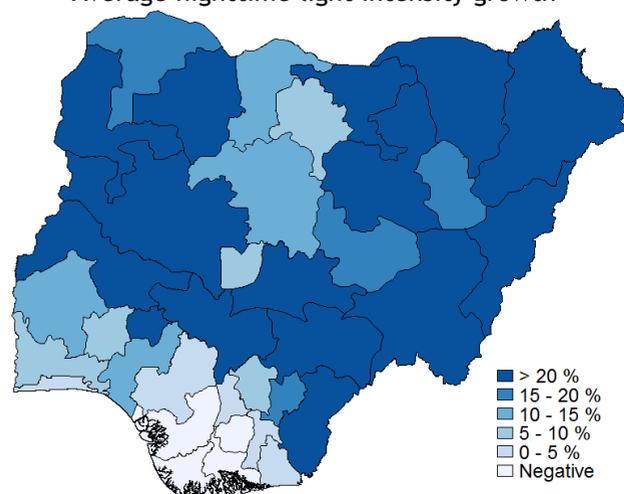
<sup>16</sup> The World Bank, *World Development Indicators*. (2014). Online database, accessed June–October 2014.

<sup>17</sup> The World Bank, *Nigeria Job Assessment: More, and More Productive, Jobs for Nigeria - A Profile of Work and Workers*, forthcoming, (2015).

roads and electricity grids. The government has been committed to developing infrastructure networks that are national in scale. As a result, only a few areas remain unconnected, although the quality and density of the infrastructure is usually better in the south than in the north.<sup>18</sup> Nighttime light intensity, however, also indicates that these convergence efforts have slowed in recent years (mMap 6), except in Kano State, the Federal Capital Territory (FCT), due to economic turmoil and/or internal population migration. As a result, most economic activities are still located in southern Nigeria, with the exception Abuja, Kano, Kaduna, Jos, and Sokoto.

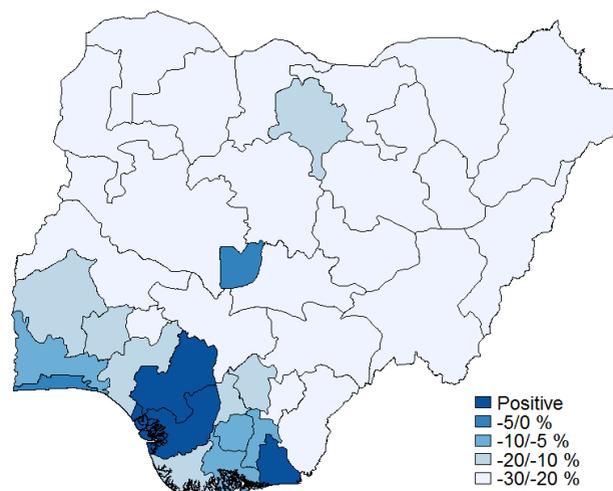
**Map 5: Proxy for Economic Activity Growth, over the Period 2003–2012**

Average nighttime light intensity growth



**Map 6: Proxy for Economic Activity Growth, over the Period 2009–2012**

Average nighttime light intensity growth



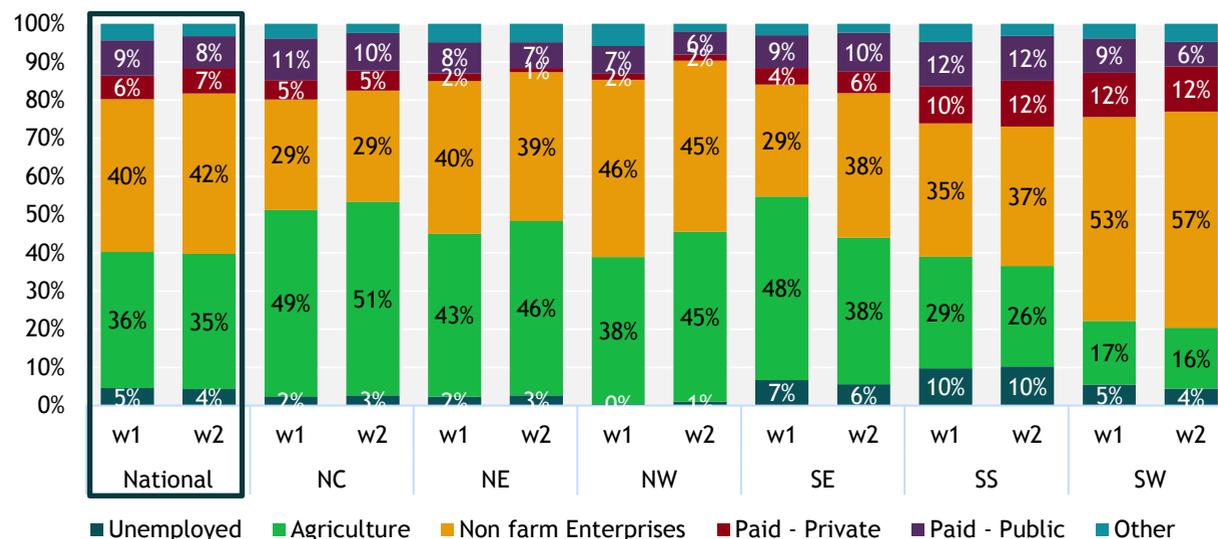
Source: Authors' calculations based on Defense Meteorological Satellite Program (DMSP) data

Note: Nighttime lights are used as a proxy for economic activity, following the work done by Henderson et al. (2012) and Michalopoulos and Papaioannou (2013). These data are collected by satellite images every night and averaged over the course of the year. Each geographic cell constitutes a pixel of roughly one square kilometer. The intensity of each pixel is reported as a number ranging from zero to sixty-three, where every observation above sixty-three is capped at sixty-three. Intensity for each state is the average intensity of all cells that constitute a state.

**The wage work sector is also more heavily concentrated in the south.** The occupational choices of the labor force differ by region, as shown in figure 15. In 2013, the wage work sector accounted for 24 and 18 percent of total employment in the South South and South West zones, respectively. By comparison, the share of wage work is only 8 percent in the North East and North West zones. The size of the public sector has been slowly decreasing in all zones; as a result, the private sector outweighs the public sector in the South West zone, and in 2013, it employed twice as many people as the public sector in this zone. According to the GHS, private sector wage work is almost nonexistent in the north.

<sup>18</sup> V. Foster and N. Pushak, "Nigeria's Infrastructure: a Continental Perspective," *Policy Research Working Paper 5686*, The World Bank, (June 2011).

**Figure 15: Distribution of the Labor Force, by Employer**  
For wave 1(2010–11) and wave 2(2012–13)



Source: Estimates based on GHS 2010–11 and GHS 2012–13

Note: Population-weighted proportion. Questions used: “In your main activity/employment, what is the employer in this job?” combined with “Have you received wages, salary, or other payments either in cash or in other forms from this employment for this work?” and “In what sector is this main activity?”

### 3. A Brief Description of the Nigerian Private Sector

Maps 5 and 6 indicate that economic activities are concentrated in several enclaves, namely Lagos, Abuja, Kano, and Kaduna. The household survey indicates wage work in the North accounts for less than 2 percent of employment. These statistics suggest the existence of a polarized private sector, with micro and small firms scattered among several northern locations and medium and large firms located in the South, primarily in Lagos.

#### The informal sector

**Nigeria has approximately thirty-seven million enterprises.**<sup>19</sup> Of this total, approximately 40 percent are farm enterprises, while the rest are mainly informal non-farm household enterprises (NFEs). According to the SMEDAN (2014), there are approximately sixty-eight thousand small firms (10–49 employees) and forty-seven hundred medium firms (50–200 employees).

**Most households operate as non-farm enterprises (NFEs).** This rate is particularly high in the South West (74 percent) and North West (67 percent) zones, and with relatively high population densities, these two zones account for more than half the NFEs in the country. Almost

<sup>19</sup> SMEDAN and NBS (2012), SMEDAN and NBS Collaborative Survey: Selected Findings (2013). Our estimates based on the GHS survey give similar results; about 35.4 million firms.

all NFEs operate without a registration, and about 50 percent are operated from inside the household. In 2012–13, the average size of an NFE was 1.5 employees (including the owner).

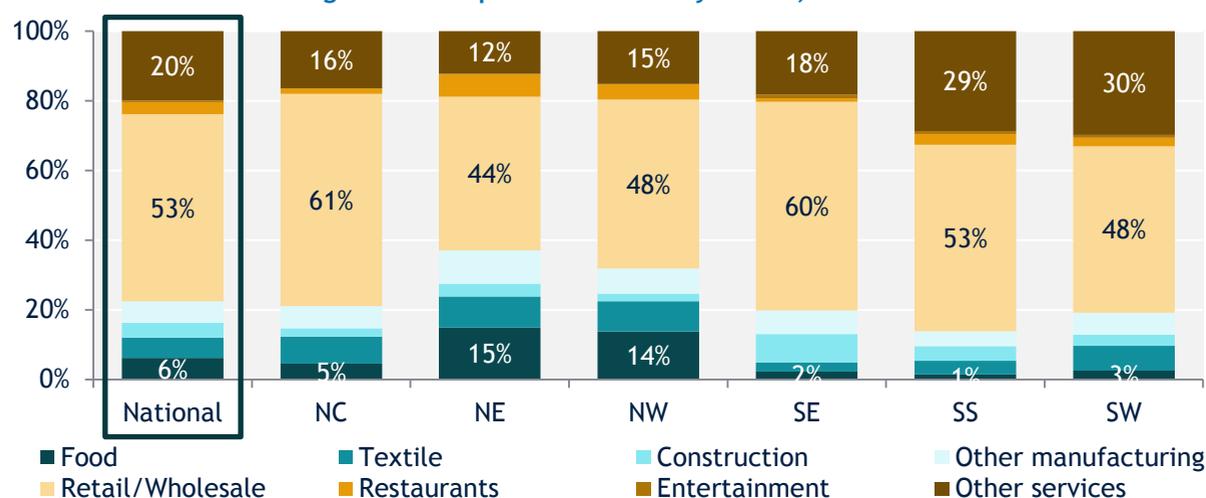
**Table 3: Key Statistics on Non-Farm Enterprises in Nigeria, 2012–13**

	National	North Central	North East	North West	South East	South South	South West
<b>Households owning a currently operating NFE</b>	63%	57%	60%	67%	49%	63%	74%
<b>Distribution of NFEs by zone</b>	100%	12%	12%	22%	11%	14%	29%
<b>NFEs registered</b>	5%	4%	5%	4%	5%	6%	5%
<b>NFEs operating outside household premises</b>	53%	57%	36%	34%	81%	60%	61%
<b>NFEs owned by females</b>	57%	66%	51%	50%	56%	55%	63%
<b>NFEs employing non-HH members</b>	9%	4%	10%	9%	4%	12%	12%
<b>Average number of employees</b>	1.5	1.3	1.6	1.5	1.3	1.7	1.7
<b>Microenterprises</b>	12%	7%	14%	11%	8%	15%	15%
<b>Distribution of the MEs by zone</b>	100%	6%	14%	21%	7%	17%	35%

Source: Estimates based on GHS 2012–13

**The composition of NFEs in Nigeria varies across geopolitical zones** (Table 3). Services NFEs, both wholesale and retail, comprise a substantial share of total NFEs across all zones. The manufacturing sector accounts for approximately 18 percent of total NFE activity; however, manufacturing plays a significantly larger role in the North West and North East, where it comprises 32 and 37 percent, respectively, of NFEs in these regions. A high proportion of these businesses produces food products. The South is mostly engaged in services, with a small proportion of firms operating in industry.

Figure 16: Proportion of NFEs by Sector, 2012–13

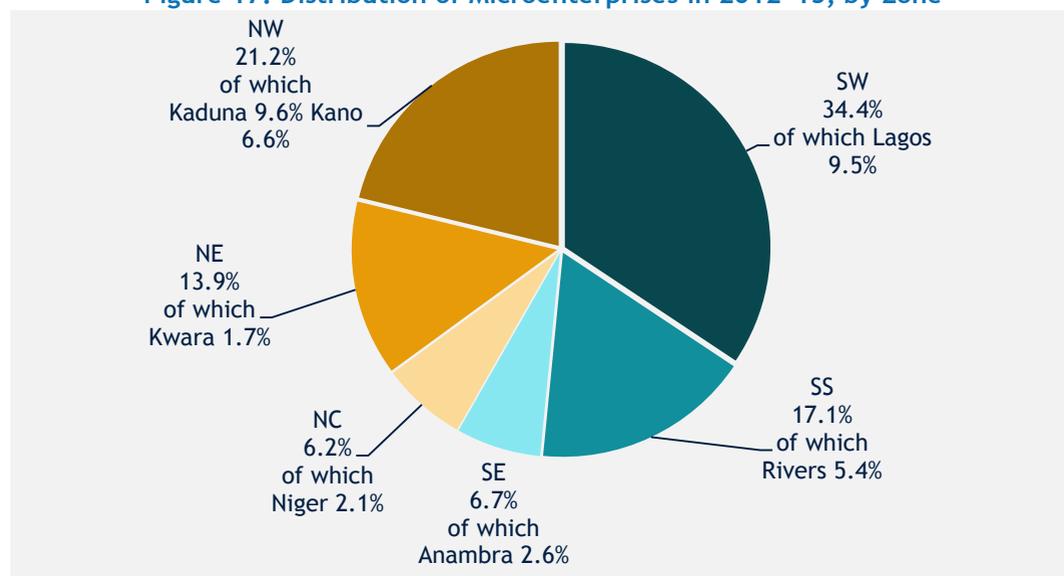


Source: Estimates based on GHS 2012–13

Note: Population-weighted proportion. *Food* is composed of Food and Beverage; *Textile* of Textile, Wearing apparel, and Leather; *Mining* of Mining of coal, Extraction of oil and gas, Mining of metal ores, Other Mining and quarrying, and Mining support service activities; *Retail/Wholesale* of Whole and retail trade of motor vehicles, Wholesale trade and retail trade; *Construction* of Construction of buildings, Civil engineering, Specialized construction activities, Architectural activities, Services to buildings and landscape; *Restaurants* of Hotels and restaurants.

**Most of the NFEs do employ workers that are household members and are not registered.** The household survey indicates that only 12 percent of NFEs hire workers and/or are registered—which we define hereafter as a Microenterprise (ME). Figure 17 below shows the distribution of these MEs by zone. We expect that this subpopulation of firms will grow faster than the traditional firms, a dynamic that receives further treatment in the next chapter.

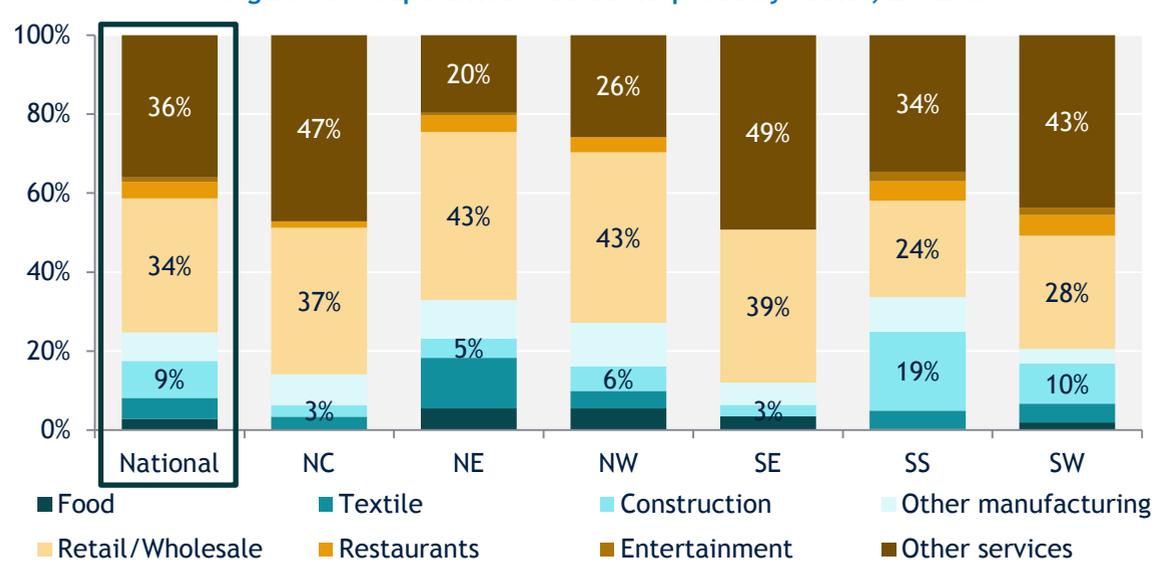
Figure 17: Distribution of Microenterprises in 2012–13, by Zone



Source: Estimates based on GHS 2012–13

**Microenterprises (ME) are more involved in construction, transportation, and personal services, and less involved in trading, than traditional NFEs (Figure 19).** Compared with the larger NFE population, MEs tend to be more focused in construction and other services and less focused in retail and wholesale. Regional disparities for MEs are also more pronounced. While the South South region appears to attract a greater share of construction MEs, the North East region receives a greater share of textile firms, which account for 13 percent of MEs in the region. The YouWin program also indicates that five sectors dominate: Food and Drinks (9.8 percent of the applications), IT and Telecommunications (9.4 percent), Clothing and Shoes (9.3 percent), Education (8.8 percent), and Food and Restaurants (8.2 percent).

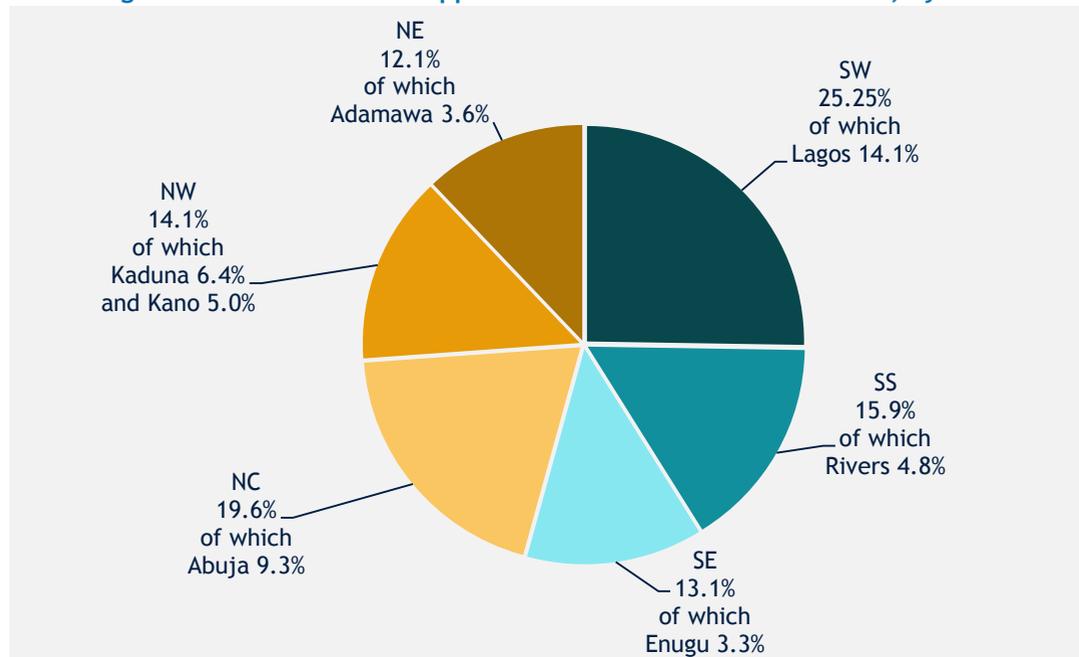
**Figure 18: Proportion of Microenterprises by Sector, 2012-13**



Source: Estimates based on GHS 2012–13

**The distribution of the applicants to the YouWin program gives an estimation of the density of entrepreneurs in the various states and geopolitical zones (Figure 19).** Of the total number of applications to the YouWin program, the greatest share came from the South West zone, primarily driven by Lagos. The next highest share was found in the North Central zone, primarily driven by applications from Abuja. In the North West zone, almost all applications came from Kano State and Kaduna State, suggesting that the private sector is concentrated in these two states. The three other zones (South South, South East, and North East) each account for 12 to 15 percent of the applications. The patterns highlighted by the distribution of YouWin applications align well with the patterns present in the household survey data on MEs.

Figure 19: Distribution of Applicants to Round Three of YouWin, by Zone



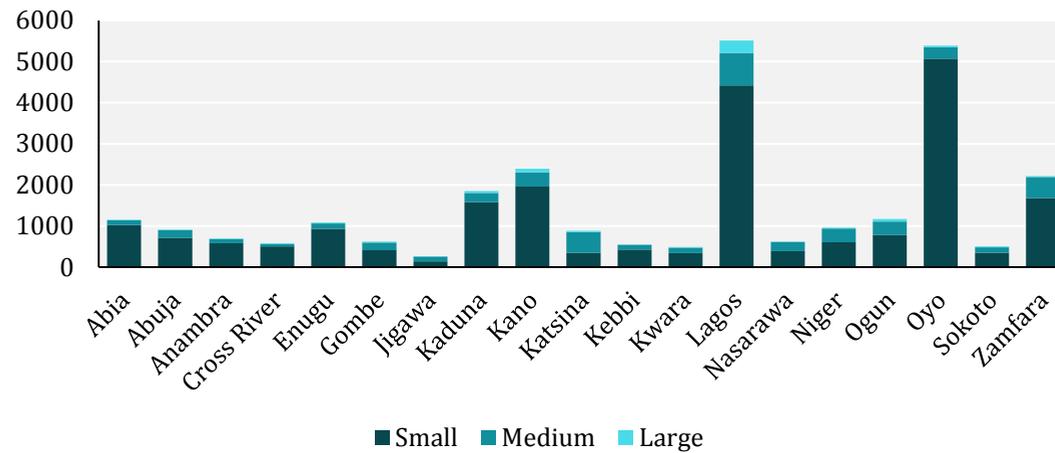
Source: YouWin program

Note: Excludes crop farming and animal farming

### The formal sector

**The contribution of the formal sector to employment is limited by the very small number of firms, particularly in Nigeria's poorest regions.** According to the National Bureau of Statistics and other local registries, about twenty-eight thousand small, medium, and large formal firms only operate within the top nineteen states in terms of private sector development (Figure 20). As shown in Figure 3, the majority of the formal firms are located in Lagos, Oyo, and, to a lesser extent, in Kano, Kaduna, and Zamfara states.

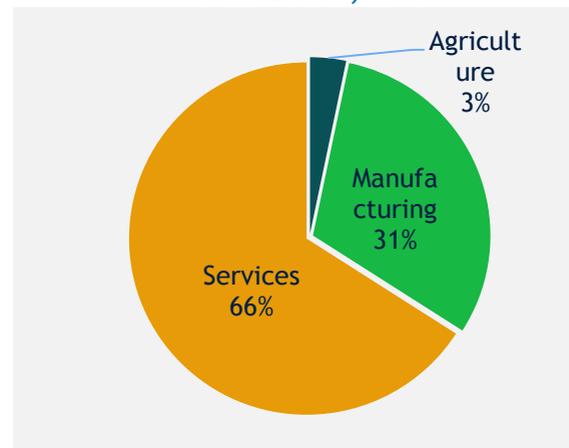
Figure 20: Number of Formal Firms in the Nigerian States, 2014



Source: World Bank universe of formal firms in Nigeria used for the Enterprise Survey (2014) based on NBS dataset and local and municipal registries

In this report, the formal private sector is defined as the firms that are registered with the Corporate Affairs Commission. **The formal sector is dominated by services**, representing two-thirds of registered firms, while only 3 percent of registered firms are in the agriculture sector, and about 20 percent are manufacturing firms. The small share of registered agriculture firms reflects the informal nature of this sector in Nigeria, largely dominated by smallholders. The services sector, for its part, is dominated by wholesale and retail trade. This indicates that the short-term investment required for services is more profitable than the long-term investment required for manufacturing.

Figure 21: Composition of the Formal Private Sector, 2010



Source: SMEDAN.

## Chapter 3: Non-Farm Enterprises and the Jobs Agenda

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### 1. Introduction

**The existence of NFEs in a developing economy is often an economic necessity, resulting from lack of better opportunities.** Almost 40 percent of NFE owners in Tanzania and the Republic of Congo reported in the household survey that their primary motivation for starting a business was the inability to find wage or salaried employment.<sup>20</sup> NFEs are an important source of revenue for many low-income households, in particular in rural areas,<sup>21</sup> and because this is unlikely to change in the near future, many international donors argue that this sector should be given more attention.

**The informal sector has been neglected by private sector development teams** for two main reasons. First, policymakers tend to believe that development of the formal sector creates better jobs (through greater security and better benefits), raises revenue for government institutions (through taxes), and produces more sustainable economic growth in the long run. Informality is thus seen as a suboptimal choice, and investing in that sector is considered to discourage informal firms from formalizing, which is detrimental to long-run economic growth. Second, NFEs do not seem to generate many wage jobs, which is the central goal of many private sector development projects. Most NFEs are operated by a single person and employ only household members. If some are able to generate sales growth, this rarely translates into additional hiring activity. By contrast, formal sector start-ups have a higher potential for generating employment.

**Recent work has started to support the integration of NFEs into the jobs agenda.** Some studies have looked at NFEs from an enterprise perspective, assessing the impediments to sales, employment, and productivity growth.<sup>22</sup> The identification of the drivers of NFE growth constitutes the first step toward more tailored and relevant policy recommendations to grow this

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<sup>20</sup> L. Fox and T. P. Sohnesen, (2012), *ibid*.

<sup>21</sup> S. Haggblade, P. Hazel, and T. Reardon, “The Rural Non-Farm Economy: Prospects and Poverty Reduction,” *World Development*, vol. 38. (10), (2010), 1429–1441.

<sup>22</sup> For the impact of wage subsidies on job creation: S. De Mel, D. McKenzie and C. Woodruff, “Wage Subsidies for Microenterprises,” *The American Economic Review, JSTOR*, (2010), 614–618. For productivity analysis of the non-farm enterprises: B. Rijkers and R. Costa, “Gender and Rural Non-Farm Entrepreneurship,” *World Development, Elsevier*, 40, (2012), 2411–2426; B. Rijkers, M. Söderbom, and J. L. Loening, “A Rural-Urban Comparison of Manufacturing Enterprise Performance in Ethiopia,” *World Development*, 38, 1278–1296; L. Fox and T. P. Sohnesen, “Household Enterprises in Sub-Saharan Africa: Why They Matter for Growth, Jobs, and Livelihoods,” *World Bank Policy Research Working Paper*, (2012); L. Fox and T. P. Sohnesen, “Household Enterprises in Mozambique: Key to Poverty Reduction but Not on the Development Agenda?” *World Bank Policy Research Working Paper (6570)* (2013); P. Nagler and W. Naudé, “Non-Farm Entrepreneurship in Rural Africa: New Empirical Evidence,” *World Bank Policy Research Working Paper 7066*, (2014). Most results suggest that rural NFEs operated by females are less productive than urban NFEs run by males.

sector. The same studies also suggest that NFEs can be profitable and serve as new sources of opportunities and revenues.

**The studies have shown that Nigeria’s NFE sector is large and dynamic**, which suggests that it will remain economically important in the medium term. Nigeria is reported to have about 37 million MSMEs, mainly composed of NFEs. Although the majority are run by a single person, collectively these firms account for about 40 percent of employment—a much higher share than in any other African country.<sup>23</sup> The number of firms entering and exiting Nigeria’s NFE sector is high. Between 2011 and 2013, the entry rate was 19 percent a year (compared to 20 percent in other African countries), and the exit rate was 15 percent.<sup>24</sup> Given its size and dynamism, this segment is likely to play an important role in the economy in the medium term and remain a substantial source of employment.

The literature related to NFEs in Nigeria indicates that productivity of these firms varies widely and depends on several key factors: the education, age, household size, gender, and religious affiliation of the owner, as well as community infrastructure and location. Overall, rural and female-owned enterprises are less productive than urban and male-owned enterprises. Rural isolation and low population density also contribute to lower NFE performance.

**More analysis is needed to better understand whether this sector can be integrated into the jobs agenda of private sector development projects.** New data, including data from the module on NFEs in the household surveys of 2010–11 and 2012–13, are now available for this purpose. These data show that the sector is rather heterogeneous, contrary to the prevailing view that all NFEs are driven by a single equation.<sup>25</sup> While the lower tail of NFEs are household enterprises operated by necessity, firms at the upper end act more like microenterprises that seek to increase productivity and generate jobs.

For ease of analysis, the enterprises considered in the household survey module can be categorized as follows: (a) *NFEs*—all enterprises that operate in nonagricultural sectors; (b) *household enterprises*—NFEs that do not employ any nonfamily worker and are not registered with the CAC; and (c) *microenterprises*—NFEs that employ at least one nonfamily member and/or are registered with the CAC.

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<sup>23</sup> A few examples: Senegal (31 percent), Cameroon (25 percent), Tanzania (16 percent), according to L. Fox and T. P. Sohnesen, “Household Enterprises in Sub-Saharan Africa, Why They matter for Growth, Jobs and Livelihoods,” *World Bank Policy Research Working Paper (6184)*, (2012).

<sup>24</sup> There are only small variations across zones. The lowest exit rate was observed in the North East (13 percent annually), where poverty rates are among the highest; while the highest exit rate was in the South West (17 percent annually), where the private sector is most developed. This result may suggest that some people may transition from self-employment to better jobs, in particular in the South West zone, where opportunities are greater. Self-employment may be an occupation while waiting for better opportunities.

<sup>25</sup> Fox and Sohnesen, (2012), *ibid*. This paper looks at the NFE sector from three different facets: “(a) a labor market lens recognizing household enterprises (HEs) as a major generator of new jobs; (b) an enterprise lens, viewing HEs as a profit-making activity started by a member of the household but recognizing that the birth, survival and growth of HEs might be just as dependent on household risks as enterprise risk; and (c) a livelihood lens, showing what income from HEs means to the livelihood portfolio of a household trying to maximize welfare and escape or avoid poverty.”

In 2013, approximately 12 percent of NFEs are MEs, while the rest are HEs. Unsurprisingly, a third of MEs are located in the more economically active South West zone (in particular in Lagos), followed by the North West (21 percent) and the South South (17 percent). The South West zone, along with the states of Kano and Kaduna, account for more than half the microenterprises in Nigeria.

**The remainder of this chapter is organized as follows:** The second section demonstrates that the NFE sector can actually be considered as a dual economy with different growth strategies, different players, and different patterns. The third section investigates the performance of each part of this economy and its drivers.

## 2. The NFE Sector, a Dual Economy

**The NFE sector does not appear to create jobs even when there is a substantial sales increase.** At the national level, NFEs reported a substantial increase in sales (about + 28 percent in nominal terms and + 24 percent in real terms, annually) between 2011 and 2013 but a small decline in employment growth (- 3.2 percent annually). Figure 22 reports the average annual sales growth and employment growth observed between the two household survey rounds (2010–11 and 2012–13) by geopolitical zone.

Figure 22: Annual Employment and Sales Growth Observed by Zone, 2011–2013

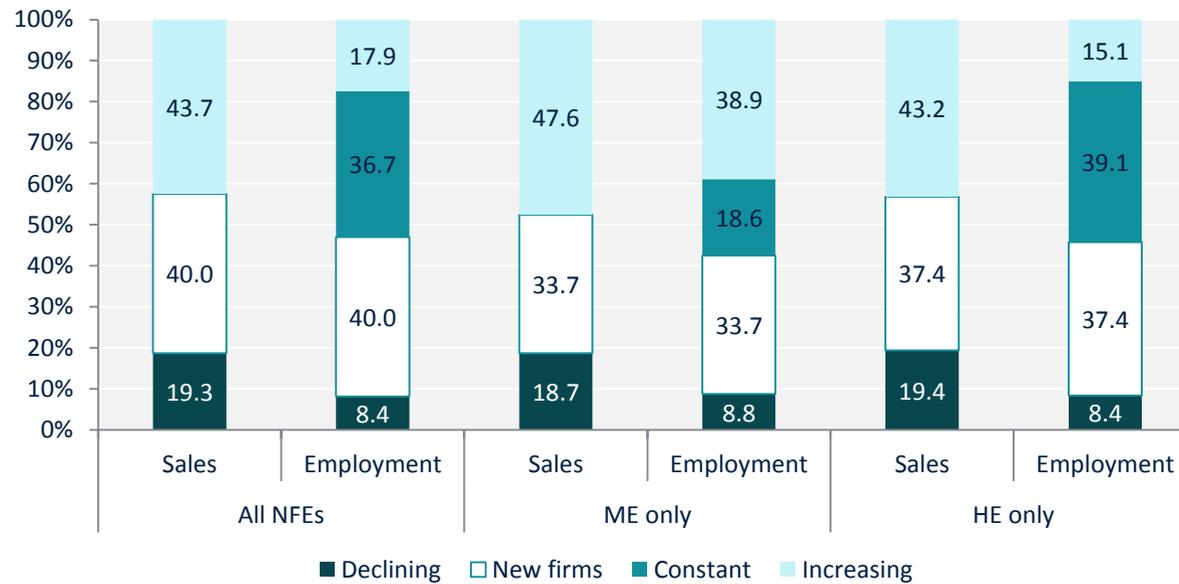


Source: Authors' calculations based on GHS 2010–2011 and 2012–13

Note: This graph corresponds to firms that were active during both waves of the GHS.

Although NFEs do not appear to contribute to wage work, considering HEs and MEs as two discrete groups yields a different conclusion (figure 23). While 44 percent of NFEs reported an increase in sales between 2011 and 2013, only 18 percent grew in employment (size) during this period. This pattern was the same for HEs; 43 percent reported an increase in sales, but only 15 percent reported an increase in employment. MEs, on the other hand, reacted differently to an increase in sales; 48 percent of MEs experienced an increase in sales, and almost 40 percent also reported an increase in employment.

Figure 23: Proportion of Firms Growing, Constant, or Shrinking, 2011–2013



Source: Authors' calculations based on GHS 2010–2011 and 2012–2013

**What are the differences between owners and households that operate HEs and MEs?** Data from both rounds of the household survey demonstrate that household, individual, and firm characteristics vary considerably between the two types of firms (see table 4). Owners that operate MEs have more education than HE owners (7.5 years vs. 5.7 years) and are more likely to be literate. MEs are also more likely to be operated by men. On average, men operate 39 percent of HEs and 65 percent of MEs. HE owners are more likely to report the NFE as their main economic activity (75 percent). There is a slight but statistically significant difference in the proportion of firms located in rural areas, with HEs more likely to be located in rural areas.

**MEs seem to invest more in human and physical capital and are more likely (59 vs. 49 percent) to be operated outside the household premises.** However, the data suggest no statistical difference across sectors between HEs and MEs. In terms of size and performance variables, the average ME sells significantly more than the average HE: 315,846 naira monthly for an ME (about US\$1400) versus 46,470 naira for an HE (about US\$200). MEs also seem to have more physical capital than HEs, and they employ significantly more workers (2.84 compared to 1.05). Further, MEs grow much faster; annual employment growth between 2011 and 2013 was 16 percent for MEs and only 5 percent for HEs.

**Table 4: Household and Firm Characteristics for Household Enterprises and Microenterprises**

		Mean	Mean (HE)–Mean (ME)
<b>HH and individual characteristics</b>			
Household size	HE	6.76	0.0231
	ME	6.74	
Male owner	HE	.39	-0.261***
	ME	.65	
Literate	HE	.61	-0.109***
	ME	.72	
Years of education	HE	5.74	-1.704***
	ME	7.44	
Main activity NFE	HE	0.75	0.049***
	ME	0.70	
Dummy for rural	HE	.62	0.0558***
	ME	.57	
<b>Firm characteristics</b>			
Operates in HH premise	HE	0.52	0.107***
	ME	0.41	
Exit rate	HE	.31	-0.0140
	ME	.32	
Manufacturing	HE	.22	-0.00687
	ME	.23	
Total workers	HE	1.29	-1.801***
	ME	3.09	
Workers (paid only)	HE	1.05	-1.789***
	ME	2.84	
Monthly sales (deflated)	HE	39804	-240005***
	ME	279809	
Monthly sales per paid worker (deflated)	HE	42216	-96693***
	ME	138909	
Monthly sales growth (deflated)	HE	.41	-0.0801
	ME	.49	
Employment growth	HE	-.051	-0.193***
	ME	.157	
Capital (deflated)	HE	66229	-533215.6***
	ME	599444	
Observations			8929

Source: Authors' calculations based on GHS 2010–11 and 2012–13

Note: *t* statistics in parentheses \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Is it common for HEs to transition to MEs?** The analysis here focuses on the firms that were operating in both 2011 and 2013. It indicates that 46 percent of the MEs in 2013 were already MEs in 2011, while 54 percent were operated as HEs. On the other hand, the vast majority of HEs (86 percent) operating in 2013 were already HEs in 2011, while only 14 percent were MEs in 2011. The data implies that HE owners work hard to become MEs—more than half were able to transition during the period—but, given the large amount of firms that remain as HEs, this transition is not straightforward. This finding has important implications for policymakers, suggesting that investing in the transition from HE to ME will pay off in the long term and will lead to more revenues and wage jobs.

**It is difficult to predict which household enterprises will be able to transition to microenterprises.** The policy question at hand is whether there exist factors that can encourage HEs to change their practices to become MEs. Table 5 presents the results from an econometric model looking at the drivers of enterprise status. The results suggest that experiencing a death or an injury in the household increases the probability of going from ME status to HE status. On the other hand, we find that HEs that suffer a shock to livestock or crops (flooding, pest invasion, poor rains) are more likely to transition to an ME. Accessing a loan can ease the transition, as HEs with access to loans from a financial institution are 12 percent more likely to become MEs. However, it is worth noting that the explanatory power of the model is very low; the model only explains 4 percent of the status change. These results suggest that external shocks explain only a fraction of the switch, and other factors not captured in the model may be more important. A new piece of literature considers that the character traits of the entrepreneurs, which are intrinsically hard to capture in this analysis, may hold significant weight in predicting success.<sup>26</sup> Further work is needed to better understand the role of entrepreneurs' traits vis-à-vis other external factors.

**Table 5: Transitioning from a Household Enterprise to a Microenterprise**

	Probability of transitioning from HE to ME
Married	-0.00364
Log number of children below five	0.000474
Log sales	0.00195
Does household own a mobile telephone?	0.0304
HH suffered health/death shock	-0.0566***
HH suffered economic shock	-0.0294
HH suffered from dwelling, livestock, and crop shock	0.0426*
EA has a bank	-0.00860
Dummy for having a loan from a formal institution	0.128*
r <sup>2</sup>	0.0364
N	5501

Source: The results correspond to an OLS with fixed effect. Regressions are weighted. Standard errors are robust and clustered at the enumeration area level.

Note: *t* statistics in parentheses \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$  Model explains only 4 percent of status change.

Overall, our findings suggest that HEs are operated by the owner alone or, in some cases, with unpaid household members. Their primary growth strategy is to increase sales in order to raise household income, not necessarily to hire more employees. From a policy perspective, supporting these firms will lead to an increase in revenues for the household. Supporting MEs, on the other hand, may lead to higher return on investment as these firms will not only increase revenues for the owner but also generate new jobs. MEs do contribute to wage jobs, as increased

<sup>26</sup> Marcel Fafchamps and Christopher Woodruff, "Identifying Gazelles: Expert Panels vs. Surveys as a Means to Identify Firms with Rapid Growth Potential," (2014); M. Glaub, et al. (2014 in press), "Increasing Personal Initiative in Small Business Managers/Owners Leads to Entrepreneurial Success: A Theory-Based Controlled Randomized Field Intervention for Evidence Based Management," *Academy of Management Learning & Education*; Suresh De Mel, David McKenzie and Christopher Woodruff, "Who are the Microenterprise Owners? Evidence from Sri Lanka on Tokman versus De Soto." *International Differences in Entrepreneurship*. University of Chicago Press, (2010), 63–87; Simeon Djankov, et al. "What Makes a Successful Entrepreneur? Evidence from Brazil." *Center for Economic and Financial Research (CEFIR) in its series Working Papers with w0104* (2007).

sales are more likely to translate into an increase in employment. From a policy perspective, the objective here is to increase their productivity and help them to grow.

### 3. Explaining Firm-Level Performance

#### An overview of the NFE performance

**Firm-level performance can be measured in several ways.** In this section, results are presented for two performance measures: labor productivity (revenues per worker) and total factor productivity (TFP). Box 1 provides detailed information on the definition of labor productivity and total factor productivity.

#### Box 1: Measures of Firm Performance

**Labor Productivity:** Value added per worker is a basic measure of labor productivity. It is the value of the goods and services that the firm produces less the cost of the raw materials (such as iron or wood) and intermediate inputs (such as engine parts or textiles) used to produce the output, divided by the number of paid workers in the firm, including paid household members.

Labor productivity is higher for firms that produce more output with less raw material and fewer workers. Differences in labor productivity can result from differences in technology, organizational structure, worker skills, management ability, or the amount of capital that the firm uses. Because labor productivity does not take the use of capital (machinery and equipment) into account, it will generally be higher in firms that use capital in place of labor (firms that are capital intensive).

**Total Factor Productivity:** Total factor productivity is calculated here based on the Levinsohn and Petrin (2003)<sup>27</sup> model, with the value of transport costs used as a proxy for unobserved productivity shocks. The production function is estimated for relevant sector (manufacturing or services), and estimations using a stochastic frontier model are used for robustness checks. In the equation below, we use production function estimates to construct measures of plant-level productivity. Productivity for a firm  $i$  in the sector  $j$  is calculated as

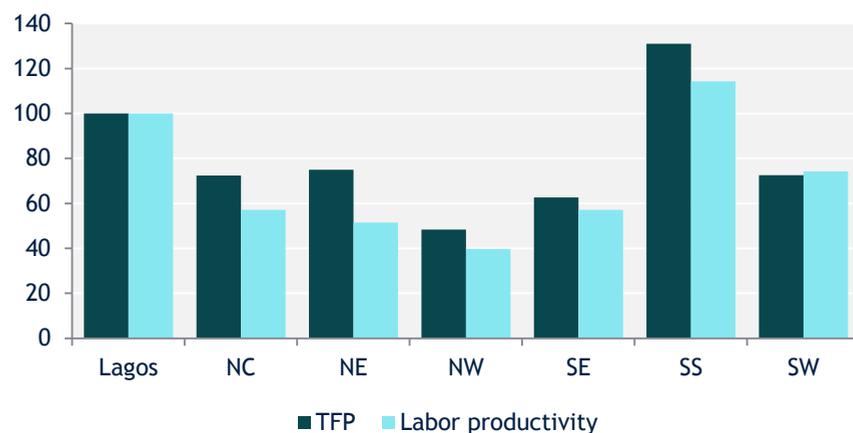
$$p_{it} = \exp(y_{it} - b_{lj}l_{it} - b_{kj}k_{it}),$$

Where the parameter estimates  $b_{lj}$  and  $b_{kj}$  are taken from the production function estimates.

**Firms located in Lagos and in the SS zone are far more productive than other regions in terms of both TFP and labor productivity** (Figure 24). The NW zone exhibits by far the lowest productivity (about 50 percent of that of the median firm in Lagos), while the SE, NC, and NE zones all possess similar levels of productivity below that of the median firm in Lagos.

<sup>27</sup> J. Levinsohn and A. Petrin, “Estimating Production Functions Using Inputs to Control for Unobservables,” *The Review of Economic Studies*, Oxford University Press, 70, (2003), 317-341.

Figure 24: TFP and Labor Productivity in Nigerian Zones, Compared to a Median Firm in Lagos



Source: Authors' calculations based on GHS 2012–13

**Labor productivity in NFEs is fairly similar for manufacturing and services and has increased substantially over time.** Figure 25 and Figure 26 depict the level of productivity in services and manufacturing across two survey rounds (wave 1 and wave 2). The graph suggests that revenues per worker are higher in services than in manufacturing. The opposite effect is observed for TFP, although firm performance appears much more dispersed in this sector than in services. This graph also shows an increase in both labor and total factor productivity over time.

Figure 25: Log of Real Sales per Paid Worker (US\$)

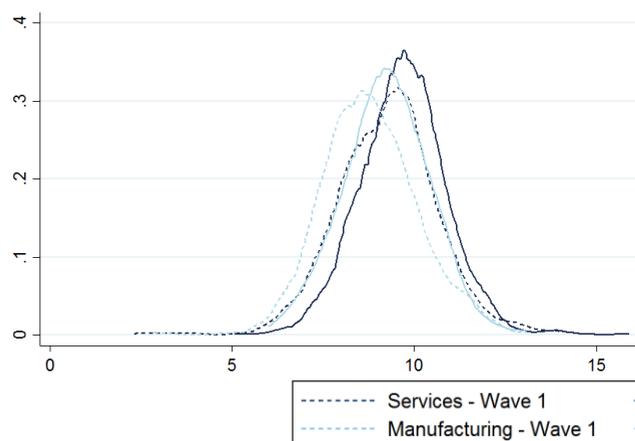
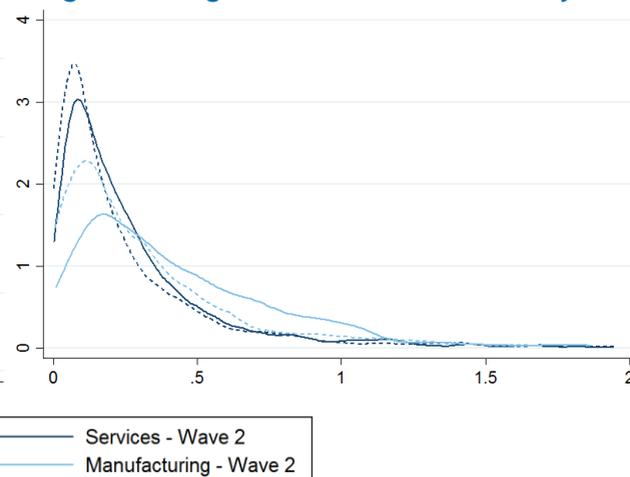


Figure 26: Log of Total Factor Productivity



Source: Authors' calculations based on GHS 2010–11 and 2012–13

Note: Wave 1 represents GHS 2010–11; Wave 2 represents GHS 2012–13

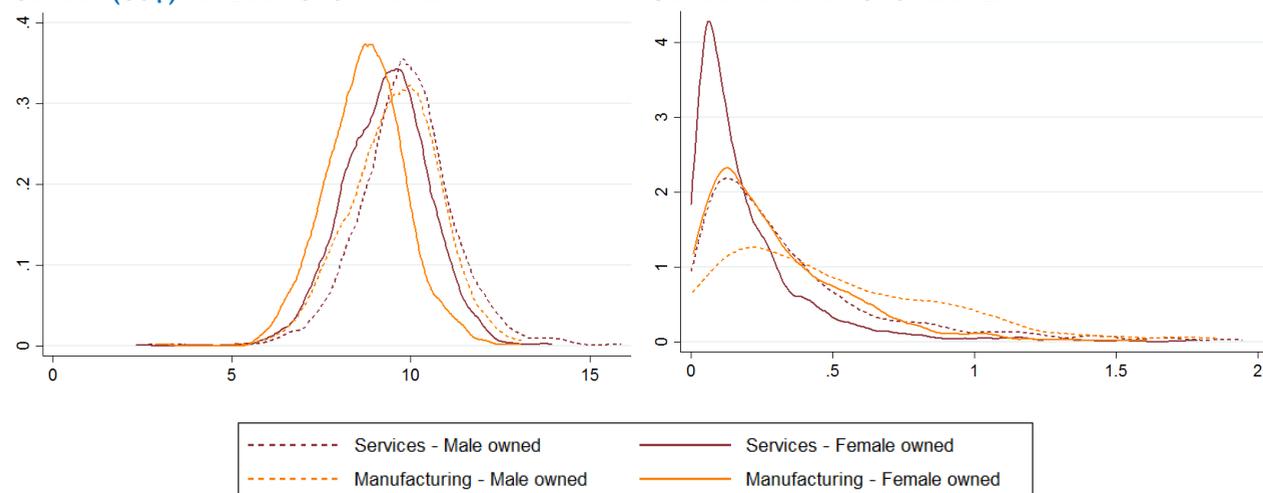
**Women-owned enterprises fare worse than male-owned enterprises.** There is a wide array of literature on the existence of a gender gap in NFEs, in particular in agriculture<sup>28</sup> and

<sup>28</sup> See M. Goldstein and C. Udry, “The Profits of Power: Land Rights and Agricultural Investment in Ghana,” *Journal of Political Economy*, 116(6), (2008), 981–1022. Also see S. Horrell and P. Krishnan, “Poverty and

entrepreneurship sectors.<sup>29</sup> In most countries, female-headed firms are smaller and less productive. Figure 27 and figure 28 present the gender distribution of firm performance. Revenues per worker, as well as TFP, are lower for female-headed NFEs than for those headed by males. The gap is more important in the manufacturing sector than in services.<sup>30</sup>

**Figure 27: Log of Sales per Paid Worker, by Gender (US\$) for Both GHS Rounds**

**Figure 28: Log of Total Factor Productivity, by Gender for Both GHS Rounds**



Source: Authors' calculations based on GHS 2010–11 and 2012–13

**MEs fare better in terms of TFP but worse in terms of revenues per worker.** Figure 29 and Figure 30 depict labor productivity and TFP for MEs and HEs. HEs seem to have higher revenues per worker in both manufacturing and services compared to MEs. Figure 30 suggests the exact opposite and reinforces the idea that these two groups of firms possess different motivations and growth strategies and should, therefore, be analyzed differently.

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Productivity in Female-Headed Households in Zimbabwe,” *Journal of Development Studies*, 43(8), (2007), 1351–1380.

<sup>29</sup> M. Hallward-Driemeier, “Enterprising Women: Expanding Economic Opportunities in Africa,” Washington, DC: World Bank—AFD, (2013).

E. Bardasi, S. Sabarwal, and K. Terrell, “How Do Female Entrepreneurs Perform? Evidence from Three Developing Regions,” *Small Business Economics*, 37, (2011), 417-441.

Nagler P. and Naudé W. (2014), “Labor Productivity in Rural African Enterprises: Empirical Evidence from the LSMS-ISA, IZA Discussion Paper 8524, Institute for the Study of Labor (IZA).

<sup>30</sup> Rijkers and Costa (2012), *ibid.*

Figure 29: Log of Sales per Paid Worker, by Type of NFE (US\$) for Both GHS Rounds

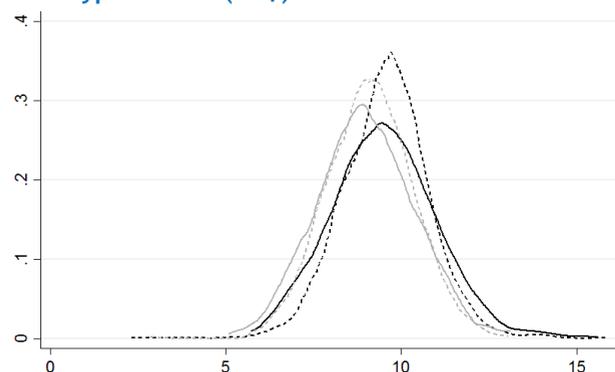
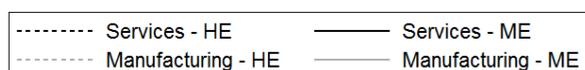
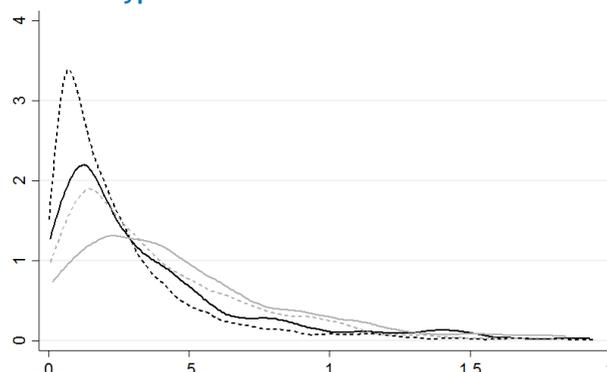


Figure 30: Log of Total Factor Productivity, by Type of NFE for Both GHS Rounds



Source: Authors' calculations based on GHS 2010–11 and 2012–13

As noted above, HEs and MEs have different survival and growth strategies. The objective of HEs is to increase sales and household income, while the objective of MEs is to become a functioning private sector firm and create wage jobs. As a result, the performance of HEs is best measured by sales per worker, while the best measures of performance for MEs are TFP, sales per worker, and employment growth.

### Possible determinants of firm-level performance

**What can explain the variations of NFE performance in Nigeria?** Different factors are tested in the following sections: owner's characteristics (gender, marital status, age, years of education, whether the primary occupation is self-employment in a NFE); household characteristics (number of children below five years old, owning a television as a proxy for wealth, whether the household had suffered from a shock in the past five years); business characteristics (whether the firm employs a non-HH member, is formally registered, operates in the household premises); a time variable (2010–11 or 2012–13); and Investment Climate variables.

**The household survey conducted in 2012–13 asked households to choose a maximum of three obstacles** that prevent their business from operating and/or growing. As shown in Figure 31, 50 percent of the enterprises identified transport, 48 percent identified finance, and 40 percent identified electricity as the most important obstacles to growth. Access to water and telecommunications were also considered significant obstacles for NFEs, though far behind the three most important ones. The three most important constraints are discussed below. Figure 32 confirms the importance of finance, transportation, and electricity, and demonstrates their relative importance among the major economic regions. The northern region reports transport as its key constraint, illustrating regional difficulties with market access; the Lagos region reports electricity as its key constraint, illustrating fierce competition for power supply in the capital

city; and the southern region reports access to finance as its key constraint, illustrating a growing appetite for investment in this region.

Figure 31: Biggest Obstacles Faced by NFEs

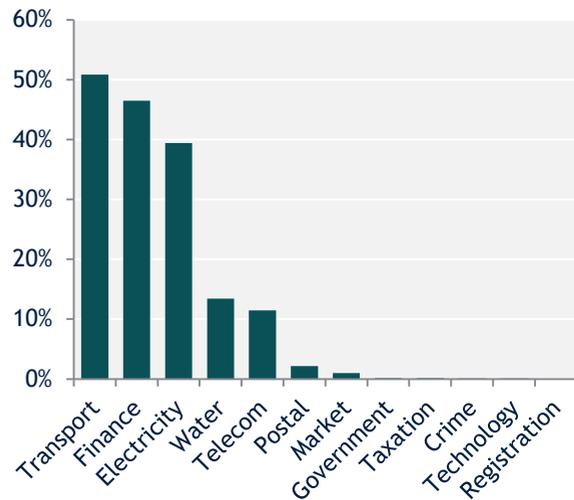
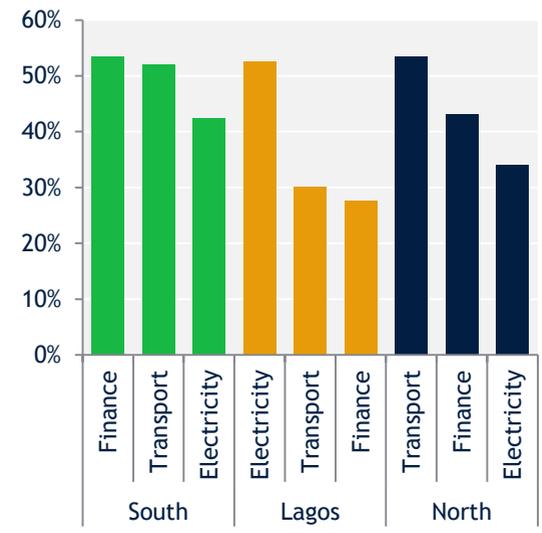


Figure 32: Top Three Obstacles by Zone

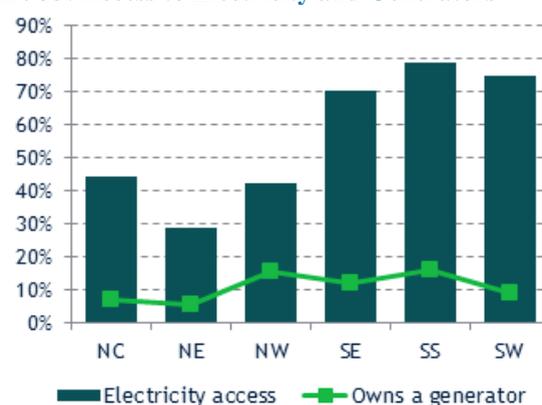


Source: Authors' calculations based on GHS 2012–13

**Finance. Very few NFEs have access to external finance.** Approximately 70 percent of NFEs reported using household savings as their main source of start-up capital. Households complement their own funds with money from relatives and friends (only 12 percent of the main source of capital but 41 percent of the second source of capital), followed by esusus and adashis (20 percent of the second source), and proceeds from family farms and NFEs (each accounting for 10 percent of the second source). Between 2010–11 and 2012–13, only 5 percent of NFEs tried to obtain credit from a bank or formal financial agency. This may explain why only several NFEs reported difficulty with borrowing from financial institutions, while many reported difficulty borrowing from friends and relatives. The lack of formal borrowing may be due in part to the unequal distribution of financial institutions across the country; only several locations where the survey was administered have a financial institution, and the proportion of rural locations with a financial institution is considerably lower than in urban areas (16 percent compared to 48 percent). Commercial banks and/or microfinance institutions are physically present in large urban centers, in particular in the north where more than half of the urban centers report having a financial institution. In contrast, financial institutions do not serve rural areas, in particular in the North. The proportion of rural locations with a commercial institution is about 10 percent in the north compared to 20 percent in the South.

**Electricity. Access to electricity is very unequal within Nigeria.** The GHS dataset suggests that electricity access is high in the south, where about 75 percent of the households have access. In contrast, as shown in Figure 33, the proportion of households with access to electricity in the northern states is rather low. In the NW zone, some households cope with the absence of electricity by using generators and/or engaging in activities that do not require electricity.

**Figure 33: Access to Electricity and Generators**



Source: Authors' calculations based on GHS 2012–13

### Drivers of NFE performance

This section investigates the drivers of revenue per worker for both HEs and MEs, as well as TFP and employment growth for MEs. Results from the econometric estimations are presented in Annex 1. The core model includes owners' characteristics, household characteristics, firms' characteristics, and sector dummies. We tested selected IC constraints at the enumeration area or at the state level.<sup>31</sup> However, most of these IC constraints are difficult to assess.<sup>32</sup> For that reason, we also tested different spatial variables, such as a state dummy and a zone dummy. The underlying assumption is that investment climate may be inherent to a particular administration and/or region.

### Increasing Revenues for Household Enterprises

**This section investigates the drivers of revenue for HEs. The dependent variable is the log of sales per worker in US dollars (2010).**

**Level of education generates a positive return on sales.** Most owners of HEs have little formal schooling (on average 6.3 years), which may confirm the fact that most people engage in self-employment because of a lack of opportunity in the formal sector. Adams et al. (2013)<sup>33</sup> indeed finds that formal sector workers have, on average, thirteen years of education, compared with fewer than nine years for workers in the informal sector. However, the predicted probability

<sup>31</sup> We tested the following investment climate constraints: (a) transportation: time travel for a kilometer by state and by sector (rural and urban); (b) access to market: having a market in the enumeration area, distance to a city with more than twenty thousand inhabitants, being in a rural area; (c) access to finance: having a financial institution (commercial bank or microfinance institution) in the enumeration area; (d) electricity: mean share of households having access to electricity by state; and (e) quality of the workforce: mean share of literate household at the state level and mean share of people with secondary education.

<sup>32</sup> To avoid endogeneity at the firm level, most investment climate indicators are measured at the state level. Endogeneity can be a serious problem in investment climate analysis because the causality is not clear.

<sup>33</sup> A. Adams, S. Johansson, and S. Razmara, "Improving Skills Development in the Informal Sector: Strategies for Sub-Saharan Africa," *Directions in Development*, Washington DC, (2013).

of being in the informal sector is relatively flat and does not increase or decrease with education (Adams et al. 2013), suggesting that the likelihood of engaging in an HE does not seem to be directly correlated with education. On the other hand, an HE operated by an owner with secondary or tertiary education will earn, respectively, 28 and 42 percent more than an HE operated by an owner without any education or with primary education only. The results suggest that education has influence on the revenues of the HE.

**Female-owned HEs earn far less than HEs owned by men.** Compared to an HE operated by a single man, sales per worker are about 30 percent lower for a single woman and 40 percent lower for a married woman. This confirms the findings of Rijkers and Costa (2012) that NFEs operated by women are less performant. The higher the number of children below five years old, the lower the revenues per worker when the owner is a woman. This suggests that a female-owned HE may be less profitable because women have to take care of children. However, HEs run by married men seem to perform about 30 percent better than those run by single men.

**HE owners who also engage in other occupations** lower the revenues for the household. Owners who operate an HE as their main occupation raise household revenues by about 10 percent.

**The location and the wealth of the household have influence.** The results suggest a negative correlation between revenues per worker and distance to the closest large city: for example, HEs operating in rural areas at a distance from an urban center earn less. Owning a television (a proxy for wealth) increases revenues per worker by 30 percent, suggesting that wealth is an important factor in the success of an HE. The death of a family member or an economic shock substantially lowers HE revenues.

**Turning to IC constraints, most of the IC variables are not statistically significant.** However, adding state dummies increases the explanatory power substantially (from 26 percent to 37 percent), thereby suggesting that there are some peculiarities specific to the states that are not captured in the IC variables that were computed for the purpose of this analysis.

### *Increasing Performance for Microenterprises*

**This section summarizes the results for MEs: revenues per worker, TFP, and employment growth.** Results from the econometric estimations are presented in Annex 1.

**The findings are more limited for MEs.** It should be noted that inferences about the impacts of the set of variables on ME performance are further impeded by the small size of the sample. The findings can be summarized as follows:

- Most of the firm-level variation is explained by owner and household characteristics;
- There is a positive return on tertiary education. We find that sales per worker is positively correlated with having a tertiary education;
- There is no more gender gap. We find no systematic and negative coefficient for female-owned firms, suggesting that the gender gap is less crucial for this segment of firms;

- We found no evidence that IC constraints have an effect on ME performance. However, adding a state dummy substantially increases the explanatory power, in particular for employment growth. Lagos and Rivers seem to have a more conducive business environment than other states when it comes to increased sales per worker for MEs. This may be linked to the presence of a port in both states and therefore better access to inputs, which is not captured in this survey.

#### 4. Main Findings

**This chapter is a first attempt to understand NFEs, which have been understudied from a private sector development perspective.** The analysis suggests that the NFE sector, long considered to be neutral in terms of employment, may potentially create wage jobs. NFEs appear to be a dual economy, with the majority operated by a single person (HEs), and a small fraction hiring workers who are not members of the household (MEs). While both segments experienced an increase in sales over the period 2011 to 2013, only MEs managed to grow in size and hire more workers. More research is needed to understand and define this group of firms that is able to generate wage jobs.

**What can we say about these MEs?** They are clearly larger in size, sales, and capital use. They also appear more dynamic, with higher employment growth. Looking at the characteristics of the owner, it seems that males with higher education are more likely to operate those firms. While shocks may push households to transition from HE to ME status, overall external factors explain only a small fraction of this transition. More explanatory power may be derived from other external factors, household backgrounds (not captured in the model), or personality traits of the owner that are difficult to measure with a household survey. In addition, it is difficult to interpret the results related to firm performance given the small size of the sample. However, it seems that most of the variations can be explained by owner and household characteristics, as well as by a state dummy, which can identify different investment climates specific to each region.

## Chapter 4: Performance of the Formal Sector and Investment Climate

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### 1. Introduction

**This chapter relies mainly on data from the 2014–15 Nigeria Enterprise Survey,** collected in Nigeria between April 2014 and February 2015 under an initiative of the World Bank. This survey covers a total of nineteen states that were grouped into four regional categories: Lagos; Kano/Kaduna; other southern states (Abia, Abuja, Anambra, Cross River, Enugu, Ogun, Oyo); and other northern states (Gombe, Jigawa, Katsina, Kebbi, Kwara, Nasarawa, Niger, Sokoto, Zamfara). A total of 2,685 formal firms were interviewed in various sectors (manufacturing, construction, services, transport, storage, and communication sectors).<sup>34</sup>

This chapter first presents the performance of the private sector in Nigeria between 2011 and 2014. It then turns to the main constraints highlighted by the private sector and shows how Nigeria compares to other African countries (Angola, Côte d’Ivoire, Ethiopia, Ghana, and Kenya) and the BRICS economies. The second half of the chapter focuses on the productivity of the manufacturing sector, specifically the importance of the business environment in explaining Nigeria’s low productivity when compared to peer countries. The chapter also includes a special section, *Focus on the Labor Market in Nigeria*, based on the last Enterprise Survey (2014–15).

### 2. The Private Sector, Declining but Hiring

**The manufacturing sector has been in recession in recent years while services are stagnant.** Between 2011 and 2014, the average manufacturing firm had sales growth of -5.3 percent (see Figure 34). The large decline in sales is not just due to inflation—the average firm reported that sales dropped by 1.3 percent in nominal terms over this period. The largest annual drop in sales between 2011 and 2014 was observed in the chemicals sector (-47 percent), followed by the textile industry (-19 percent), the food and beverage industry (-13 percent) and construction materials (-12 percent) (see table 6). Growth was positive in metals and machinery, and paper and publishing. In the service sector, growth was overall positive (although close to stagnant), with the exception of construction, hotels and restaurants, and transportation. Sales also fell drastically in retail trade.

**The northern part of the country shows a net decline in sales, while the South grows or remains stagnant.** The average firm reported negative sales growth in three of four regions in Nigeria that the survey covered (Figure 34). Negative growth was most severe in the North. Average sales growth was -15.1 percent in Kano and Kaduna and -13.7 percent in the other northern states. By contrast, sales growth was close to zero in the other southern states (driven by Abia, Cross River, and Ogun states) and positive in Lagos. In these two regions, the sales in nominal terms were positive.

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<sup>34</sup> Note that this definition excludes the following sectors: financial intermediation, real estate and renting activities, and all public or utilities sectors.

**Despite declining sales growth, employment grew by an average of 6.0 percent a year between 2011 and 2013.** Metals and machinery and the garment industry were the most dynamic industries in terms of employment growth (15 and 13 percent, respectively, during the period). The number of upsizing firms (28 percent) was higher than the number of downsizing firms (12 percent). The vast majority of firms (60 percent) report an unchanged number of employees despite a decline in sales.

**Interestingly, firms in Lagos reported slower employment growth than in other regions.** This may be explained by two factors. First, firms in Lagos are larger (48.7 employees on average) compared to firms in other regions (16.1 in Kano and Kaduna, 14.3 in the other northern states and 16.3 in the other southern states). As firms get larger, the same number of hired workers will yield a smaller employment growth. In other words, the number of newly hired employees is similar between firms located in Lagos and the ones operating in other states. Second,

Figure 35 confirms the relative dynamism of the northern part of the country compared to the south in terms of job creation, with a higher number of firms both upsizing and downsizing.<sup>35</sup> This finding also suggests that firms in the north tend to downsize more frequently than firms in the South.

**Figure 34: Sales Growth (in Real Terms) and Employment Growth between 2011 and 2014**



Source: Authors' calculation based on data from Enterprise Survey 2014–15

Note: Employment growth for firms for which sales growth is available.

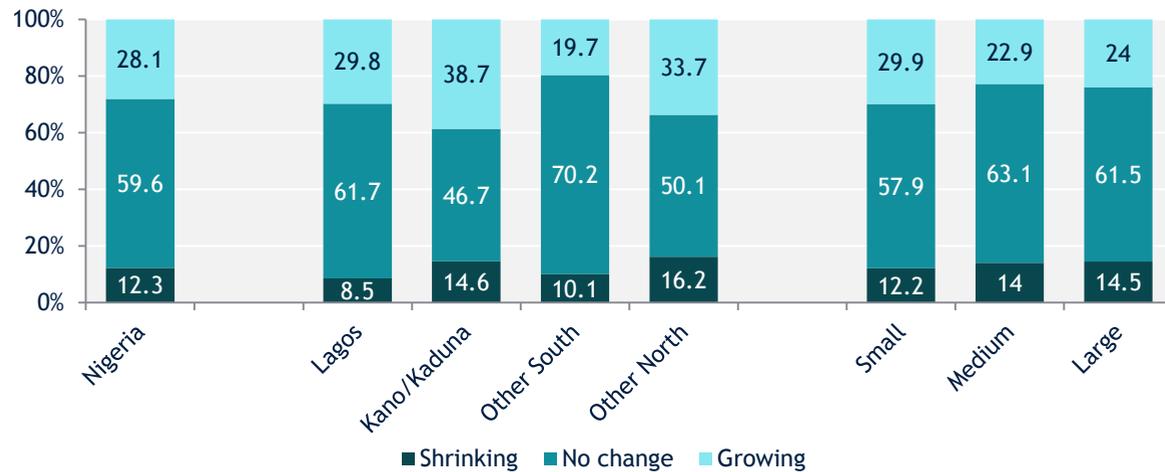
**Small firms reported slower declines in sales than did larger firms.** The average small firm with fewer than ten workers in 2011 reported sales growth of -4 percent.<sup>36</sup> In comparison,

<sup>35</sup> Because growth rates vary considerably over the business cycle and because the surveys in different countries occurred in different years, we do not compare growth rates in Nigeria with growth rates in the comparator countries.

<sup>36</sup> Small: five to nineteen employees, medium: twenty to ninety-nine employees, and large: more than one hundred employees.

the average medium-sized and large firms reported sales declines by -17 and -38 percent over the same period (see table 6). Moreover, although small firms reported employment growth, medium-sized and large firms reported negative employment growth. One concern about these comparisons is survivor bias. That is, small firms with fewer than twenty workers might be forced to close when sales drop. Large firms, with greater financial resources and possibly better access to credit, might find it easier to cope with falling sales.

**Figure 35: Percentage of Firms Reporting Shrinking, Unchanged, or Growing Workforce during the Last Financial Year (2014)**



Source: Authors' calculations based on data from Enterprise Survey 2014–15

**Firms with ties to international markets tended to fare better than purely domestic firms.** For exporters, the average firm reported sales growth of 0.9 percent from 2011 to 2013. In comparison, the average nonexporter reported sales growth of -12.1 percent. Exporters also reported faster employment growth than nonexporters. Foreign-owned firms, however, reported slower growth than domestic firms.

### 3. The Business Environment in Nigeria

The Enterprise Survey also collects information on the investment climate—including topics such as infrastructure, access to finance, taxes, competition from the informal sector, and corruption. Firms are asked two kinds of questions in the surveys: (i) subjective questions about what managers see as the major obstacles that their firms face; and (ii) objective questions such as production lost due to power outages, whether the firm has a loan or overdraft facility, and the amount of time managers spend dealing with government regulations. The report uses both types of information—and supplementary information from other sources—to assess constraints to enterprise operations and growth in Nigeria, and to compare constraints in Nigeria with constraints in the comparator countries. Although subjective data has many problems, it provides

a useful starting point for any analysis of the investment climate.<sup>37</sup> Business owners are likely to have a better idea about the constraints that they face than others will.

### Main constraints faced by business owners

**Firm managers are most concerned with electricity, corruption, and access to finance (48, 45, and 33 percent, respectively).**<sup>38</sup> Far fewer managers reported service problems with other areas of the investment climate, including political stability, access to land, tax rates and administration, and other areas of regulation (Figure 36). When asked about their top three constraints, the results remained the same—access to finance (30 percent of firms), electricity (27 percent), and corruption (13 percent). None of the other constraints were reported by more than 6 percent of firms.

**Table 6: Sales and Employment Growth across Nigeria.**

	Employment Growth	Sales Growth
Manufacturing	9.7	-5.9
Retail trade	10.5	-7.8
Other services	7.7	0.3
Textiles	-3.6	-19.2
Garments	13.5	-7.3
Food and beverage	5.3	-12.6
Chemicals	4.0	-46.7
Construction materials	4.3	-12.4
Wood and furniture	8.9	-2.9
Metal and machinery	15.2	5.3
Paper and publishing	12.9	22.1
Retail trade	10.5	-7.8
Hotels and restaurants	6.5	-0.4
Other services	14.5	39.2
Constructions	-2.6	-9.5
Transportation	11.1	-3.6
Small (5–19 workers)	12.6	-4.4
Medium (20–99 workers)	-4.7	-16.9
Large (100+ workers)	-10.1	-38.4
Exporters	11.4	0.9
Nonexporters	9.9	-12.1
Foreign owned	1.0	-34.8
Domestic	9.8	-2.0

Source: Authors calculation based on data from World Bank enterprise surveys

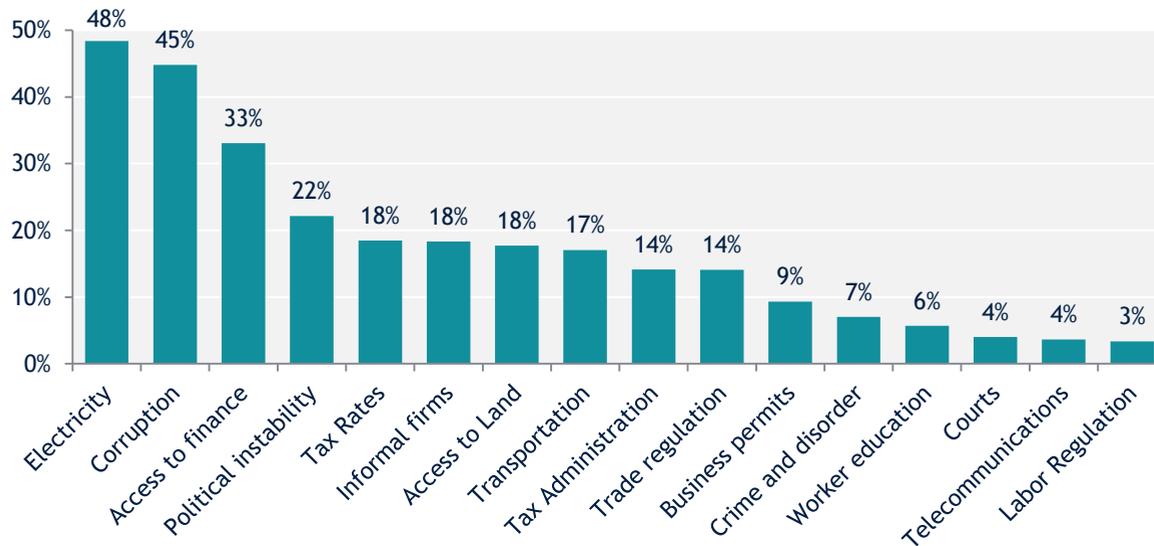
<sup>37</sup> See Clarke (2011a), Kaplan and Pathania (2010), or Gelb and others (2006) for general discussions of the problems with perception-based data in the enterprise surveys.

<sup>38</sup> Managers were asked to rate each areas on a 5-point scale ranging from 0 (no obstacle) to 1 or 2 (moderate or minor obstacle) to 3 or 4 (very serious obstacle).

Note: Size categories are based on number of workers in 2011 (initial size). Sectors and groups with fewer than fifty observations are omitted from table. The numbers presented in this table are for all firms for which the information is available.

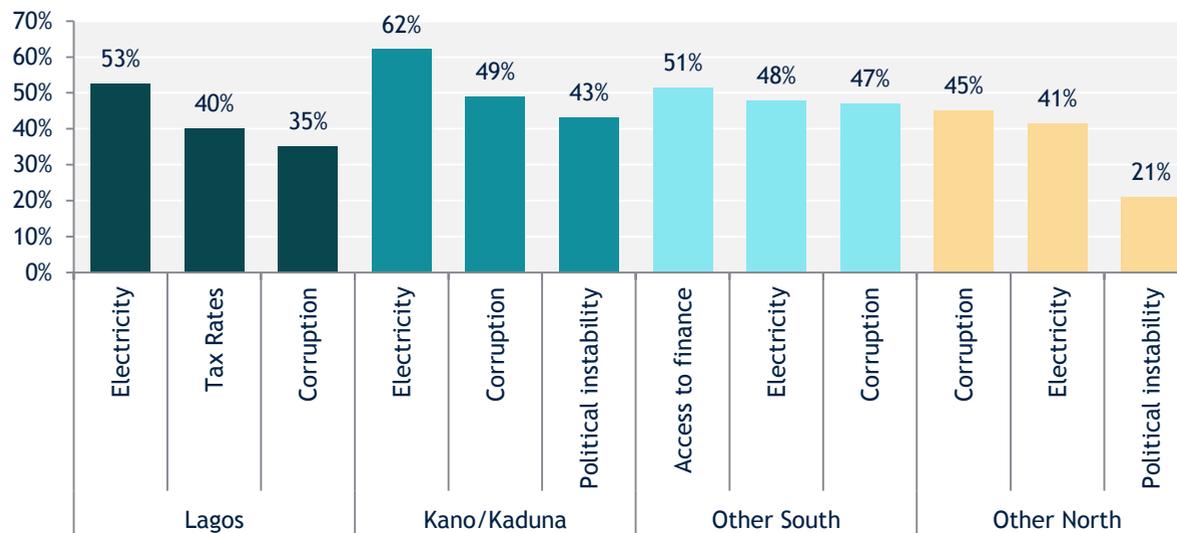
**Electricity and corruption are problems throughout Nigeria.** These constraints rank among the top three in all northern and southern states (see Figure 37). There are, however, some differences among regions. Firms in the northern states rank political instability among the biggest constraints. In Lagos, tax rates rank among the top constraints, and in other southern states, a top constraint is access to finance.

**Figure 36: Percentage of Firms Citing a Major Obstacle in the Investment Climate**



Source: Authors' calculations based on data from Enterprise Survey 2014–15

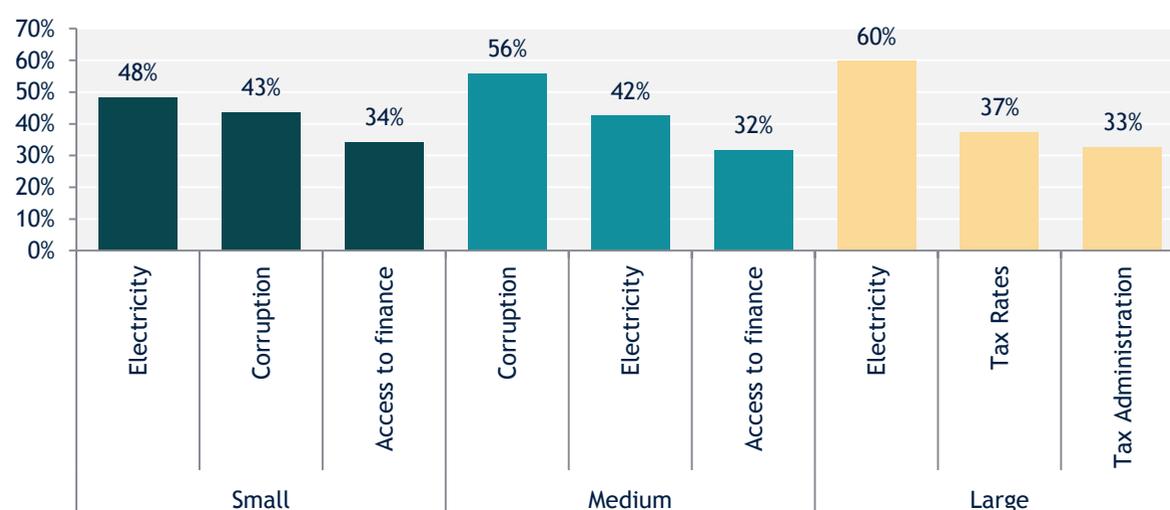
**Figure 37: Percentage of Firms Citing Obstacles in Different Regions**



Source: Authors' calculations based on data from Enterprise Survey 2014–15

**Firms of different sizes face different obstacles.** Electricity ranked among the top three constraints for firms of all sizes (Figure 38). However, small and medium firms tend to be more concerned about access to finance than larger firms, with about 30 percent of firms in both groups citing it as a major obstacle. In comparison, only about 8 percent of large firms said that access to finance was a serious obstacle. This suggests that the banking and trade credit systems work well for large firms but serve small and medium firms far less well. In contrast, large firms were far more concerned than smaller firms about tax rates and tax administration, with 37 and 33 percent of large firms reporting these as top constraints. In comparison, fewer than 20 percent of small firms ranked tax rates and administration as serious obstacles. It is possible that small firms might be less concerned about tax rates and administration because they find it easier than large firms to evade tax requirements.

Figure 38: Percentage of Small, Medium and Large Firms Citing Major Obstacles



Source: Authors' calculations based on data from Enterprise Survey 2014–15

## The Nigerian business environment in context

### Electricity

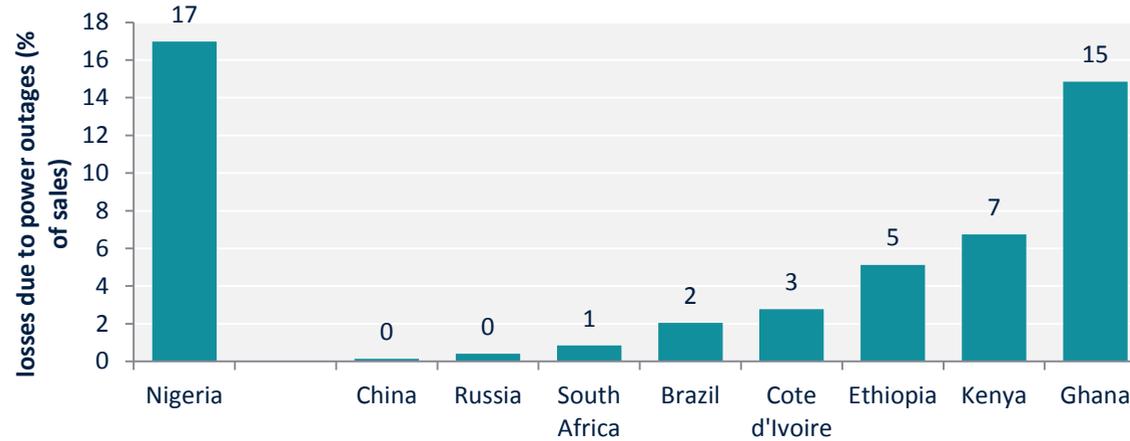
**Power outages appear to be a more serious problem in Nigeria than in other countries** (Figure 39). The average firm reported that losses due to power outages were equal to about 17 percent of sales—higher than in any comparator country. Only Ghana comes close, with losses equal to 15 percent of sales. Firms in China and Russia report losses of less than 0.5 percent due to power outages.

**Power outages appear to be a concern throughout the country** (Figure 40). Outages in the less affected region (northern states, except Kano and Kaduna) were worse than in any of the comparator countries except for Ghana. Firms in Lagos and other southern states reported the highest losses—equivalent to more than 20 percent of sales. It should be noted that this does not

mean that the number of outages is lower in the northern part of the country, rather they report to be less affected in terms of their losses.

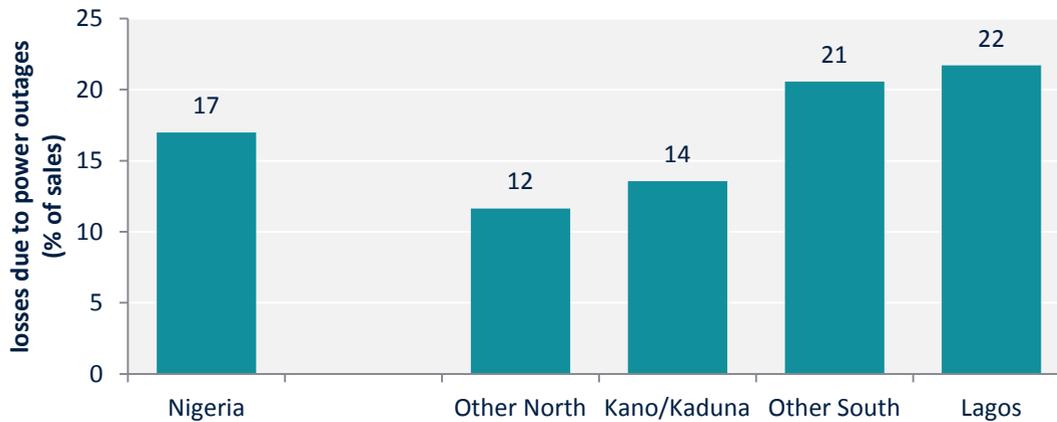
**One way that firms respond to frequent outages is to buy generators.** Although generators reduce losses due to outages, they are expensive to purchase and operate, and therefore are an imperfect substitute for reliable infrastructure. About 71 percent of Nigerian firms reported that they use generators, a percentage higher than any comparator country.<sup>39</sup> In Russia and China, where firms reported losses due to outages of less than 1 percent of sales, only 9 and 8 percent of firms, respectively, reported that they have generators.

**Figure 39: Losses Due to Power Outages, Nigeria and Comparator Countries**



Source: Authors' calculations based on data from Enterprise Survey (2014–15 for Nigeria, latest available year for other countries)

**Figure 40: Losses Due to Power Outages, by Region**

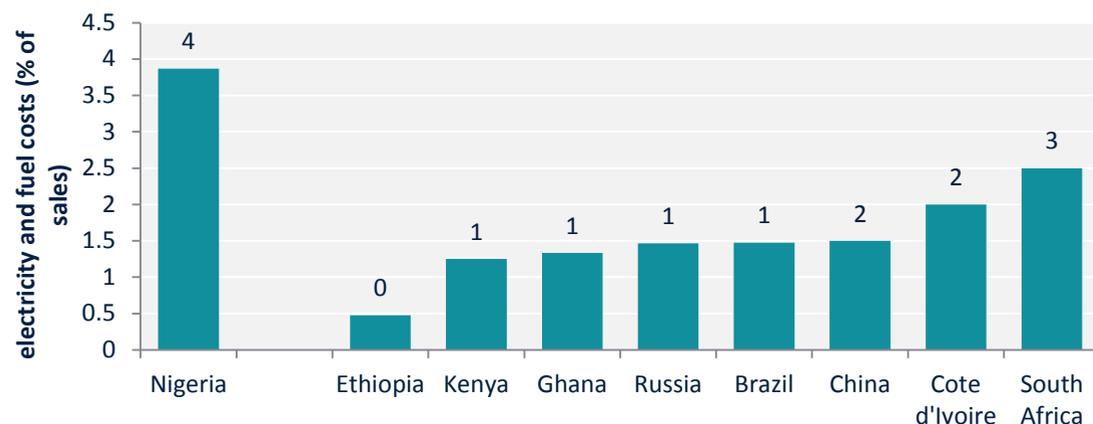


Source: Authors' calculations based on data from Enterprise Survey 2014–15

<sup>39</sup> Côte D'Ivoire: 7 percent, Brazil: 8 percent, China: 8 percent, Russia: 9 percent, South Africa: 18 percent, Ethiopia: 41 percent, Ghana: 52 percent, and Kenya: 57 percent.

**High generator use often leads to high costs for electricity and fuel.** Therefore, it is not surprising that Nigerian firms report very high electricity and fuel costs, equal to about 3.9 percent of sales. In comparison, these costs are equal to only about 1 percent of sales in Russia and about 2 percent in China. Combined with high losses due to power outages, this suggests that unreliable and expensive power will make it challenging for Nigerian firms to compete in international markets.

Figure 41: Electricity and Fuel Costs, Nigeria and Comparator Countries



Source: Authors' calculations based on data from Enterprise Survey (2014–15 for Nigeria, latest available year for other countries)

### Corruption

**Approximately 45 percent of Nigerian firms report corruption as their second most serious problem,** after electricity. Corruption appears to be a problem across most of the country, although managers of large firms were less likely than small firms to report it as a serious problem. Objective data on corruption confirm this view (Figure 42). About 24 percent of managers said that bribes are needed to get things done in Nigeria, compared to only about 5 percent of Chinese managers, 10 percent of Brazilian managers, and 15 percent of managers in South Africa.<sup>40</sup> In practice, this is likely to underestimate the extent of corruption in Nigeria and in most of the comparator countries. Although the questions on corruption are asked indirectly (industry-level questions instead of firm-level), this appears to be only partially successful. Studies have found that managers in Nigeria significantly underreport corruption even when questions are asked indirectly. This is, however, likely to affect the comparator countries as well.

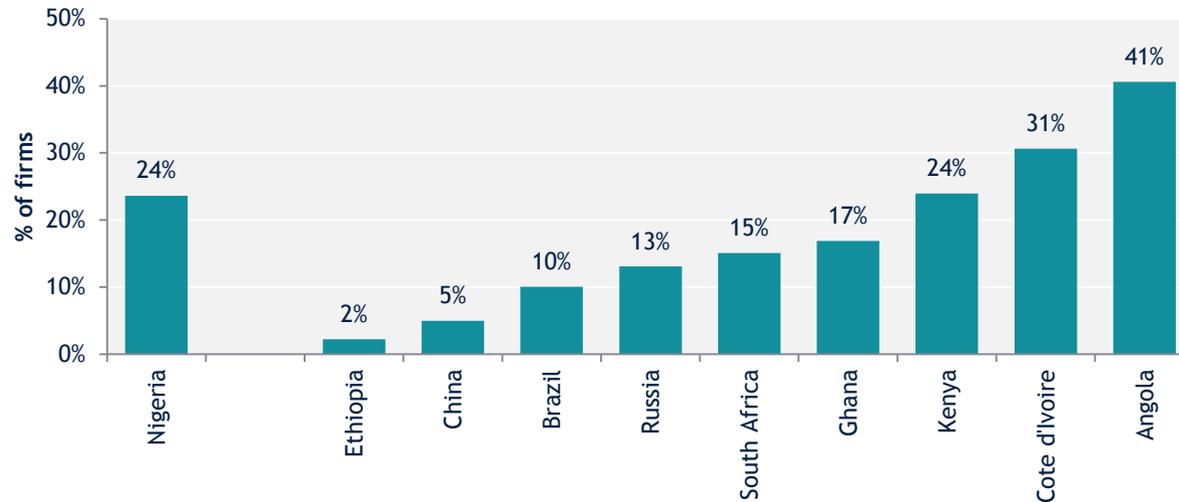
Although large firms are less concerned with corruption (Figure 43), this does not appear to be because they are less likely to pay bribes. Nearly two-thirds of those managers reported that bribes are needed to get things done, compared to only 21 percent of managers of small firms. This appears, in part, to be because large firms are more likely than small firms to interact with regulators. Previous studies have found similar results for other countries.

**Firms in Kano and Kaduna are significantly more concerned with corruption.** About 60 percent of the managers in Kano and Kaduna states said bribes are needed to get things done. The percentage is also quite high in Lagos (36 percent). On the other hand, in the other northern

<sup>40</sup> Managers were asked whether firms like theirs need to pay bribes to get things done with respect to regulation, taxation, licenses, and other interactions with government officials. The question was phrased “firms like this one” to allow managers to answer without incriminating themselves. Most studies that use this data assume either explicitly or implicitly that the managers answer thinking about their own actions. For our purposes, however, it does not matter how the managers answer the question. If their perceptions about what other firms are doing are correct, they will still say firms like theirs need to pay bribes.

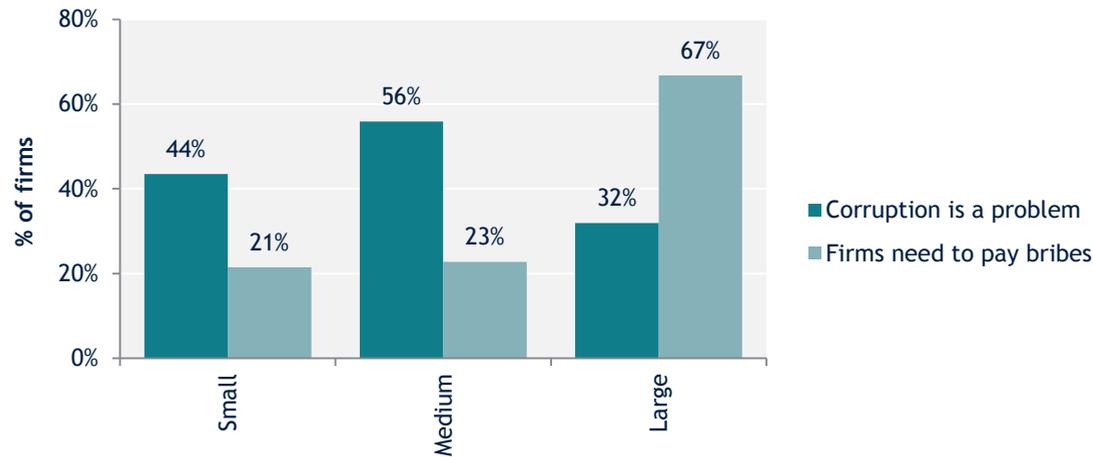
and southern states, only 14 percent and 18 percent of firm managers report on the importance of bribes, respectively.

**Figure 42: Firms Saying that Bribes Are Needed**



Source: Authors' calculation based on data from World Bank enterprise surveys. (2014–15 for Nigeria, latest available year for other countries)

**Figure 43: Firms Identifying Corruption as a Problem and Firms Believing They Need to Pay Bribes**



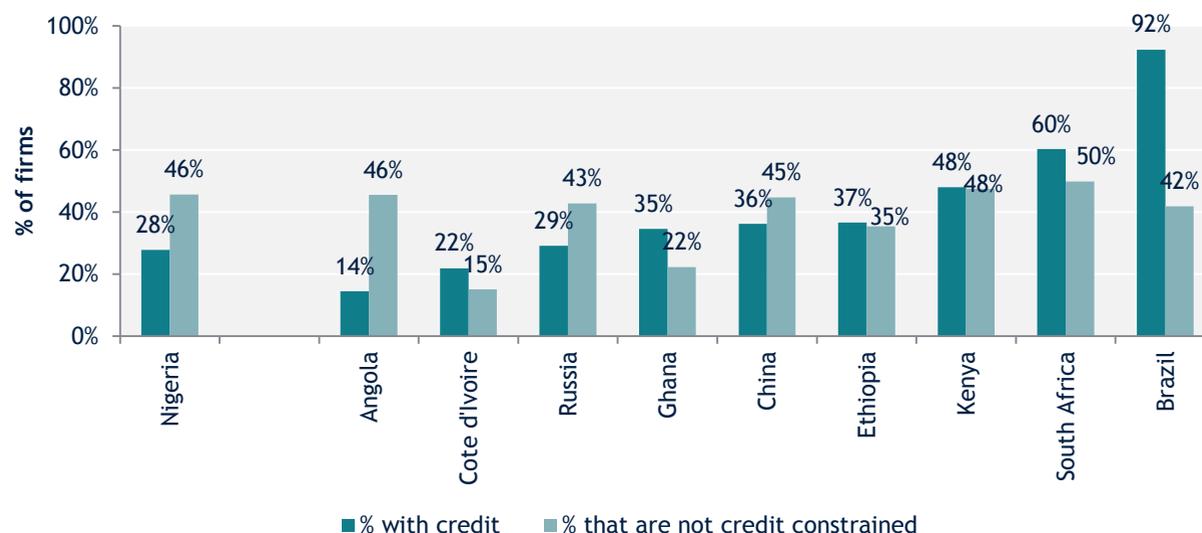
Source: Authors' calculation based on data from World Bank enterprise surveys 2014–15

### ***Access to Finance***

**Approximately 33 percent of managers in Nigeria said that access to finance is a serious problem.** This was higher than any other constraint except electricity and corruption. When considering objective measures, Nigerian firms are less likely to have bank credit than firms in most comparator countries (Figure 44). Only about 28 percent of Nigerian firms have either a loan or overdraft facility from a bank, compared to about 29 percent in Russia, 36

percent in China, 60 percent in South Africa, and 92 percent in Brazil. Although Nigeria compares more favorably with African countries, Nigerian firms are less likely to have bank credit than firms in Ghana, Ethiopia, or Kenya. However, there are importance differences across Nigerian regions. Approximately 66 percent of Nigerian firms in Lagos have either a loan or overdraft facility from a bank, compared with 18 percent in Kano and Kaduna, 11 percent in the other northern states, and 33 percent in the other northern states. This suggests that firms are better financed in Lagos and the south than in any states in the north of Nigeria.

Figure 44: Percentage of Firms with Credit<sup>1</sup> and Firms Credit Constrained<sup>2</sup>



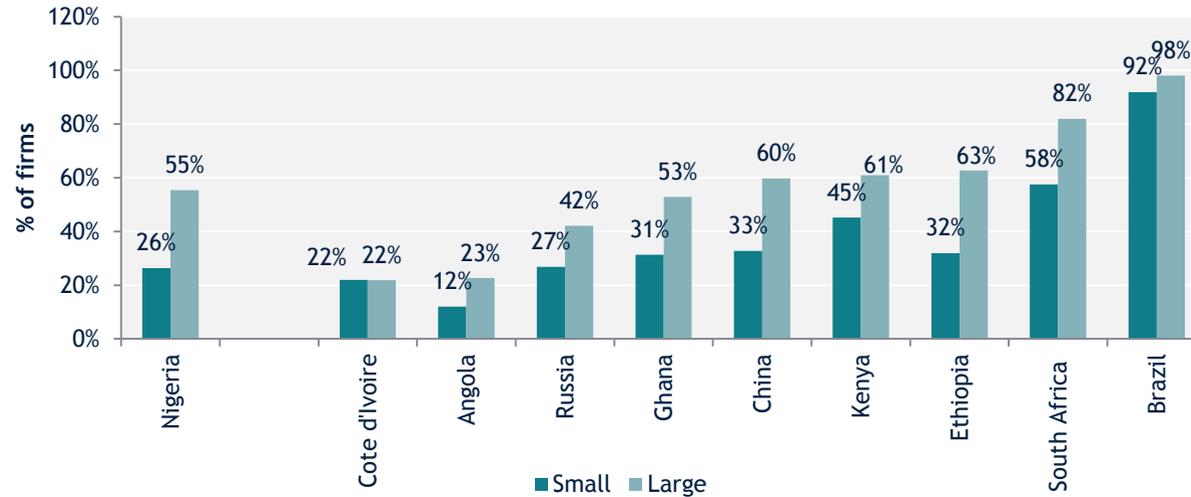
Source: Authors calculation based on data from World Bank enterprise surveys (2014–15 for Nigeria, latest available year for other countries)

Note 1: Credit covers loan and line of credit from a financial institution (k8) and/or overdraft facility (k7). If one data is missing for k7 or k8, the computed variable is considered as missing. This explains why the statistics differ from the data published on the Enterprise Survey website.

Note 2: The definition of “Being Credit Constrained” is to be found in the following publication: World Bank. 2014. *What Have We Learned from the Enterprise Surveys Regarding Access to Credit by SMEs?* Enterprise Analysis Unit.

Although relatively few Nigerian firms have bank credit, only about 54 percent reported to be credit constrained. This suggests that **demand for credit is relatively low in Nigeria**. Small firms are far less likely to have banks loans than large firms (figure 45). This is also the case in all comparator countries; however, the difference is particularly striking in Nigeria, where only about 26 percent of small and medium firms have bank loans, compared to 55 percent of large firms—a difference of 29 percent. This is larger than in any of the comparator countries except Ethiopia, where the difference is 31 percent. This suggests that although small firms commonly have worse access than large firms, small firms in Nigeria appear to be particularly disadvantaged in this respect.

Figure 45: Percentage of Firms with a Credit, by Firm Size



Source: Authors' calculation based on data from World Bank enterprise surveys (2014–15 for Nigeria, latest available year for other countries)

### ***Tax Rates and Administration***

**Taxes did not rank among the greatest constraints in Nigeria overall;** however, many large firms' managers reported to be concerned with both tax rates and tax administration. The enterprise survey did not include any objective questions on taxes. It is possible, however, to look at the Doing Business Report to compare tax rates and tax administration in Nigeria with those in other countries.

Large firms reported that tax rates are a serious obstacle, but they do not appear inconsistent with tax rates in the comparator countries. According to the Doing Business Report, the total tax rate in Nigeria is about 33 percent (figure 46). Although this is slightly higher than in South Africa and Ethiopia, it is similar to Ghana and lower than in India, China, and Brazil, where rates are 62, 65, and 69 percent, respectively.

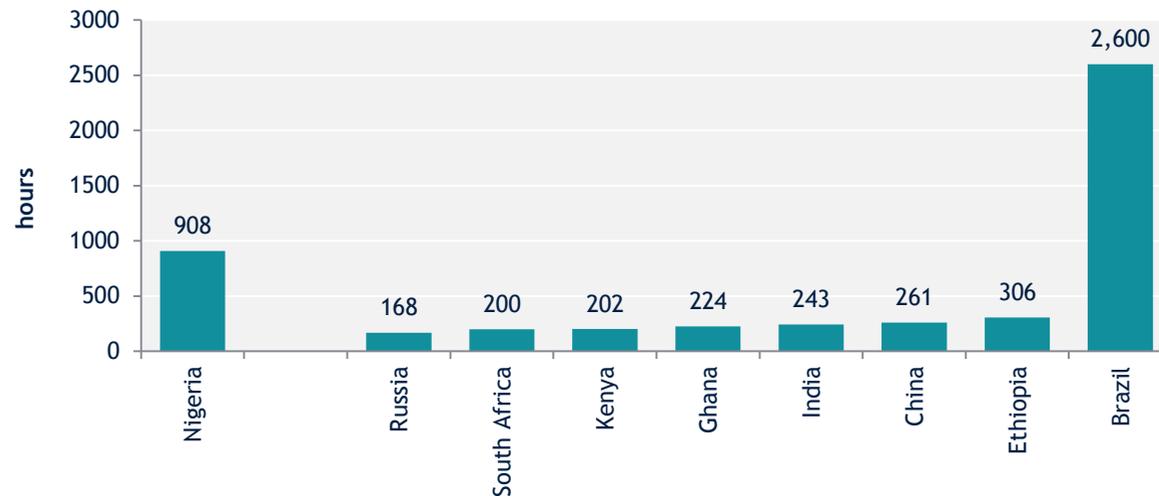
Figure 46: Total Tax Rate - Percentage of Profits



Source: Doing Business Report (2014).

**Nigeria compares less well with respect to tax administration.** It takes more than 900 hours to deal with tax requirements in Nigeria, according to the Doing Business Report—far higher than in any comparator country other than Brazil (Figure 47). Firms in Russia only spend 168 hours dealing with tax requirements, and firms in China spend only 261 hours. In summary, although tax rates do not appear inconsistent with rates in other countries, tax administration is more burdensome in Nigeria than in most comparator countries. In addition, the YouWin survey asked business owners an open-ended question about what law they would change if they could and how they would change it. The most common response was *tax law*. In addition to wanting lower taxes, business owners would like there to be a unified tax policy, with only one body in charge of collecting a single business tax instead of having to make multiple payments to different entities.

Figure 47: Hours per Year Spent on Tax Administration



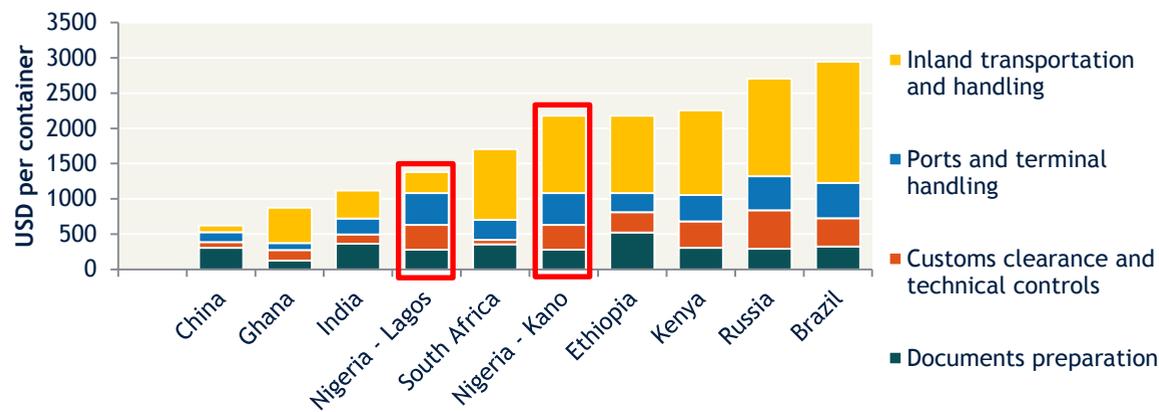
Source: Doing Business Report (2014)

## Box 2: Trade in Nigeria

The Nigerian market is relatively closed. Most manufacturing firms serve the domestic market. Only 16 percent indeed report exporting, and the proportion of sales being exported is relatively small (about 38 percent). On the other hand, a large proportion of firms indicate that they import products from abroad (about 42 percent). However, most of their inputs are sourced locally. On average, only 17 percent of the material inputs and supplies are imported.

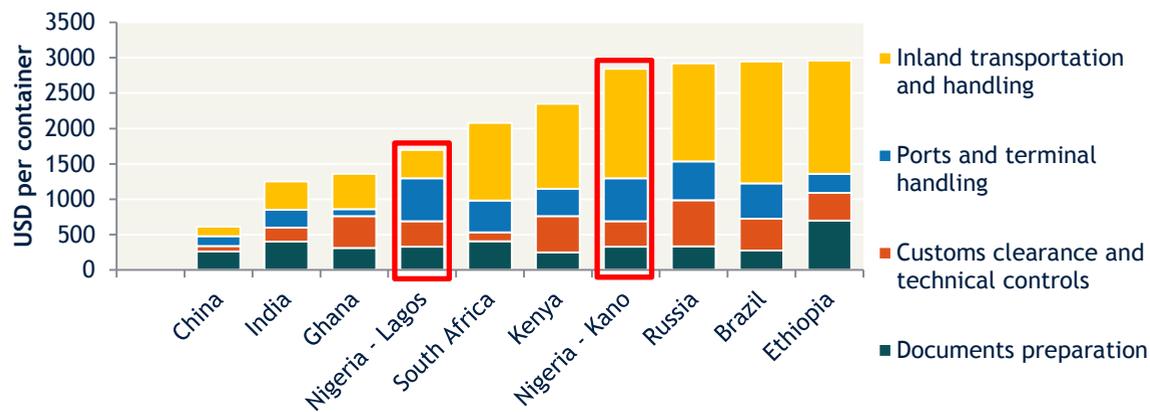
Nigeria fares relatively well when looking at the functioning of the customs, though there is a difference between Lagos and Kano that is due to inland transportation costs. According to *Trading Across Borders* (2014), costs of exporting are low compared to the ones faced by most comparator countries. The same applies for import costs that are relatively low too for Lagos. The breakdown indicates that ports and terminal handling account for the larger share of the export and import costs.

**Figure 48: Breakdown of Export Costs**



Source: Doing Business (2014)

**Figure 49: Breakdown of Import Costs**



Source: Doing Business (2014)

The Government of Nigeria restricts the imports of goods to Nigeria to protect its domestic industry by imposing import bans and applying high import duties. The enterprise survey indicates that the level of protection highly depends on the industry. Only 14 percent of textile, garment, or leather firms indicate an

import duty of their main product greater than 30 percent while almost half of the agroprocessing firms do.

### Has the Business environment improved?

**Nigeria’s business environment seems to have improved in some aspects, in particular in access to finance.** In this section, we compare several objective investment climate variables from the two rounds of the enterprise survey (2007 and 2014) in a smaller number of states to ensure comparability between the two rounds.<sup>41</sup> As measured by the percent of firms with credit, firms appear to have better access to credit, from 10 percent of firms in 2007 to 31 percent in 2014 (Table 7). In addition, the number of firms using the Internet increased from 28 percent to 41 percent between the two surveys. Given the rapid growth in Internet services over this period, improved access to credit is not surprising.

**Table 7: Comparison of Investment Climate Variables, 2007 and 2014**

	Means		Medians	
	2007	2014	2007	2014
<b>Dummy Variables</b>				
% of firms with loans	4%	11%		
% of firms with credit	10%	31%		
% of firms using Internet	28%	41%		
% of firms licensing foreign technology	11%	9%		
% of firms ISO certified	9%	9%		
% with generator	86%	85%		
% reported bribes are needed	41%	40%		
<b>Continuous variables</b>				
Time spent dealing with regulation	6.9	9.5	3.0	0.0
Number of days with power outages	22.6	28.6	25.0	20.0
Losses due to power outages	8.1	14.1	5.0	4.0
Cost of crime and security	1.9	10.2	0.4	2.0

Source: Authors’ calculation based on data from World Bank enterprise surveys 2007–08 and 2014–15

**Other investment climate variables appear to have changed only modestly or worsened.** About 10 percent of firms reported licensing foreign technologies in both years. The percent of firms that had generators, were ISO certified, and had to pay bribes to get things done were very similar in both surveys. Most notably, firms reported greater costs due to crime and insecurity in 2014 compared to 2007. Although the average days with outages, losses due to outages, and time spent dealing with regulation increased between 2007 and 2014, the median has decreased. This suggests that although some firms suffered extreme losses, the median effect was modest.

<sup>41</sup> To ensure comparability, the averages are weighted averages, and calculations include only firms from the provinces that were covered in both surveys (Abia, Abuja, Anambra, Cross River, Enugu, Kaduna, Kano, Lagos, Ogun, and Sokoto).

### **Case Study One: Small Scale Nylon Bag Production in Kano**

Mr. Nazifi established his nylon bag production company in 2000. Like many businessmen in North Nigeria, he was born in a family of traders. He was working with his older brother in a venture importing light manufacturing machinery from China and reselling it on the Nigerian market.

During a trip to China, his brother realized the potential of the nylon bag machinery for the Nigerian market, as this business line requires few inputs and is relatively easy to set up. In order to sell the machine to Nigerian light manufacturers, Mr. Nazifi's brother asked him to take charge of setting up a demonstration stand to show potential Nigerian buyers how the machines function. Through this process, Mr. Nazifi also learned how to operate the machines. With the support of his brother, he bought a set of machines and started his own nylon bag plant in Jos. However, in 2006, he had to relocate to Kano after ethnic clashes. Mr. Nazifi is the sole owner of his enterprise.

When Mr. Nazifi relocated to Kano, the nylon bag market was very competitive and composed of about 250 small-to-medium scale nylon bags manufacturers. The products are used by micro, small, and medium-sized retail outlets to package goods purchased by customers. Mr. Nazifi's relocation to Kano corresponded to the period when Viva Decent-Bag was gaining market share. Viva Decent-Bag is a Chinese-owned company belonging to the Lee-Group, which has over forty years of experience in plastics industries, worldwide branches, and worldwide manufacturing locations. Viva's production process allows it to use recycled plastic materials as inputs, thus cutting costs and allowing them to reduce prices. The Chinese-owned company quickly managed to secure close to 80 percent of the market in Kano and the surrounding area, while the other firms had a share about 20 percent of the market. Today, only about fifty nylon bag manufacturers survive in the market. In this tough environment, the quality of the machines Mr. Nazifi owns allowed him to be more efficient than some of his competitors and therefore survive the Chinese competition. In addition, Mr. Nazifi decided to establish his company near the high tension power lines between Nigeria and Niger, thus securing an almost constant supply of power and significantly reducing the cost from using alternative sources of power.

Given the tough competition, Mr. Nazifi uses an aggressive promotion and discount scheme when sending his marketing team to different markets in Kano State. He also relies on a network of past customers that he has met through his previous trading activities, with whom he developed good relationships. Based on the quality of his bags and the good relationships he has had with his customers, Mr. Nazifi is able to sell his bags in other states like Kaduna, Plateau, Katsina, Borno, and Yola. The business is highly seasonal; during rainy seasons, market activities slow down significantly, while activities boom during the dry season. Based on this, depending on the capital at his disposal, Mr. Nazifi prefers not to stop production of bags in the rainy season and built up a stock that he could sell during the dry season. This is driven by the fact that he is employing close to twenty full-time staff instead of relying on casual staff. Most of his staff are hired through informal channels such as being recommended by relatives or being relatives of current or former employees. Given the level of unemployment in the state, labor is easy to find. He provides to new workers with in-house training to build the requisite skills. By producing all year around, he can afford to keep the staff he has trained and prevent them from working for his competitors.

(continued on next page)

The main input used for the production of nylon bags is polythene, which is provided by three to four local traders with whom he has developed a long term relationship over the years. With this small network, he is nearly guaranteed a constant supply of inputs, the only occasions when he cannot secure inputs are linked to countrywide scarcity (i.e., plant closed down or delays in Lagos port). These relationships are still informal, not based on contracts, and most transactions can be concluded in a couple of phone calls. These suppliers are now willing to sell to him on credit. Polythene is produced in Nigeria in the Port Harcourt region with a key supplier being the Indorama Eleme Petrochemicals Limited. Mr. Nazifi is hoping that in few years after expanding his production line, he will be able to sign a contract with polythene producing firms to reduce production costs. Mr. Nazifi does not have any current plans to diversify his products. He considered offering different colors of bags to his customers, but the change in production line is not worth the benefits as those colored bags do not command higher prices.

The machines he uses are from China, bought less than ten years ago and still working well. He has a team of two engineers (electrical and mechanical) working with him who are able to fix most glitches on the production line. Replacement parts are also available in Kano.

The enterprise survey gives different measures of firm performance that enable us to compute various measures of firm performance for *manufacturing* firms in Nigeria.<sup>42</sup> First, total factor productivity (TFP) is calculated using regression analysis and takes capital and labor use into account. However, this measure suffers from many shortcomings (detailed in appendix 2 of the background paper on firm-level performance in Nigeria).<sup>43</sup> In particular, productivity is only one part of the competitiveness story. Firms with low productivity can remain competitive when wages are comparatively lower. Therefore, the second measure of firm performance is unit labor costs, calculated as total labor costs divided by value added. Unit labor costs are higher when high labor costs are not fully reflected in high productivity. That is, when unit labor costs are high, all else equal, workers are earning higher wages than their productivity would justify. When this is the case, all else equal, firms will find it difficult to compete on international markets. Finally, the analysis presents measures of firm growth, defined as growth of sales and employment.<sup>44</sup>

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<sup>42</sup> Enterprise surveys collect the detailed financial data needed to calculate value-added capital only for manufacturing firms in most countries. To ensure comparability, all cross-country comparisons are therefore only for manufacturing firms. Some productivity measures, such as sales and employment growth, can be calculated for firms in other sectors in Nigeria. In these cases, we also present sectoral medians for other firms for comparison with manufacturing. For cross-country comparisons of productivity, productivity measures that are measured in monetary terms are converted from local currency at the time of the survey into 2010 US dollars.

<sup>43</sup> G. Clarke, "Firm Performance in Nigeria," background paper, (2015).

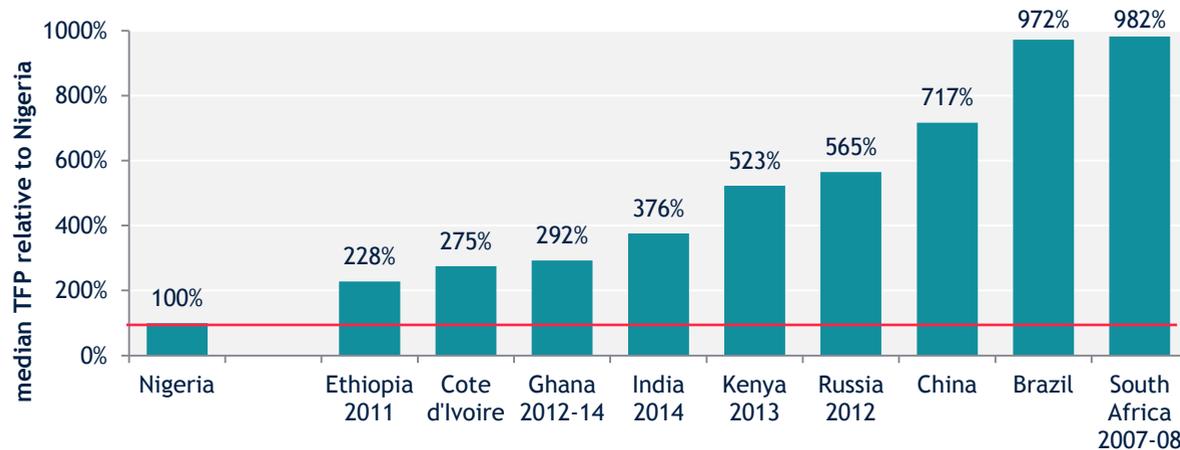
<sup>44</sup> Most of the performance measures discussed earlier in the report could only be calculated for manufacturing firms. Because information on intermediate inputs and capital was only collected for firms in other sectors, TFP and unit labor costs cannot be calculated for firms in other sectors. This is not the case for sales and employment growth. Because this information was collected for all firms, it is possible to look at them across all sectors and subsectors.

## The productivity of the Nigerian manufacturing sector in context

**Given the per capita income of Nigeria, the TFP of its manufacturing sector is lower than expected.** When compared with other emerging markets, the TFP of Nigeria's manufacturing sector is demonstrably low. The median manufacturing firm in each of the BRICS economies possesses a TFP that is between 376 percent and 982 percent of the median manufacturing firm in Nigeria (Figure 50). TFP tends to be higher in countries where per capita income is higher, and because per capita income in Nigeria is lower than in most of the BRICS countries, this finding is not surprising. However, even by the standards of countries with lower per capita incomes than Nigeria, the TFP of its manufacturing sector is considered low. TFP is between two and three times higher in Ethiopia, Côte d'Ivoire, and Ghana and almost five times higher in Kenya. Overall, these results suggest that TFP in Nigeria should be substantially higher.

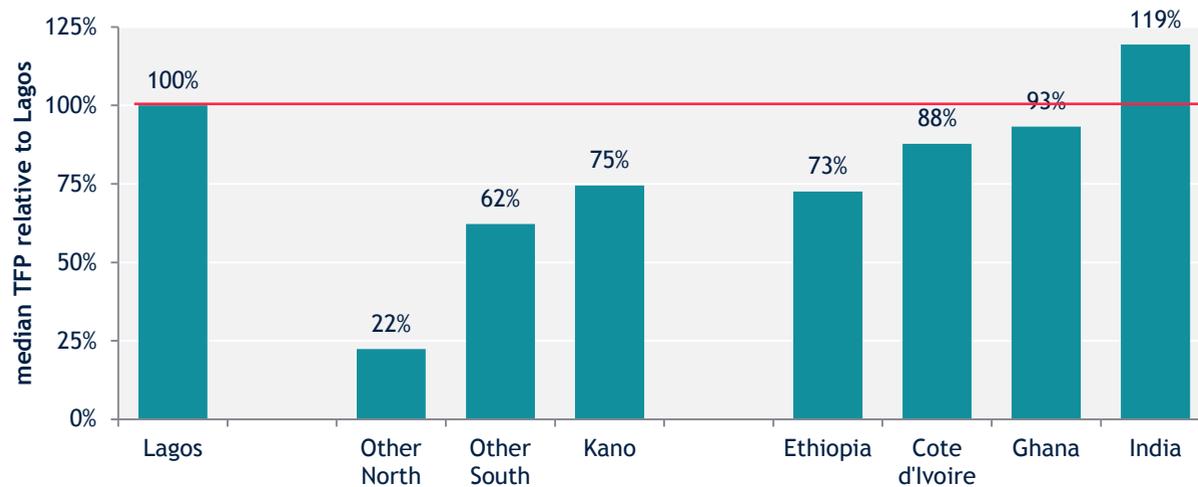
**Why is TFP so low in Nigeria?** At least in part, Nigeria's low productivity measure appears to be driven by low productivity in the country's North (Figure 51). TFP in the northern states (except Kano and Kaduna) is about one-third of TFP in the southern states (except Lagos). While firm productivity in Lagos compares favorably with that in Ethiopia, Côte d'Ivoire, or Ghana, and even BRICS countries, cities in Nigeria's North lag behind considerably. The TFP of firms in Kano and Kaduna is about one-quarter of the TFP in Lagos. TFP for the median firm in Kano and Kaduna is about 75 percent of TFP for the median firm in Lagos, and TFP for the median firm in other southern states is about 62 percent of TFP in Lagos. Overall, this suggests that low TFP in the north of Nigeria partially accounts for Nigeria's overall low productivity.

Figure 50: TFP for a Median Manufacturing Firm in Nigeria and Comparator Countries



Source: Authors' calculation based on data from enterprise survey (2014–15 for Nigeria, latest available year for other countries)  
Note: Country estimates are from LAD regressions.

Figure 51: TFP for a Median Manufacturing Firm in Lagos and the Other Nigerian Regions



Source: Authors' calculation based on data from enterprise survey (2014–15 for Nigeria, latest available year for other countries)  
Note: Country estimates are from LAD regressions.

### The Nigerian manufacturing sector, noncompetitive relative to other countries

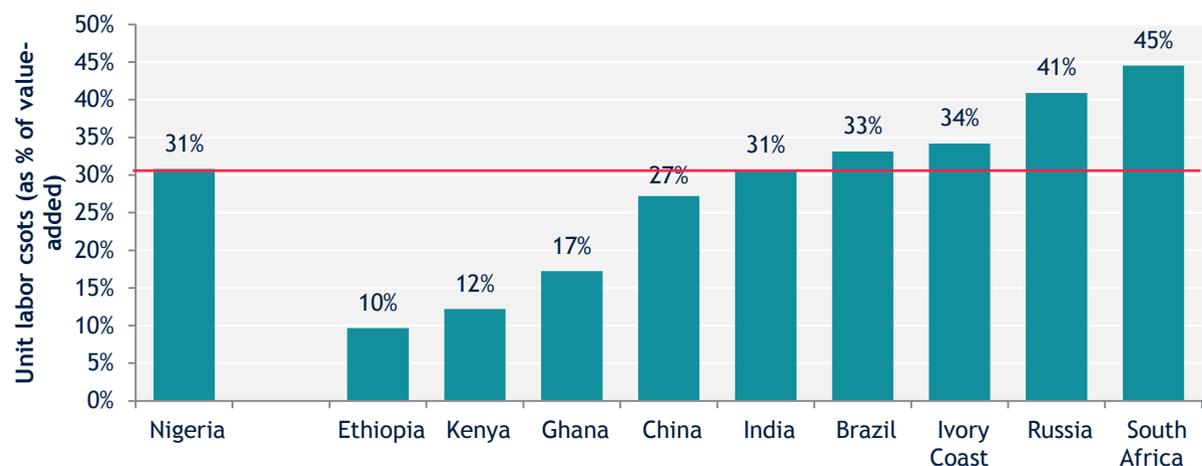
#### Unit labor costs are relatively high in Nigeria compared to other African countries.

The median firm in Nigeria has unit labor costs equal to approximately 31 percent of output (Figure 52). Only Côte d'Ivoire (34 percent) and South Africa (45 percent, which is particularly high)<sup>45</sup> possess higher unit labor costs. Nigeria's unit labor costs compare more favorably with those in the BRIC economies. They are only slightly higher than in China (27 percent), comparable with India and Brazil (31 and 33 percent, respectively), and lower than in Russia (41 percent).

**Unit labor costs differ substantially across Nigeria.** In Kano, Kaduna, and the rest of the southern states, unit labor costs are comparable to countries with the lowest measures (figure 53), and TFP is not that low compared to Lagos, which suggests a comparative advantage of these states. Although productivity is low in other northern provinces, unit labor costs remain also relatively modest, which suggests that wages are relatively low in the north compared to other states. In contrast, unit labor costs in Lagos are high; at 57 percent, they are higher than in any comparator country including South Africa, which is not the case for TFP. This indicates that labor costs in Lagos are too high compared to TFP. As a result, firms in Lagos do not appear competitive when compared to other countries.

<sup>45</sup> See, for example, Clarke and others (2007) for a discussion of high labor costs in South Africa.

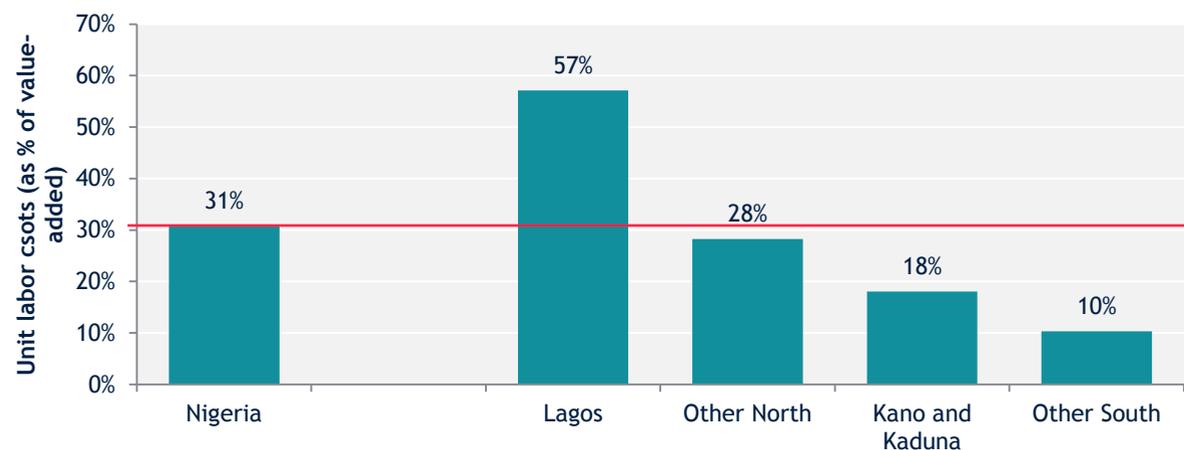
**Figure 52: Unit Labor Costs in Manufacturing—Nigeria and Its Comparator Countries**



Source: Authors' calculations based on data from enterprise survey (2014–15 for Nigeria, latest available year for other countries)

Note: Unit labor costs are the ratio of labor costs to labor productivity. See annex 3 for details.

**Figure 53: Unit Labor Costs in Manufacturing—Lagos and the Other Nigerian Regions**



Source: Authors' calculations based on data from enterprise survey 2014–15

Note: Unit labor costs are the ratio of labor costs to labor productivity. See annex 3 for details.

### Nigerian manufacturing firms are underinvesting, in particular in the North

Capital productivity is the ratio of value added to the value of machinery and equipment. It measures how productively firms use capital. One advantage that capital productivity has over TFP is that capital productivity is not affected by exchange rate variables. Because value added and capital are both measured in local currency, the ratio between the two is unit free (the currency units in the top and bottom effectively cancel each other out). As a result, unlike TFP, capital productivity will not change when external factors affect exchange rates.

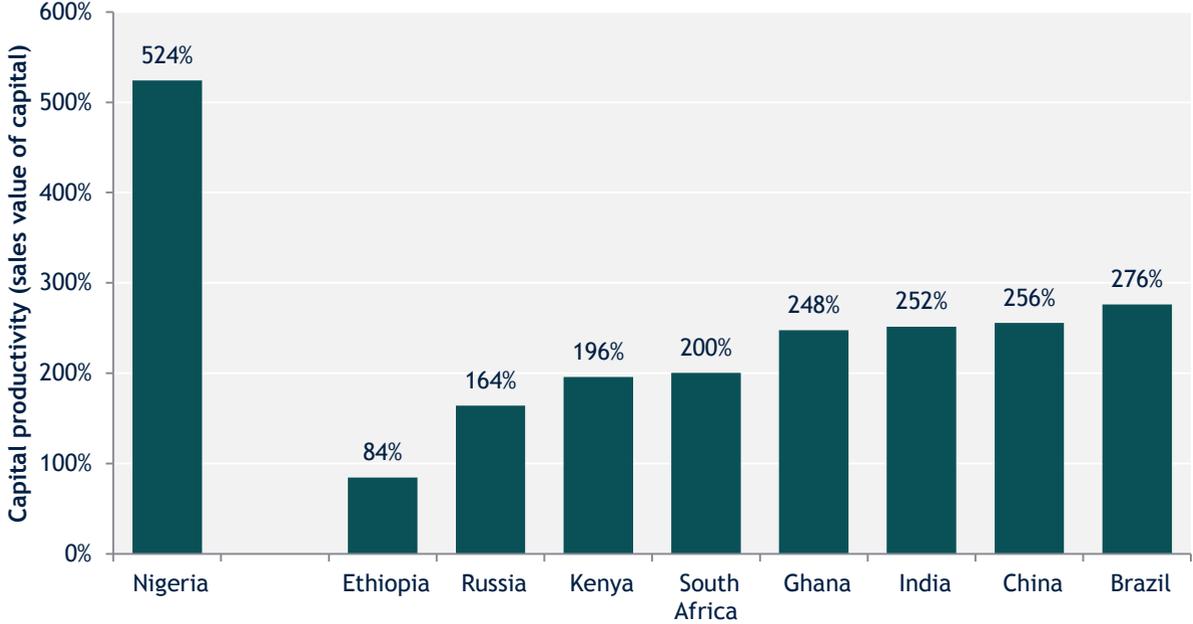
Capital productivity is higher in firms that produce high output volumes with only a small allocation of machinery and equipment. Because capital productivity does not take labor into account, capital productivity will tend to be higher in firms and countries where production is highly labor intensive (for example, firms that rely relatively heavily on labor to produce their output). Thus, although high capital productivity might indicate that firms use capital efficiently, it might instead simply indicate that firms are highly labor intensive.

**Capital productivity is high in Nigeria.** For the median firm in Nigeria, value added is equal to about 524 percent of the sales value of capital in Nigeria (see Figure 54). In comparison, capital productivity is only about 164 percent in Russia, about 252 percent in India, and 256 percent in China. In fact, capital productivity is twice as high in Nigeria as in any of the comparator countries.

**Nigerian manufacturing firms are not big investors.** One possible explanation for high capital productivity in Nigeria is that firms have substituted labor for capital. If this were the case, however, we would expect unit labor costs to also be very high. In practice, although unit labor costs in Nigeria are higher than in several other countries in Sub-Saharan Africa, they are not exceptionally high. The other possible explanation is that Nigerian firms are underinvesting. That is, although capital appears productive in Nigeria, firms do not appear to be investing much.

**Why would firms underinvest in Nigeria?** One possible explanation for this is that firms might underinvest because they think long-term investment is risky. Political risk, for example, might discourage firms from investing. Similarly, previous studies have found that corruption can discourage investment; firms that are highly capital intensive are more vulnerable to corruption than firms that are highly labor intensive (Svensson, 2003). Finally, when financial markets are underdeveloped, firms might underinvest because they have to finance investment with internal sources of capital. As discussed in the next section, Nigerian firms cite corruption, political instability, and access to finance (see section above) as the biggest constraints to doing business. Together, these constraints may discourage investment by Nigerian firms and, somewhat artificially, produce a high capital productivity measure.

Figure 54: Capital Productivity is High Compared to the Comparator Countries



Source: Authors' calculation based on data from World Bank enterprise surveys

Note: See appendix for details. All data points are for the median firm on each measure of performance.

**The problem seems to be more acute in the northern part of Nigeria.** Capital productivity appears to be particularly high in Kano/Kaduna and in the other northern states. Whereas capital productivity is close to 200 percent in Lagos and the other southern states—similar to the other comparator countries—capital productivity is exceptionally high in Kano and Kaduna (1,233 percent) and the other northern states (700 percent). This could be because firms in these regions are particularly averse to making long-term investments. As shown previously, Nigerian firms in the north are more likely than firms in the south to be concerned with corruption, political instability, and access to finance.

## **Case Study Two: Golden Age Group in Niger State**

### *(a) History and Ownership*

Golden Age Group consists of a water company, a printing services business, and a water machinery importing business. Golden Age started operating in September 2007, producing sachet water for local resellers in Niger State. After three years of operation, it advanced to producing various sizes of bottled water and printing sachets and bottle wrappers for other water producers.

Mr. Chidi Anthony received a bachelor's degree in state management and evaluation at FUT Minna, Niger State. On graduating, he worked for four and a half years in a supermarket business before going into interior decoration. Following this, he started selling furniture and opened his first business, the first furniture importers in Minna. He then started Golden Age Group. The idea of the water business came from a project Mr. Anthony researched at the university.

Golden Age Group was started with Mr. Anthony's own savings, so he is the only shareholder. He was very wary of borrowing from a bank. He believes they can cause problems for business as there can be competing interests. However, he recently borrowed ₦5 million from Diamond Bank in 2014 and ₦3 million from Fidelity Bank in 2015 to fund the expansion of Golden Age Group.

### *(b) Products*

The water company sells bottled and sachet water and painted rolls (printed leather for sachets for other companies). They also sell water treatment machines and accessories imported from China. The pure water factory is the largest in Minna, and their products are available in supermarkets, eateries, and markets across the state. They have the required NIS, NAFDAC, and NESDRA certifications. The company recently updated their bottles to the industry standard. The bottled water uses industry PET with a neck size of 30 mm (diameter).

A five-pack of bottles is priced at ₦450, while a sachet is ₦70. The prices for sachets, water treatment machines, and accessories sold vary depending on what the customer requires, as they are then sourced, imported, and delivered to them. Mr. Anthony says he doesn't see any major competitors at the level he is producing at but on a larger scale, Eva and Nestle are the major competition. He believes he controls about 55 percent of the market in Niger State. The competitors' pricing is, in most cases, similar to Golden Age's.

### *(c) Distribution and Security*

Golden Age has branches in Abuja, Kaduna, Sokoto, and Bauchi through which its water products are sold. It plans to extend to Kano and Katsina. Some of the water is sold through distributors in local governments. The sachet water is not taken out of Minna for durability

reasons. The four main local distributors are in Bosso, Kainji, Kontagora, Bida, and Gwagwalada. These buyers pay for the water, and the company uses their vans to send it to them. They get discounted prices on the sale, so they can make a profit. Mr. Anthony believes that the company's sales have been affected by the insecurity in the country. The security threat makes it difficult to reach certain areas, as no distributor will carry the products there.

*(d) Raw Materials and Suppliers*

The company gets its leather and pellets used for manufacturing the water bottles and sachets from Radiant Agro Allied Ventures in Ibadan, Prima Corporation, Omi Nigeria, and Lemmy in Lagos. The water is sourced from the Niger State Waterworks. It is then treated at the factory before it is packaged. On average, the company buys from the waterworks ten to fifteen tonnes per month of production. To match the water produced, they use roughly ninety-six tonnes of leather per month of production and almost ten tonnes of pellets for the bottles. They get stocks from Lagos and Ibadan for their own usage and to sell on to other customers.

*(e) Firm Capacity*

The water company currently has 176 employees of which eighty-two are permanent, and ninety-four are casual workers. The permanent staff deal with managerial, administrative, and supervisory tasks. Some are also designated drivers. The casual workers are mostly assigned to loading and packing.

The machines used in production were installed from 2012–2015 and are sourced from China, as they are the most cost effective. They deal with a company called Ding Ling and also buy some of their water treatment machines to be resold. Chemicals used for treating the water are obtained from Germany, France, and the United States. The company's processes are monitored by a quality control manager that quarterly reviews and updates the process where necessary.

*(f) Expansion*

Golden Age intends to start extruding their own nylon, so they can produce the sachets themselves and sell them on, eliminating the middlemen. Currently, in their biggest market for sachet sales, Abuja, only two to three manufacturers produce, and they are unable to meet the demand. They also want to expand into juice drinks. However, the company's financial strength has limited its growth into other states or products. They have been unable to access funding at reasonable interest rates.

One advantage they have acquired recently is through the intervention of the government to give their company a constant supply of electricity, as their business is seen as vital to the state, and financially viable. The government visited the company to vet them. Mr. Anthony believes it is rare for businesses to be able to get such deals, as only important government buildings or officials get this privilege.

## How the investment climate affects manufacturing performance in Nigeria

**A critical question is how the investment climate affects firm performance.** That is, could Nigeria increase productivity by improving its investment climate? And if so, where would improvement have the greatest impact? Based on an analysis using enterprise surveys from different countries, we can look at how much higher TFP would be if Nigeria's investment climate were more favorable. The methodology is presented in detail in appendix 2 of the background paper.<sup>46</sup> In summary, data from all enterprise surveys were pooled together, and investment climate variables were tested on firm-level performance. Coefficients from this regression were used to then understand impact on productivity if Nigeria improves a particular aspect of its business environment. It is important to note that it is very difficult to fully resolve all econometric issues associated with this analysis, and, as a result, the results should be treated cautiously.

The benefits of improving Nigeria's investment climate depend on two things: how much a particular aspect of the investment climate affects productivity, and how Nigeria's investment climate compares with that of comparator countries. Nigeria's investment climate is more challenging than in most other countries, so the gains from improving it are likely to be large. Table 8 shows the average values for investment climate variables across Nigerian manufacturing firms.<sup>47</sup> It also shows similar values for a median developing country, as well as for a country that was at the twentieth percentile on each measure.<sup>48</sup>

**Across every metric of the enterprise survey, the investment climate in Nigeria is more challenging than the median developing-country level.** Manufacturing firms in Nigeria spend more time meeting regulation requirements, paying more bribes, and losing more to crime, insecurity, and power outages than the median developing country. Manufacturing firms in Nigeria are also less likely to have bank credit, less likely to have their own websites, less likely to license foreign technologies, and less likely to have training programs. They are also less likely to export and less likely to be foreign owned. All of these factors contribute to a lower TFP (see table 8).

**Improving the business environment in Nigeria may lead to important productivity gains in the manufacturing sector.** If Nigeria's investment climate reached the median level within each performance metric measured by the enterprise survey, TFP would be approximately

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<sup>46</sup> G. Clarke, "Firm Performance in Nigeria," background paper, (2015).

<sup>47</sup> See appendix 2 of the background paper for a discussion of these variables and how they are calculated. Note that the bribes, losses due to outages, and crime variables are based on firms that answered in monetary units.

<sup>48</sup> These are calculated by first calculating the weighted average for each variable for each country where enterprise surveys have been completed. We then calculate an (unweighted) median and twentieth percentile for each variable using the country averages. We do not weight the country medians because we do not want the results to be driven mostly by large countries such as China and India.

40 percent higher. If the investment climate reached the level of the developing country at the twentieth percentile within each performance metric, TFP would be approximately 62 percent higher.

**The biggest gains would come from reducing crime, improving access to credit, reducing losses due to power outages, and increasing use of the Internet.** Two areas—electricity and access to finance—were among Nigerian firms’ greatest concerns (see above). This suggests that large gains in TFP would be possible if Nigeria could improve infrastructure, reduce crime, improve access to finance, and increase access to Internet. In contrast, although firms in Nigeria are concerned about corruption (see above), reducing corruption would have only a modest effect on productivity. Even if Nigeria reduced corruption to the levels seen in the best performing countries, TFP would be only about 0.3 percent higher.

**These estimates may actually understate the possible gains from improving the investment climate.** Although the analysis looks at many areas of the investment climate, it does not look at all areas. For example, many Nigerian firms reported that political instability was a serious problem, but this is not included in measures of the investment climate. The country dummies do take into account measures of institutional quality and macroeconomic stability, and findings suggest that Nigeria could further improve TFP if it also improved in these areas.

**Table 8: Increase in TFP if Nigeria Improved Various Aspects of Its Investment Climate**

	Value for Nigeria	Performance of other countries		Increase in productivity if Nigeria improves to:	
		Country at 20th percentile	Median Country	20th percentile	Median
Time dealing with regulation (%)	9.9	5.09	9.41	1.0%	0.1%
Bribes (% of sales)	0.2	0.00	0.01	0.3%	0.2%
Losses to crime (% of sales)	6.3	0.13	0.35	22.6%	21.7%
Losses due to power outages (% of sales) <sup>49</sup>	1.7	0.01	0.11	3.9%	3.7%
% of firms with bank credit	16%	78%	60%	7.3%	5.2%
% of firms with own website	17%	62%	34%	15.0%	5.5%

<sup>49</sup> There is an issue when asking managers what their losses due to investment climate problems are: losses due to crime and security costs, bribe payments, and losses due to power outages. The questions that these three variables are based on are questions that allow the managers to answer either as a percent of sales or in monetary terms. Although this should not matter in principles, earlier studies have shown that managers who answer in monetary terms report significantly lower losses than managers who answer as a percent of sales (Clarke 2011b; Malomo 2013). Moreover, these differences do not appear to be due to observable or unobservable differences between firms whose managers answer as a percent of sales and firms whose managers answer in monetary terms (Clarke 2011b). Although it is not clear whether managers who report as a percent of sales overreport losses or managers who report in monetary terms underreport, it is important to ensure that managers’ responses are comparable. To do this, we regress the reported losses on a complete set of country dummies and a dummy indicating the manager answered in monetary terms. We then calculate responses assuming the manager answered in monetary terms.

% of firms that license foreign technologies	7%	21%	14%	2.1%	1.0%
% of firms with training programs	29%	49%	32%	2.6%	0.4%
Firm is an exporter (dummy)	24%	45%	24%	4.1%	0.0%
Firm is foreign owned (dummy)	3%	17%	8%	3.8%	1.4%
Total Improvement				62.6%	39.1%

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### **Case Study Three: Migcha Foods in Niger State**

#### *(a) History and Ownership*

Migcha Foods was incorporated in 2011. It produces yam flour and operates a shea butter subsidiary. Mrs. Garba, the founder, was a professional agriculturalist in the Niger State Ministry of Agriculture and rose to state director. Mrs. Garba said it felt natural to go into the agricultural sector. She picked yam flour production because Niger State has an abundance of yam in comparison to other states in Nigeria.

Before starting her business, she took a course at the Federal Institute of Industrial Research Oshodi to get trained on technology used to produce pounded yam flour. The course cost around ₦250,000, and she learned the processes involved in yam flour production, got to see the machines used, and tested the difference between fabricated, high quality, and imported products.

The business was funded partly with her retirement savings. She also got ₦200,000 from FADAMA III. She used these funds to start with very small scale production and has been gradually growing the business.

#### *(b) Products*

Migcha Foods' main product is yam flour. Given uninterrupted electricity supply, the business can produce 30 kg a day. However, this is rarely reached because of the unreliability of the power supply in Minna. Additionally, as they are small scale, it is difficult to afford a generator (a secondhand 35 kV generator was quoted to her for ₦2 million). As such, production is sparse, and it is completely dependent on the electricity supplied.

To support the yam flour production, Migcha also runs a small shea butter production business. She is part of what is called a 'cooperative society' that pulls resources together. The society enters into agreements with clusters in villages that farm the shea butter. These clusters produce the shea and sell it in bulk to the cooperative society. The cooperative, in turn, provides all the machinery and training. They also sign an exclusivity agreement with the cluster, so they can't sell to anyone else, but the cooperative agrees to buy up all their production.

For Migcha, it is hard to determine its market share, as it is a small scale business; as far as Mrs. Garba is aware, she is the only yam flour producer in Niger State. On the other hand, there are multiple shea producers.

In terms of pricing, a tub of shea goes for ₦700, but the cooperative usually receives about ₦3 million worth of shea once its clusters have finished production—that is every two or three months. For the flour, a carton of a dozen bags goes for ₦4,800, and an individual bag is sold for ₦450. Migcha plans to cut their pricing when they can produce more.

The products have not been changed since the business started but have been refined, and Migcha aspires to reach the quality of Ayola Foods. They are currently trying to upgrade their packaging, as consumers are very sensitive because of the fear of adulterated products.

*(c) Distribution*

Migcha supplies to supermarkets, exhibitions, trade fairs, and, in some cases, buyers come to order from their office directly.

Most products are sold in Minna, as the company can't sell outside Niger State until they receive a NAFDAC number. This is a very complicated process that has left Mrs. Garba frustrated. NAFDAC had visited their production site for inspection and recommended some minor corrections. She was then asked to bring her product to process in the lab in Kaduna, Lagos, and Abuja. If the results were up to standard, then Migcha would be issued a certificate—this was in 2013. However, after several delays on the institution's side, the product was sent back after nine months, and Migcha was said to have failed their tests. NAFDAC has since asked the business to resubmit its product and promises a more efficient procedure.

*(d) Raw Materials and Suppliers*

The yam used in production is sourced from surrounding markets such as Beji. Migcha has, however, negotiated with farmers to source directly from them, eliminating middlemen. New yams are available from August until December, so there is little storage in this period. The storage period during this time ranges from a day to a week. When it gets to January, they start storing long term for production from May. Migcha stores about 300–500 yams from January, and replaces them as it produces until farmers stop harvesting yams. Migcha says most of its sales are made from May to August when yam is scarce.

*(e) Firm Capacity*

The business currently employs five permanent staff. As for machinery, it has had trouble getting quality machines. At the moment, their current machines operate at about 60–70 percent efficiency.

The machines used are made in Nigeria. The current ones used were fabricated by Akindele and Sons. Migcha plans to change to machines supplied by a freelance engineer from FUT. This will be done if the Bank of Industry approves their loan application. It plans on using the machines for about ten years.

Mrs. Garba believes the firm's capacity is still limited by the funds it has available and the lack of electricity supply. As a result, the company has a pending contract for supplying one tonne of yam flour a week, which it is unable to execute. She is hoping a loan from the Bank of Industry will help improve efficiency and production capacity.

## 5. Main Findings

Overall, the private sector has been experiencing a decline in sales between 2011 and 2013. The southern part of Nigeria was less affected by the economic turmoil than the North. Services were stagnant during the same period while the manufacturing sector was in recession. On the other hand, the data suggest that average employment growth has been positive in all regions. A possible explanation is that entrepreneurs considered the drop in sales there temporary and did not adjust their labor force accordingly.

The private sector in Nigeria faces a wide range of constraints that seem more severe than in any other comparator country. Firm managers are most concerned by electricity, corruption, and access to finance. Power outages appear to be a more serious problem in Nigeria than in other countries, resulting in higher losses, a larger proportion of firms with generators, and ultimately higher costs for electricity and fuel. Corruption is a major issue in Nigeria, in particular for firms located in the north (especially in Kano and Kaduna), and for large firms. Regarding access to finance, although small firms commonly have worse access than large firms, small firms in Nigeria appear to be particularly disadvantaged in this respect when compared to the comparator countries (except Ethiopia). Comparisons with the other benchmark countries also reveal that tax administration is more of a problem than in comparator countries. Overall, the business environment in Nigeria appears unattractive.

Between 2007 and 2014, Nigeria's business environment does not seem to have made significant progress. Most business environment items are similar between the two survey rounds. The main area of progress relates to access to finance. Firms appear to have better access to credit in 2014 than they did in 2007, about 10 percent compared to 31 percent. On the other hand, firms reported greater costs due to crime and insecurity in 2014 compared to 2007.

Regarding the manufacturing sector, results suggest that Nigeria's TFP is low relative to the other comparator countries. However, there are wide disparities across Nigeria. Firms in Lagos compare favorably with other African comparator countries, while firms in other states are lagging behind compared to the other countries. In addition, labor costs are relatively high compared to other African countries, which affects the competitiveness of the manufacturing sector overall. Labor costs in Lagos are too high compared to TFP, and even firms in Lagos are not competitive when compared to the other peer countries. Lastly, Nigerian manufacturing firms are not big investors due to political risk, corruption, or a limited access to finance. This problem appears to be more severe in the north, where corruption is high and firms' access to finance is more limited.

The investment climate in Nigeria is more challenging along every dimension than in the median developing country where enterprise surveys have been completed. Manufacturing firms in Nigeria spend more time dealing with regulations and more time paying bribes and lose more to crime, insecurity, and power outages than in the median developing country. Manufacturing firms in Nigeria are also less likely to have bank credit, less likely to have their own websites, less likely to license foreign technologies, and less likely to have training programs. They are also less likely to export and less likely to be foreign owned. All of these factors lower TFP.

If Nigeria's investment climate were as favorable as in the median developing country on each measure, TFP would be about 40 percent higher. The biggest gains would come from reducing crime, improving access to credit, reducing losses due to power outages, and increasing use of the Internet. Two areas—electricity and access to finance—were among Nigerian firms' greatest concerns.

#### **Case Study Four: Savannah Pelleted Foods in Kano State**

Mr. Alhaji Hussan Sani is the CEO of Savannah Pelleted Foods. He has been in the feed milling business for over ten years. Growing up in Kano as part of a family of traders, he quickly realized the potential of agriculture-allied industries, leading him to study agricultural economics, agriculture, and finance for his undergraduate and masters' studies, respectively.

The company was set up with the support of his family. Although he borrowed part of the initial capital from his siblings, he is the sole owner the company, which is today part of a conglomerate of eight different companies in very diverse sectors, ranging from construction to radio. He makes all the strategic decisions related to the business and seeks support from his family network when he needs capital, as he can borrow from them for no or very little interest.

Today, it is one of the largest producers of feed in the North, producing all types of feed for animals (i.e., livestock, beef fattening, sheep, goat, rabbit, etc.) with production lines worth close to N1 billion.

The company relies on a network of mega-distributors across the country, which ensures a national presence of the company's products. Although the company does not export directly, thanks to these distributors their products can be found in neighboring countries, such as Cameroon, Niger, and Chad. This network has been established through the work of the marketing team, which goes around the country looking for prospective distributors.

The company sources most of its raw material locally, by bulk sourcing grain, such as beans, guinea corn, rice, and bran. Given the volume needed, the company is a dominant actor in some of these markets. It also has long term relationships with some aggregators, but like many agriculture-allied businesses, there is always a certain volatility of supply. When they cannot source what is needed locally, they sometimes source from neighboring countries. The only component of the product that has to be regularly imported is micronutrients that come from Europe but which they purchase through local dealers. However, they are looking into importing these nutrients directly, given these are a costly input that affects their margins.

In terms of labor, the company has outsourced most of its recruitment process to an external firm, with which it has signed a contract. The CEO opted for this option as it reduces the time spent by managers to find and screen appropriate candidates; within two hours a staff can be replaced. Thus, most of the sixty employees (eighty plus in periods of high demand) have been recruited through a formal process, ensuring they meet the standard of the company. Once hired, full-time employees are offered a wage rate slightly above market rate to ensure that time spent training employees is not wasted. In parallel, the company is trying to automate its processes to reduce its cost in the long run.

The production line machines are between two and ten years old; they originate mainly from China. The company's preference for China is based on their ability to deliver customized machines in a relatively short period of time. The company has a team of engineers who can fix most of the technical issues. If a key part is required, the company contacts their Chinese counterpart to replace the damaged part.

## Focus on the Labor Market in Nigeria

**Data from the workforce questions in the Enterprise Survey 2014–15 indicate that Nigerian firms do not have difficulty cutting employment for economic reasons or firing employees who perform poorly.** Rather, labor market failure may arise from the inability of firms to attract workers with the right type of skills.

Labor turnover is defined as the annualized proportion of a firm’s workforce that left the company over the past three years. Looking at labor turnover, we find that:

- The econometric estimations do not point to a correlation between turnovers and wages (see table below). If retention of workers were a problem, an increase in wages would lead to a lower turnover, which means workers would be encouraged to remain in a company because of higher wages. This may suggest that wages are in line with the workers’ expectations. However, we find a negative correlation between having a bonus system and the turnover: employees are more likely to stay in a firm with a bonus system.<sup>50</sup>
- *Labor turnover reflects the current level of output and the sales prospects.* Firms that experience a drop in sales for three successive years are more likely to cut employment (higher turnover). Firms report to sanction poor performers by firing them. Fewer than a quarter of respondents noted that “poor performers are rarely removed from their positions,” while three quarters said that they take action when a worker is not up to the targeted level of performance. However, the labor market seems quite sticky as a vast majority of the firms report an unchanged workforce, despite the decrease in sales (see above). This does not seem to be linked to the labor regulations as only three percent of the firm’s rate *Labor regulations* as a major problem. However, managers tend to keep their employees waiting for economic prospects. Interestingly a third of respondents indicated that they are overstaffed, mainly because they anticipate an upturn in sales.
- The econometric results suggest that firms with a bonus system exhibit a lower turnover.

**The percentage of unfilled vacancies in Nigeria is rather low** (about 4.5 percent). In addition, only a negligible fraction of the respondents indicated that they were understaffed. This result points out to a rather fluid market where filling positions is relatively easy. However, the picture is more mixed when respondents are asked specifically about their last vacancy.

**There are too few manual skills in the south and too few cognitive skills in the north.** In the south, the percentage of firms reporting a problem when hiring decreases with the skills content of the position. Most have no problem filling a managerial position, while about 50 percent have difficulties hiring unskilled production workers. In contrast, the percentage of enterprises reporting a problem seems to increase with the skills content of the position. Most firms complain about the low number of applicants and their lack of required skills.

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<sup>50</sup> C. Blattman and S. Dercon, *More Sweatshops for Africa? A Randomized Trial of Industrial Jobs and Self-employment*, forthcoming, (2014). Some developing countries, such as Ethiopia, suffer from a retention issue. Workers report industrial jobs are poorly paid and most of them quit after a few weeks on the factory floor.

**This situation reflects the huge educational and skills differences between the north and the South.**<sup>51</sup> The percentage of fifteen to twenty-four population engaged in senior secondary and tertiary education—who could apply for positions with a higher skills content—is substantially lower in the north (28 and 25 percent in the North East zone and North West zone, respectively) than in the south (73 percent in the South West). Not only is there skewed access to education, but there are substantial differences in the quality of education. Differences start with basic competencies. Poor learning outcomes—measured by basic competencies such as reading and basic numeracy—appear more severe in the North. The outcomes at the end of the secondary school vary across states. According to the June 2010 NECO (National Examinations Council) exams, on average, 22 percent of registered students completed five credits, the minimum required for university entrance. This rate was very low in the North East and North West zones (7 and 12 percent, respectively) compared to the South East and South South (31 percent). The only exceptions in the north are Kaduna State (20 percent) and Jigawa State (18 percent). As shown in World Bank (2015),<sup>52</sup> the southern part of Nigeria is therefore experiencing an increase in the use of cognitive skills, while skills in the north remain manual. In addition, Giles and Huang (2015) conclude that high-ability young adults are queuing for wage employment.<sup>53</sup> The enterprise survey results suggest that this is mainly happening in the south, while in the north, there is a deficit in skilled workers.

**It takes more time in southern states to fill a position than in the north,** regardless of the type of position. This may reflect the fact that firms in the south have more structured procedures to recruit employees.

**Table 9: Drivers of Labor Turnover in Nigeria**

	(1)	(2)	(3)	(4)
Log wages	0.00175 (0.12)	0.00202 (0.09)	0.0189 (0.79)	0.00830 (0.36)
Upsizing firm	-0.263** (-2.78)	-0.470*** (-3.40)	-0.379** (-2.69)	-0.372** (-2.68)
HR policy	0.335** (3.01)	0.912*** (5.36)	0.779*** (4.51)	0.838*** (4.99)
Written contract	-0.140 (-1.07)	-0.0399 (-0.06)	-0.240 (-0.36)	0.00936 (0.01)
Training	0.0390 (0.38)	0.379* (2.44)	0.319* (2.08)	0.411** (2.70)
Bonus system	-0.0981 (-0.96)	-0.379** (-2.62)	-0.337* (-2.29)	-0.387** (-2.67)
Exporter	0.196	0.300	0.0820	0.189

<sup>51</sup> World Bank, *Nigeria Education and Skills Policy Note 2: Skills for Competitiveness and Employability*, Report No. 96420-NG, (2015).

<sup>52</sup> World Bank (2015), *ibid.*

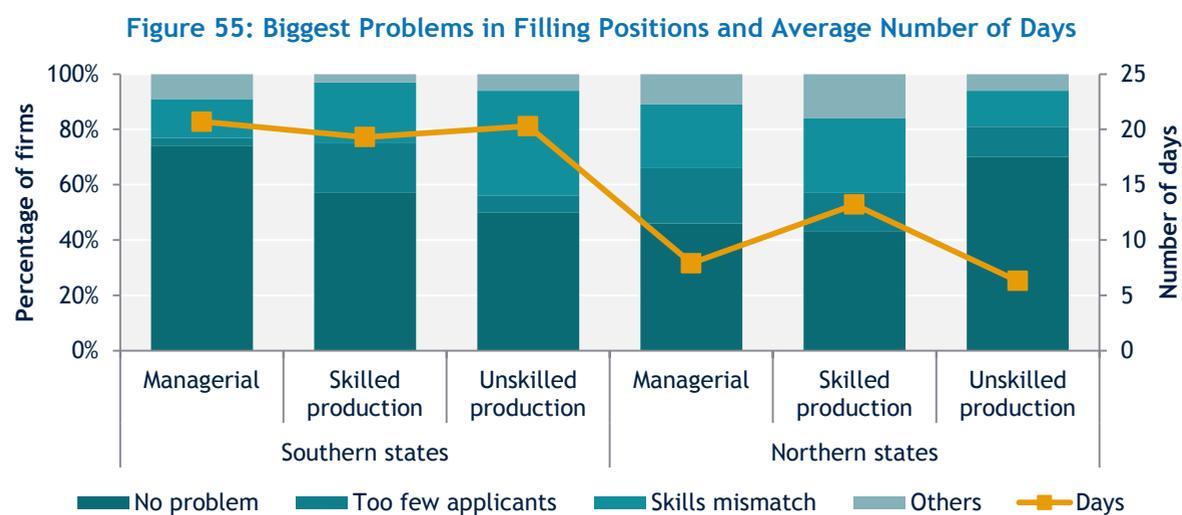
<sup>53</sup> J. Giles and Y. Huang, *Education and Family Background in the Transition to Wage Employment in Nigeria*, World Bank, draft report, (2015).

	(1.41)	(1.42)	(0.39)	(0.90)
Foreign	-0.0609	-0.661*	-0.643*	-0.647*
	(-0.36)	(-2.24)	(-2.18)	(-2.20)
Constant	1.217***	0.828**	0.0602	0.117
	(6.85)	(2.89)	(0.18)	(0.36)
Dummy region	No	No	No	Yes
Dummy states	No	No	Yes	No
Sectors	All firms	Manufacturing only	Manufacturing only	Manufacturing only
r2	0.0175	0.103	0.221	0.141
N	1196	500	500	500

Source: Author's calculations based on data from Enterprise Survey 2014–15

Notes: Statistics in parentheses: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ; Firms are grouped into four regions: Lagos, Kano/Kaduna, other southern states, and other northern states. States refer to the thirty-seven Nigerian states.

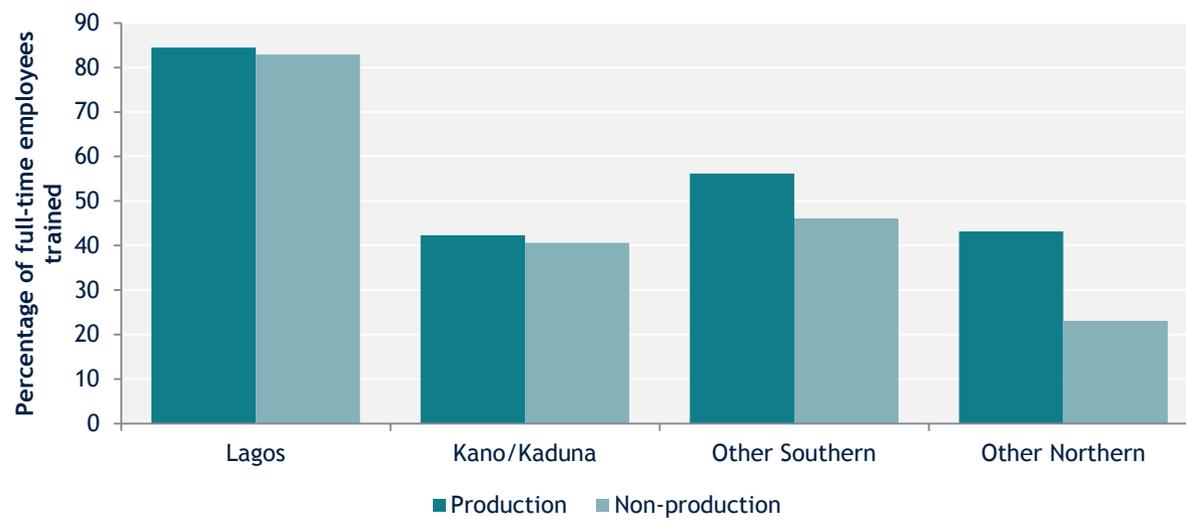
**About 29 percent of firms provide training to increase workers' skills**, compared to 32 percent for the median comparator country and 49 percent for a country at the twentieth percentile. This rate appears higher, on average, in Lagos and Kano/Kaduna (31 and 35 percent, respectively) and lower in the north (25 percent). The percentage of full-time permanent employees trained varies substantially across regions. Firms in Lagos provide training to a much larger share than firms in the North, in particular for nonproduction employees.



Source: Author's calculations based on Enterprise Survey 2014–15 data

To sum up, low productivity in Nigeria comes partly from the poor outcomes of primary and secondary students, and partly from a skills mismatch in the north as well as in the South. Managerial skills are not difficult to find in the South, but the zone has a clear shortage of manual skills. The story is the exact opposite in the North, where there is a pool of unemployed or underemployed population that is able and willing to work as unskilled production workers. This does not mean that their productivity is high, but at least the search costs for the firm are lower. The difference in the quality of the workforce between the north and the south (in particular between the north and Lagos) is accentuated by the lower access to training programs provided by firms in the North.

Figure 56: Percentage of Production and Nonproduction Full-Time Permanent Employees Trained



Source: Author's calculations based on data from Enterprise Survey 2014–15

## Chapter 5: Understanding Firm-Level Innovation and Productivity in Nigeria

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### 1. Introduction

**Innovation is the engine of “creative destruction”** (Schumpeter 1942),<sup>54</sup> which spurs the economic dynamism and transformation at the center of the development process. Innovation accounts for a substantial share of differences in productivity (Romer 1986<sup>55</sup>; Aghion and Howitt 2007).<sup>56</sup> It contributes to the twin goals of shared prosperity and poverty reduction by generating productivity gains that increase employment, raise wages, and improve access to products and services for the poor.

**The objective of this chapter is twofold.** First, the chapter describes the level of innovation in Nigeria. Second, it provides an empirical analysis of whether these innovative efforts translate to increases in productivity.<sup>57</sup> The chapter uses the most recent Enterprise Survey and the linked innovation module. This is the most comprehensive innovation survey implemented in Nigeria to date, as it links a full innovation questionnaire answered by 892 firms in the manufacturing and services sectors with information on the characteristics of firms.<sup>58</sup> This survey was expanded with increased geographic coverage during fieldwork. It began as a nine-state exercise until ten more states were added for a total of nineteen states. For this reason, only the first nine states covered contain the innovation module. The module was administered to firms in the nine states that account for the bulk of the Nigerian private sector namely, Abia, Abuja, Anambra, Cross River, Enugu, Kaduna, Kano, Lagos, and Oyo.

**This chapter is structured as follows:** section 2 describes the level of innovation in Nigeria compared to other countries, looking at both knowledge capital inputs and innovation outcomes. Section 3 investigates the drivers of innovation outcomes. Section 4 examines the link between innovation and firm-level productivity.

### 2. How Innovative Are Firms in Nigeria?

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<sup>54</sup> J. Schumpeter, *Capitalism, Socialism, and Democracy*. (New York: Harper & Bros, 1942).

<sup>55</sup> Paul M. Romer, “Increasing Returns and Long-Run Growth,” *Journal of Political Economy* 94 (October 1986), 102–1037.

<sup>56</sup> P. Aghion and P. Howitt, “Capital, Innovation, and Growth Accounting,” *Oxford Review of Economic Policy*, *Oxford University Press*, 23, (2007), 79–93.

<sup>57</sup> This chapter is a summary of the background paper: X. Cirera, “The Impact of Firm-Level Innovation on Productivity in Nigeria,” (2015).

<sup>58</sup> This dataset provides a larger source of information and sample than the previous enterprise survey in 2007, which had 396 firms but no full innovation questionnaire, or the 2012 innovation survey implemented by the Ministry of Education, Science and Technology (MoEST) on a sample of 160 firms.

**Firms invest in knowledge capital to accumulate capabilities that facilitate innovation** (box 3). These investments determine the extent to which firms are able to introduce innovations, as well as their market success when introducing these innovations. The Enterprise Survey allows us to characterize some categories of knowledge capital inputs for Nigerian firms, namely, expenditures on R&D (both intramural and extramural), equipment, training, and the use of patented processes and other types of intellectual property.

### Knowledge capital inputs—a low investment

**Firms that engage in R&D are more likely to introduce innovations. However, very few firms in Nigeria invest in R&D.** Table 2 demonstrates the R&D incidence (percentage of firms engaged in R&D), intensity (R&D expenditure per worker), and concentration (Herfindahl index for the concentration of R&D value across firms) for firms in Nigeria and across comparator countries. Only 10.5 percent of all Nigerian firms engage in R&D activities, and only 3 percent do both internal and external R&D, which is in stark contrast to the higher rates in India (56 percent of firms), Russia (13 percent), Kenya (23 percent), Ghana (15.5 percent), and the African average excluding Nigeria (18.4 percent).

**Table 10: Investment in Research and Development (R&D)**

	R&D Incidence % of all firms			R&D Intensity \$ per worker	R&D Concentration HHI <sup>b</sup>
	Overall	Internal	External		
Nigeria	10.5%	10.3%	3.0%	359	0.29
India	56.2%	53.0%	7.1%	48	0.07
Kenya	22.8%	22.1%	4.5%	234	0.69
Ghana	15.5%	14.2%	3.4%	602	0.55
Russian Federation	12.9%	11.9%	4.5%	2755	0.27
Africa <sup>a</sup>	18.4%	16.2%	6.9%	242	0.27

Source: Authors' calculations based on Enterprise Survey 2014–15

<sup>a</sup> Africa average, excluding Nigeria and including DRC, Ghana, Kenya, Namibia, South Sudan, Sudan, Tanzania, Uganda, and Zambia. Source: Authors' calculations based on countries' enterprise surveys.

<sup>b</sup> Herfindahl-Hirschman Index.

**Nigerian firms also engage less in other types of knowledge activities, with the exception of acquisition of intellectual property.** Table 11 shows the incidence and intensity of firms' investments in equipment, training, and purchase of intellectual property such as patents and trademarks. Investments in both training and equipment are less common among Nigerian firms than among firms in comparator countries, including the average for Africa. For equipment, the average for Africa is almost twenty points above Nigeria, and for training, the African average is double that of Nigerian firms. The gap with India is even larger.

**Table 11: Investment in Equipment, Training, and Intellectual Property**

	Equipment expenditure		Training expenditure		IP
	Incidence (% all firms)	Intensity (\$ per worker)	Incidence (% all firms)	Intensity (\$ per worker)	Incidence (% all firms)
Nigeria	12.9%	6246	8.6%	281	5.0%
India	68.0%	2327	43.3%	57	4.1%
Kenya	44.1%	2561	32.0%	399	4.0%
Ghana	42.5%	1625	22.5%	138	2.3%
Africa	32.0%	2033	19.9%	276	7.2%

Source: Authors' calculations based on Enterprise Survey 2014–15

<sup>a</sup> Africa average, excluding Nigeria and including DRC, Ghana, Kenya, Namibia, South Sudan, Sudan, Tanzania, Uganda, and Zambia.

**What kinds of Nigerian firms invest in knowledge capital inputs?** The background paper<sup>59</sup> tested four sets of variables: (a) firm characteristics (age and size); (b) the importance of demand factors in incentivizing investments in innovation inputs; (c) market conditions<sup>60</sup> and degree of integration with international markets; (c) access to finance; and (d) complementary technology factors (recently replaced physical assets; licenses to use foreign technology). The empirical results suggest that while size does not seem to affect the probability of investing in R&D, older firms are more likely to do so than younger firms. Regarding the importance of market structure and competition, the coefficient on the duopolistic dummy is not statistically significant, but firms that perceive larger competition from the informal sector are more likely to invest in R&D. Firms that are more financially constrained are less likely to do so. Complementary technology factors also appear to be critical for investing in R&D. Firms that have newer assets tend to be more likely to engage in R&D, as are firms with a foreign technology license. In summary, Nigerian firms that are older, are less financially constrained, possess better technology complements, and face more competition from the informal sector are more likely to invest in knowledge capital inputs.

<sup>59</sup> X. Cirera, *The Impact of Firm-level Innovation on Productivity in Southern States in Nigeria*, (2015).

<sup>60</sup> Market condition variables include: (a) whether firms face one or two competitors in the market, (b) export and import dummies, (c) the degree to which practices of the informal sector are an obstacle, (d) whether firm demand has increased (determined by evaluating revenue or employment growth).

### Box 3: Measuring Innovation

In general, any sound analysis of innovation activity should have a combined focus on knowledge capital inputs and innovation outcomes.

*Knowledge capital inputs* consist of both tangible assets (technology, equipment, physical production facilities) and intangible assets (human capital, scientific and creative capital, organizational capital). These activities are grouped into five categories (not all of which are covered in the Enterprise Survey):

- *Research and development*: Firms were surveyed on the source of R&D (internal vs. external) as well as R&D expenditures.
- *Capacity building*: Firms reported on training provided as a result of new innovations, as well as related expenditures.
- *Purchase/licensing* of inventions or other knowledge forms: Firms reported on expenditures to purchase inventions or intellectual property that helped them come up with innovations.
- *Acquisition of business intelligence*: Firms reported on the key sources of information and ideas for their innovative activities.
- *Intellectual property*: Firms reported on whether they applied for patents, utility models, trademarks or copyright design, or registered an industrial design.

*Innovation outcomes* are grouped into four categories (results are subjective, based on self-reporting):

- *Product innovations* are essentially new, redesigned, or substantially improved goods or services. The survey uses three metrics: (a) new products to the firm, (b) significantly improved products, and (c) new products to the market.
- *Process innovation* is the implementation of new or significantly improved production or delivery methods (including significant changes in techniques, equipment, and/or software). Process innovations include (a) innovative methods for manufacturing products or offering services; (b) innovative logistics, delivery, or distribution methods; and (c) innovative supporting activities for processes, such as maintenance systems or operations for purchasing, accounting, or computing. Minor changes or improvements, simple capital replacement or extension, and other routine business activities are not considered innovations.
- *Organizational innovations* are of two main types: structural and procedural. Structural innovations are meant to impact responsibilities, accountability, command lines, information flows, and the division of functions (research and development, production, human resources, financing). Procedural innovations consist of changes to procedures and processes within the company, such as simultaneous engineering or zero buffer rules.
- *Marketing innovations* are changes made to incorporate the advances in marketing science, technology, or engineering to increase the effectiveness and efficiency of marketing to gain competitive advantage.

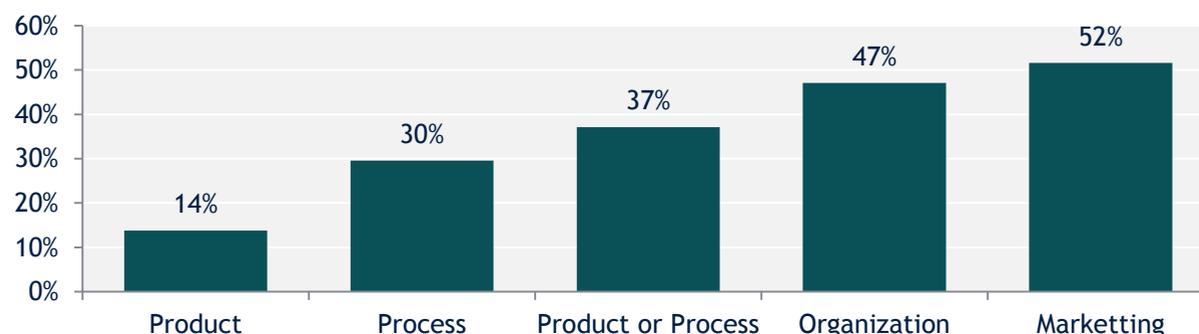
For each of these outcomes, the Enterprise Survey includes firm-level information about the number of innovations introduced; impact on the firm's operations; the level of automation resulting from their adoption; the level of novelty of the innovation at each market level; the channels used to acquire business intelligence; the acquisition of talent as part of the innovative process; the level of collaboration in the development of the innovation; and the impact of the number of staff (skilled and unskilled) on the adoption of innovation.

### Innovation outcomes—low innovation rates

As detailed in box 3, this section discusses the differences between Nigeria’s two technological outcomes—production innovation and process innovation—and its two nontechnological innovations—organizational innovation and marketing innovation.

**Nigerian firms have a low degree of technological innovation.** In 2014, only 14 percent of Nigerian firms introduced a product innovation, and around 30 percent introduced a process innovation. Technological innovations, product or/and process, were introduced by 37 percent of firms in Nigeria. Nontechnological innovations are, however, more prevalent. Organizational innovations were introduced by 47 percent of firms, while more than half of firms introduced some type of marketing (Figure 57).

Figure 57: Firm-Level Innovation Outcomes



Source: Authors’ calculations based on Enterprise Survey 2014–15

**Product innovation rates in Nigeria are the lowest among comparator countries and less than half the African average.** While Nigeria’s performance in process innovation is on par with other African countries, its rates of product innovation are less than half the African average. Even while its performance in both types of nontechnological innovations—organizational and marketing—is above the African average, its poor performance in product innovation is most notable (table 12).

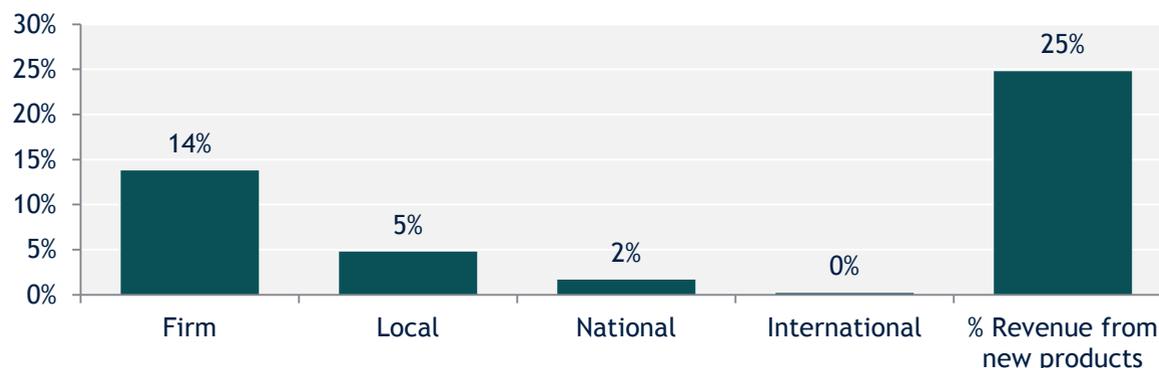
Table 12: Innovation Rates in Nigeria and Comparator Countries

	Product	Process	Product or Process	Organization	Marketing
Nigeria	13.8%	29.6%	37.1%	47.1%	51.6%
India	58.1%	66.2%	91.1%	55.1%	63.8%
Ghana	17.1%	25.3%	36.3%	30.5%	51.9%
Kenya	25.4%	26.4%	43.8%	35.9%	39.0%
Russia	20.5%	16.8%	28.2%	67.7%	-
Africa	27.2%	30.7%	46.5%	40.6%	46.1%

Source: Authors’ calculations based on Enterprise Survey 2014–15. No information was available for Russia on marketing innovation.

**Most product innovations are new only to the individual firm.** Only 5 percent of all firms introduced product innovations that are new to the local market, only 2 percent introduced product innovations new to the national market, and no Nigerian firm introduced an innovation that was new to the international market. Despite this very incremental innovation pattern, revenues from innovations are relatively high; around 25 percent of total revenues for innovating firms come from these new products (Figure 58).

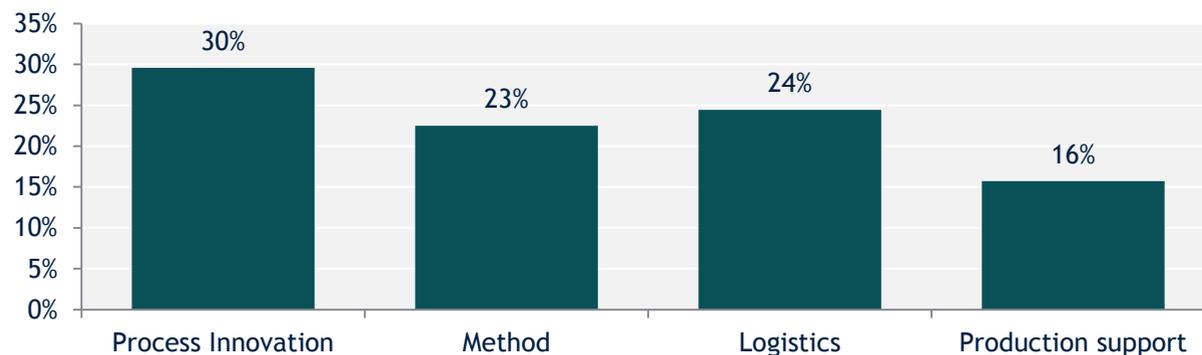
**Figure 58: Level of Product Innovativeness in Nigeria (Percentage of All Firms)**



Source: Author's calculation based on Enterprise Survey 2014–15

**Regarding process innovation, firms seem to introduce different types of process,** as shown in Figure 59. The main type of process innovation is related to innovation in logistics (24 percent of firms). The second type of innovation is new methods for production or offering services (23 percent of firms). Finally, 16 percent of firms introduce new supporting activities for production processes.

**Figure 59: Types of Process Innovation in Nigeria (Percentage of All Firms)**



Source: Authors' calculations based on Enterprise Survey 2014–15

### 3. The Determinants of Innovation Outcomes

**Firm characteristics have explanatory value for innovation rates.** Table 13 shows the tabulations of the main innovation outcomes by sector and type of firm. Innovation rates are higher in manufacturing than in services, albeit low for product innovation. The innovation gap between manufacturing and services is more pronounced for technological than for nontechnological application. The basic metals industry appears to be the most technologically

innovative, while publishing and printing and wholesale are the least innovative. In terms of organizational innovation, garments and food—both labor-intensive industries—perform with the highest innovation rates, while wholesale trade and nonmetallic mineral products tend to be less innovative. Finally, empirical findings suggest that younger firms tend to have a greater innovation intensity.

**Firms with international exposure show higher innovation rates.** In relation to firms' foreign exposure, international traders, and especially importers, are more innovative than nontraders. This is similar to what is observed in other countries. However, contrary to what is found in other African countries, innovation rates of foreign-owned firms are lower than those for national firms.

**Table 13: Innovation Rates by Sector and Type of Firms**

	<b>Product</b>	<b>Process</b>	<b>Product or process</b>	<b>Organization</b>	<b>Marketing</b>
Hotels and restaurants	13.5%	17.0%	27.2%	57.7%	67.6%
Manufacturing	8.2%	35.5%	38.3%	61.3%	47.9%
Wholesale and retail	9.6%	26.7%	33.6%	17.2%	43.1%
Food	5.4%	39.8%	43.5%	67.1%	58.4%
Garments	13.2%	38.1%	44.9%	78.9%	53%
Publishing, printing	4.8%	20.0%	20.0%	48.4%	65.7%
Nonmetallic mineral products	9.6%	16.2%	17.5%	10.0%	49.2%
Basic metals, products	29.2%	54.3%	56.7%	45.7%	45.8%
Furniture	8.5%	30.2%	34.6%	56.9%	25.1%
Motor vehicle services	19.2%	16.1%	27.4%	44.7%	27.3%
Wholesale	1.2%	24.5%	25.3%	5.5%	10%
Retail	8.5%	41.9%	46.2%	20.7%	55%
Hotels & restaurants	21.7%	18.4%	33.4%	65.6%	67.6%
Age <5	29.1%	36.6%	62.9%	59.0%	43.6%
Age 5–9	24.0%	24.4%	41.1%	38.2%	53.2%
Age 10–14	7.3%	25.8%	30.6%	16.0%	49.4%
Age 15–19	23.0%	25.1%	37.5%	42.0%	37.2%
Age 20+	9.9%	39.7%	41.1%	65.2%	58.3%
Small (<20)	12.7%	27.7%	34.8%	54.1%	50.4%
Medium (20–99)	17.1%	35.7%	45.6%	30.8%	44.5%
Large (100 and over)	26.4%	50.4%	57.6%	59.0%	48.7%
No trader	13.6%	27.4%	36.1%	47.7%	47.4%
Importer	23.7%	59.1%	62.2%	48.7%	72.2%
Exporter	14.8%	26.2%	30.1%	40.3%	59.2%
Two-way trader	34.6%	37.8%	47.1%	45.0%	63.9%
National	14.1%	30.2%	38.1%	47.2%	51.6%
Foreign	12.4%	28.6%	31.3%	47.6%	51.2%

Source: Authors' calculations from Enterprise Survey 2014–15

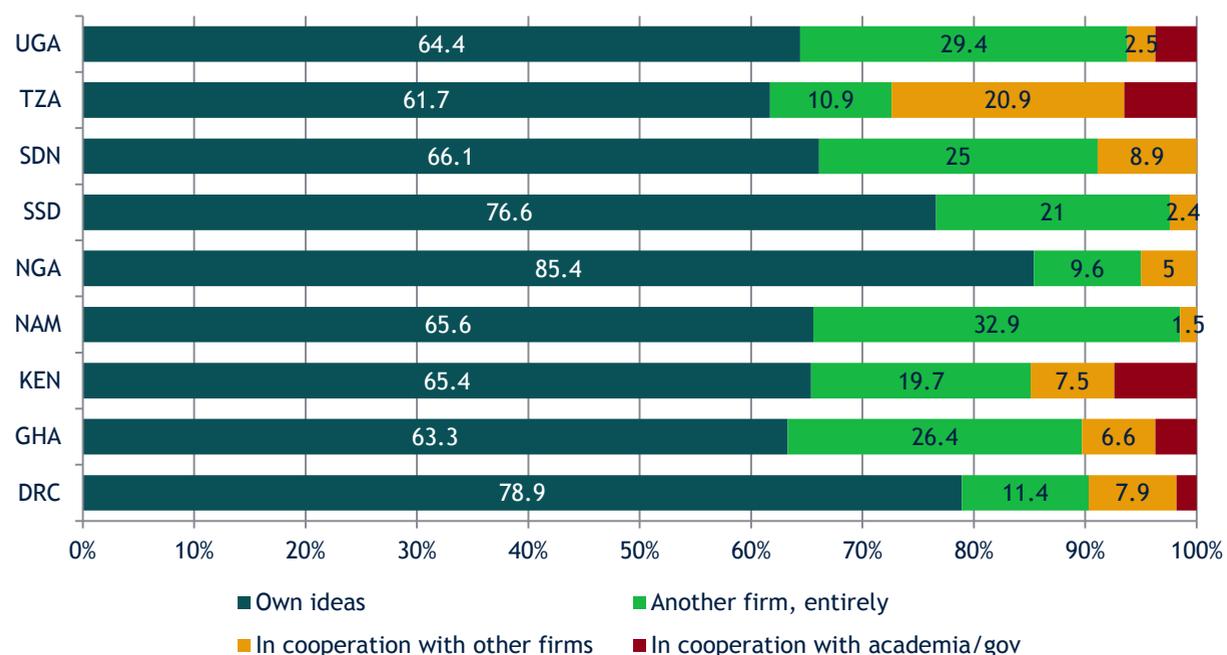
**Firms that engage in R&D are more likely to introduce innovations.** The econometric results—detailed at length in the background paper—indicate that investing in knowledge activities via R&D increases the probability, as well as the intensity, of introducing a technological innovation. The tables and methodology are detailed in the background paper.

**Other factors, such as market competition, spillovers, and agglomeration seem to affect a firm’s willingness to innovate.** Firms operating in a monopolistic market are less likely to introduce innovations, which implies that competition may be an important determinant of innovation. In a more competitive market, firms are incentivized to introduce novelty and new products in order to increase their market share. Regarding the introduction of technological innovations, having more innovators in the vicinity increases the probability of introducing a product or process innovation, although not its intensity. Regarding innovation intensity, location in a city with a high concentration of business activity as a proxy for agglomeration increases the intensity of innovation. Younger firms also tend to have more innovation intensity.

### Characteristics of innovative processes

**Firms in Nigeria do not cooperate to develop product innovations, and there are no innovation linkages with academia or government institutions.** One important element to consider regarding innovation is how it is developed. The Enterprise Survey asked the extent to which innovations are developed in the enterprise or in cooperation with other firms or institutions. In the case of product innovations, Figure 60 shows how innovations are developed in our sample of African countries. We classify the sources of product innovation in four groups: (a) developed using own ideas in the enterprise, including the hiring of specialized staff or companies; (b) developed in cooperation by other firms or consultants; (c) developed by other firms; and (d) developed in cooperation with academia or government institutions. The figure shows that Nigeria exhibits the lowest degree of cooperation among countries in the region. Approximately 85 percent of firms with a product innovation develop it entirely in-house. In addition, innovation linkages with university and academia are absent. The limited external cooperation in the development of product innovations in Nigeria suggests that innovations are bounded by the internal capabilities of the firm.

Figure 60: How Were Product Innovations Developed?



Source: Authors' calculations based on Enterprise Survey 2014–15

#### 4. The Impact of Innovations on Firm-Level Productivity

The empirical results presented in this chapter are estimates from a model that simultaneously solves three different equations, representing the logical framework between innovation and productivity (the Crépon-Duguet-Mairesse model).<sup>61</sup> The details are provided in the background paper. This section focuses on sales per worker as a proxy for labor productivity, thereby looking at the relationship among knowledge capital inputs,<sup>62</sup> innovation outcomes,<sup>63</sup> and labor productivity.

**Innovation in Nigerian firms does not appear to have an impact on productivity.** The estimation does not provide evidence of positive and statistically significant returns to innovation. Neither the coefficient on technological (process or product) innovation, nor the coefficient on innovation intensity, is statistically significant. This is likely the result of very low investment in knowledge capital and limited cooperation on innovation, which significantly constrains the quality of innovations introduced. The fact that firm-level product innovations

<sup>61</sup> B. Crépon, E. Duguet, and J. Mairesse, “Research and Development, Innovation and Productivity: An Econometric Analysis at the Firm Level,” *Economics of Innovation and New Technology*, 7(2), (1998), 115-158.

<sup>62</sup> Although there is information in the intensity of the knowledge capital investment, this tends to be incomplete since firms tend to underestimate the amount spent in such activities. As a result, the knowledge capital is introduced in the equation using a dummy index with value 1 if the firm engaged in R&D activities and value 0 otherwise.

<sup>63</sup> Two innovation outcomes are used in the estimation: (a) technological innovation as the introduction of a new product or process that is new to the firm, and (b) the share of sales due to innovative products in the last three years to measure intensity of innovation.

include mostly marginal improvements may also explain the findings. These results also hold when we look exclusively at more radical innovations, which significantly calls into question the quality of innovation among Nigerian firms.

**These results are contrary to most findings of the empirical literature on OECD countries but similar to those estimated for developing countries.** Mohnen and Hall (2013)<sup>64</sup> provide a literature review of the empirical evidence and suggest that, in most studies for OECD countries, the innovation dummy representing technological innovation is found to increase productivity. However, when the impact for product and process innovation is explored separately, there is more heterogeneity of impacts, and for innovative sales the coefficients are mainly positive. In this study, and in line with other evidence in developing countries such as Goedhuys (2007)<sup>65</sup> for Tanzania and Cirera (2015)<sup>66</sup> in Kenya, we find no impact of innovation in Nigeria.

## 5. Conclusions and Policy Implications

**This chapter presents several important findings.** The innovation landscape in Nigeria is mainly characterized by low investment in knowledge capital, such as R&D and training, which results in low rates of technological innovation, especially product innovation and upgrading. This low innovation rate is even more acute when the country is compared with peer countries and regional partners. The extent of nontechnological innovations in Nigeria is more consistent with other peer countries and the Africa region average, although still below countries such as India with similar income per capita.

**A second finding is that most innovation is developed internally, and there is little cooperation with other firms.** Cooperation with universities and government research centers is nonexistent. This limits innovation to the capacity of individual firms and likely explains some of the low innovation outcomes observed, especially for product innovation. The competition policy is also an important factor that explains the low level of innovation in Nigeria.

**A third finding that follows from the previous findings, namely, the small number of innovation outcomes, is that statistically significant returns to innovation are absent, even when considering higher degrees of radicalness or novelty.** This indicates that firm-level innovation in Nigeria is likely to be very incremental and of low quality.

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<sup>64</sup> Pierre Mohnen and Bronwyn Hall, “Innovation and Productivity: An Update,” *Eurasian Business Review, Eurasia Business and Economics Society*, vol. 3(1), (June 2015), 47–65.

<sup>65</sup> M. Goedhuys, “Learning, Product Innovation, and Firm Heterogeneity in Developing Countries: Evidence from Tanzania,” *Industrial and Corporate Change*, 16, (2007a), 269–292.

<sup>66</sup> Xavier Cirera, “Catching up to the Technological Frontier?: Understanding Firm-Level Innovation and Productivity in Kenya.” World Bank Group, Washington, DC, (2015).