

Nigeria: Selected Issues



NIGERIA

SELECTED ISSUES

February 2023

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NIGERIA

SELECTED ISSUES

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Approved By
**the African
Department**

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FOOD INSECURITY IN NIGERIA: FOOD SUPPLY MATTERS¹

A. Background

1. Food security has become a major policy issue in many countries with the increase in food prices worldwide. Food security is defined as having sufficient food to generate a calorie requirement of about 2200-2300 calories per day for adult females and 2900-3000 calories per day for adult males (see Box 1 for various food security benchmarks). Children require a lower calorie level to maintain themselves in adequate health. In 2022, countries that are highly dependent on food imports have seen a spike in food inflation, as the war in Ukraine and associated supply shortages caused sharp price hikes for wheat and other staples on top of high fuel and transportation costs resulting in a deterioration in food security. The prices of staple food in sub-Saharan Africa (SSA) have surged by an average of 23.9 percent in 2020-22 (Okou, Spray, and Unsal, 2022).

2. Food insecurity is elevated in Nigeria. Using the September 2018 to October 2019 household survey of expenditures, the cost of achieving 2251 calories per day (age-weighted caloric need for food security), is about 82,000 naira per person per year. Based on this survey, about 40 percent of the Nigerian population is identified as food insecure. Mekonnen et al. (2021) show similar results using the same data survey, arguing that about 28 percent of the population was food insecure based on the cost of a diet with localized food preferences that achieves food-based dietary guidelines.²

3. Further, acute food insecurity has likely risen in Nigeria since the last household survey in 2019, given the adverse impact of the COVID-19 pandemic and the surge in food inflation in 2022. In Nigeria, food inflation rose to 23 percent in September 2022. Unlike better-off households who can afford a wider range of foods, the poor have very few substitutes for staples, which make up nearly two-thirds of their daily diet. Data from the World Food Program (WFP) in November 2022 for 26 states in Nigeria and the Federal Capital Territory (FCT) show that the share of those in stressed food security situations with minimally adequate food consumption is at 34 percent of the population (levels 2 and above).³ The acute food insecure population has

¹ Chapter prepared by Alun Thomas and Rima Turk. Acknowledgements go out to the Foreign Commonwealth and Development Office for helping organize meetings with input suppliers in Nigeria during summer 2022, Jesmin Rahman, and attendees at seminars organized by the Central Bank of Nigeria and the African department at the IMF.

² A diet that respects sustainability of food production by consuming less dairy and meat (EAT-Lancet diet) is more expensive than the average Nigerian diet, because the average Nigerian consumes very little dairy and meat. For this diet, the food insecure level is just over 40 percent of the population.

³ The phases of food insecurity rank from level 1 (none/minimal) to level 2 (stressed), level 3 (crisis), level 4 (emergency), and level 5 (catastrophe).

risen by 5.4 million people to 17 million over the past year (almost 9 percent of the respective population).^{4,5}

Box 1. Definitions of Food Security Benchmarks

The basic food security benchmark is the cost of an **energy sufficient diet** that provides adequate calories per day based on one basic starch staple (usually maize, wheat or rice). The cheapest starchy staple is used to obtain the cheapest diet that achieves caloric sufficiency. For the Food and Agricultural Organization (FAO) analysis, a 30-year-old woman is chosen as the benchmark person and the energy intake for this person is 2329 calories per day. The estimate used for Nigeria is slightly lower at 2251 calories per day and is a weighted average of the minimum caloric intake for women (2117), men (2900) and children (783-2958, depending on age).

The **nutrient adequate diet** provides adequate levels of all essential nutrients for a healthy life through a balanced mix of carbohydrates, protein, fat, vitamins and minerals. It reflects the minimum cost that meets all nutrient requirements. The nutrient diet achieves its mix of nutrients based on food-based dietary guidelines (FBDG). Since a recent FBDG does not exist in Nigeria, studies have used the FBDG from Benin as a reference point. Foods are broken up into starchy staples (maize, rice, cassava), protein-rich foods (meat, fish eggs), dairy (yoghurt, local cheese), vegetables (leaves, carrots), fruits and fat. The number of recommended servings per food category is used to generate the nutritional requirements and linear programming is used to calculate the least cost bundle.

Source: Global Report on Food Crises, 2022, Food Security Information Network

4. This paper presents stylized facts about food insecurity in Nigeria, investigates its drivers in a cross-country setting, and assesses the role of policies. Section B describes regional aspects of Nigeria's food insecurity and compares the impact of COVID-19 and the war in Ukraine on food security in Nigeria and other countries. Section C provides an overview of agricultural production and consumption in Nigeria. Section D investigates the drivers of food security using an empirical cross-country framework including demand, supply, and price factors, and offers thoughts on policies to improve agricultural yields and production. Section E summarizes key agricultural support policies in Nigeria to secure food availability and their effectiveness. Section F concludes.

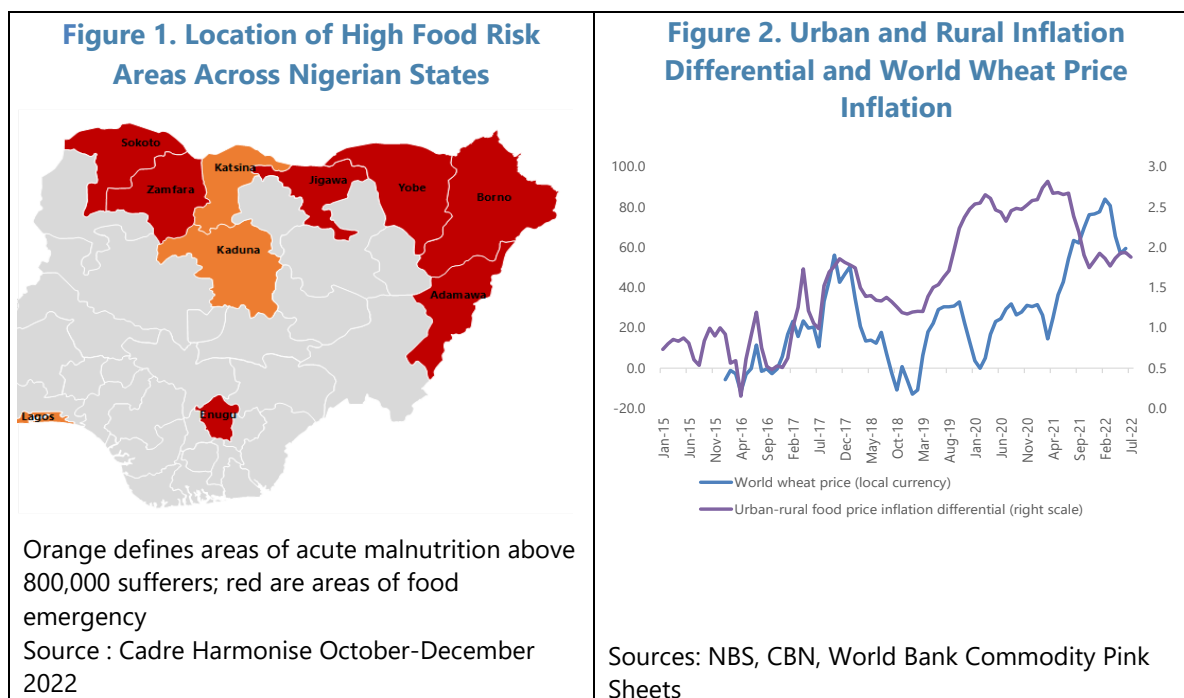
B. Stylized Facts About Food Insecurity in Nigeria

5. Food insecurity varies across regions in Nigeria and rural-urban settings. According to the 2018/19 household survey, the North-East and North-West regions have the most acute levels of food insecurity, and this is confirmed by data from the recent Cadre Harmonise surveys (Figure 1). The household survey also found large differences in food insecurity estimates between urban (18 percent) and rural areas (52 percent), a view also supported by Mekonnen et al. (2021).

⁴ This total corresponds to food insecurity at level 3, defined as acute malnutrition, with households being able to minimally meet their food needs only by depleting essential livelihood assets or by engaging in crisis-level coping

⁵ The report analyzed 194 million people in 26 states and the Federal Capital Territory, or 88 percent of total population in Nigeria.

However, the urban-rural food inflation differential has been positive in recent years, possibly indicating a more nuanced impact of global prices on rural food inflation due to heavier reliance on home production (Figure 2). Household survey data reveals that the median rural family produces 35 percent of its food consumption at home, with this ratio rising to 39 percent for families below the food security threshold (82,000 naira per day). In contrast, urban families only produce 5 percent of their food needs at home at the median, suggesting that poor urban families are more sensitive to rapid changes in food prices.



6. Food security in Nigeria is worse than in comparator countries, and its position has deteriorated since 2019. We chose a set of 14 countries based on income, geographic location and other similarities and two commonly used indicators to conduct an analysis of Nigeria’s relative food security (see Box 2 for details). A simple plot of the European Intelligence Unit (EIU) and the International Food Policy Research Institute (IFPRI) indices for Nigeria and comparator countries reveals a high positive correlation between the two proxies of food insecurity (Figure 3). This figure illustrates that Nigeria ranks near the top for both indicators of food insecurity relative to the comparator countries. While its global hunger estimate improved in absolute terms over time (though not in comparative terms), very little improvement is visible on the EIU food insecurity scale. In 2019, prior to the start of covid, Nigeria was ranked at 97 out of a total of 113 countries, with only Angola, Burundi, Ethiopia and Sierra Leone worse among SSA countries. The best performing country in the comparator sample is China, ranked at 34. Since 2019, Nigeria has maintained its EIU food security score but given improvements in Ethiopia and Angola, it is now the worst ranked among the comparator sample (Figure 4).

Figure 3. IFPRI Global Hunger Index vs EIU Food Insecurity Index

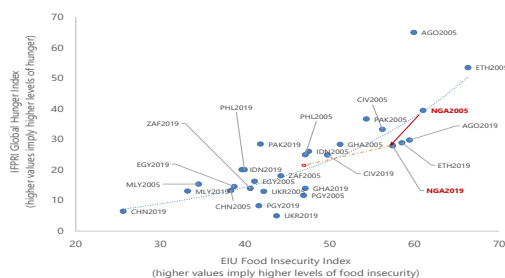
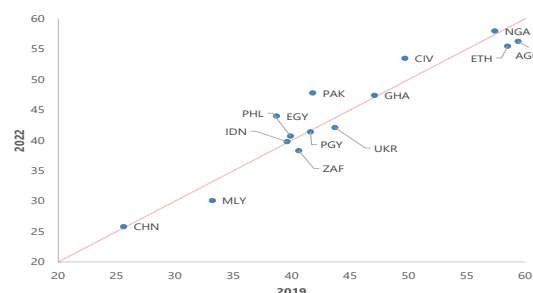


Figure 4. EIU Food Insecurity Index Score (2019 vs 2022)



Source: IFPRI Global Hunger Index and EIU Food Security Index

Table 1. Nigeria: Choice of Comparator Countries and Indicators for Food Security Analysis

Choice of Comparator countries

Three groups of countries are selected as the benchmark: (i) those that are close to Nigeria in terms of real per capita incomes in 2000 valued at PPP exchange rates; (ii) other countries in Sub-Saharan Africa (SSA); and (iii) non-SSA countries with large populations and sizable commodity exports, such as Indonesia and Malaysia. Except for some countries in SSA (Angola, Ghana, Cote d'Ivoire), all comparator countries appear in the detailed FAO/OECD database on yields per crop

Comparator country group for Nigeria

(Inverse Order of Real GDP per Capita Values in 2000)

Country	Real GDP per Capita in 2000 (At 2011 PPP Exchange Rate)	Agricultural Growth Rate (2000-19, Average)	Global Food Security Index in 2022 (Higher Values Indicate Greater Security)
Ethiopia	618	6.1	44.5
Ghana	2259	3.7	52.6
Nigeria	2848	5	42
Angola	2873	5.8	43.7
Cote d'Ivoire	2948	n.a.	46.5
Pakistan	3495	2.5	52.2
China	3701	3.9	74.2
Philippines	4224	2.8	59.3
Ukraine	4797	4	57.9
Indonesia	5806	3.6	60.2
Paraguay	6085	5.9	58.6
Upper middle income	7226	3.4	
Egypt, Arab Rep.	7388	3.3	56
South Africa	9539	2.5	61.7
Malaysia	16310	2.7	69.9

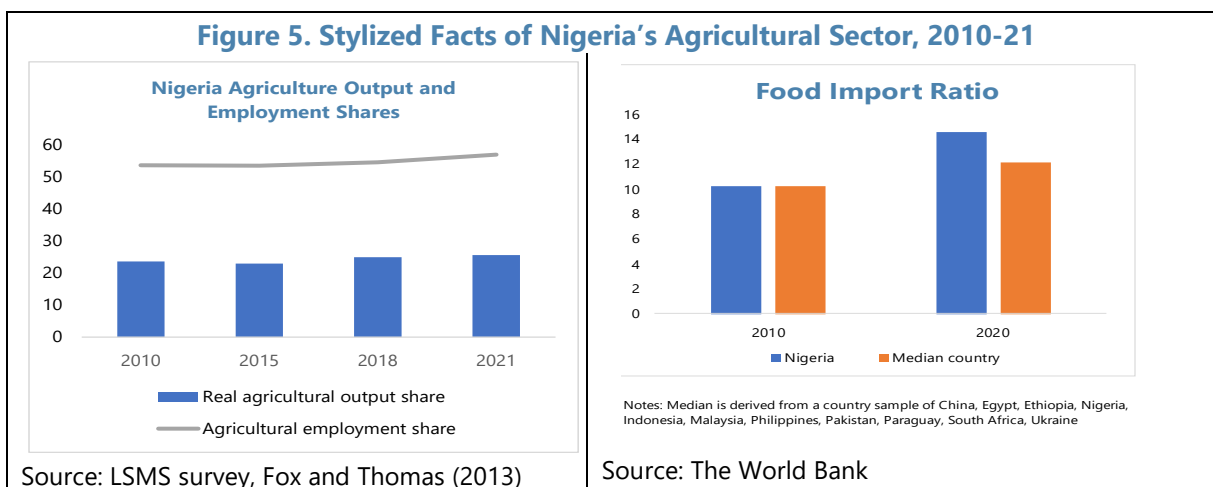
Table 1. Nigeria: Choice of Comparator Countries and Indicators for Food Security Analysis
(concluded)

Choice of indices

Two closely related indices are considered to assess developments in food insecurity between countries over time. One measure developed by the Economist Intelligence Unit (EIU) ranks countries along three dimensions namely affordability, availability, and quality and safety of food, with each dimension based on a set of indicators drawn from either direct data sources or qualitative scoring methods. A separate measure developed by IFPRI (the global hunger index) is based on four indicators, namely the proportion of undernourished in the population and child wasting, stunting, and mortality for children under 5 years.

C. Agricultural Production and Consumption in Nigeria

7. Agriculture is a key economic sector in Nigeria. It represents about 23 percent of real GDP and has remained at this level over the past decade. Its share in employment is considerably higher at 51 percent (2018/19 household survey) and this ratio is estimated to have risen subsequently associated with the weakness in industry and services output in 2019/20 and an absence of notable structural transformation of the economy (Jayne et al. ,2017).



8. Most staple foods in Nigeria are produced domestically, but the food import ratio remains high (Figures 5 and 6). Food consumption makes up over 50 percent of the total consumption basket and food availability plays an important role in the welfare of Nigerians. The major carbohydrate food category is roots and tubers, which has a food consumption weight of 20 percent in Nigeria’s food basket, along with maize (6 percent weight in the food basket), and both are almost fully supplied domestically (Figure 6). Rice and vegetable oils are both produced domestically and imported, while the share of rice imports in consumption has fallen slightly over time due to CBN policies that restrict access to FX for importing rice. As for wheat and sugar, they are completely imported despite a recent impetus to start domestic production. In aggregate, dependence on imported food has risen over the past decade in Nigeria. At 14 percent in 2020, it surpasses the median country in the comparator sample, although the data fluctuates considerably across years reflecting highly variable food prices compared with other import categories.

9. The increase in the per capita food aggregate over time indicates that Nigeria’s agricultural production has kept up with the growing population at the aggregate level, though sizeable differences exist across staples. Per capita consumption of roots and tubers and pulses (basic staples) is much higher in Nigeria than in the median sample country (Figure 7). In contrast, per capita consumption of rice and wheat—staples that provide the major source of carbohydrate in other countries—is considerably lower in Nigeria than in other countries (sample mean represented by Egypt and Paraguay, respectively). When aggregating the carbohydrate dense foods (maize, rice, roots and tubers and wheat), cross country differences become less evident, with Nigeria converging toward the sample median (Philippines in this case). There is however significant cross-sectional variation in consumption across Nigeria’s population. For example, staff analysis shows that the consumption premium of families with unemployed and college educated individuals and wage workers is up to over 50 percent compared with families with agricultural workers and regional disparities accentuate the differences even further (SM/21/210).

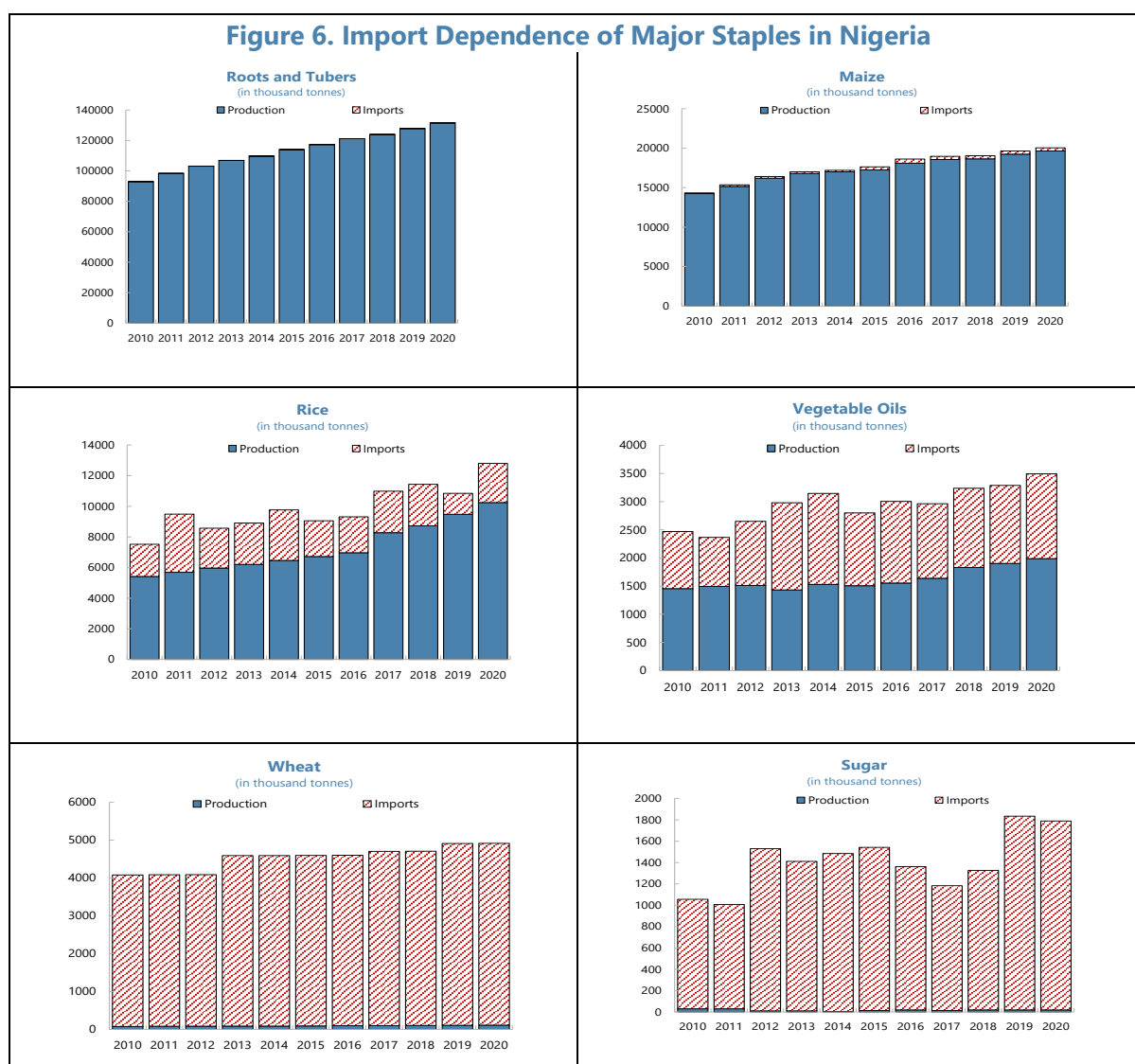
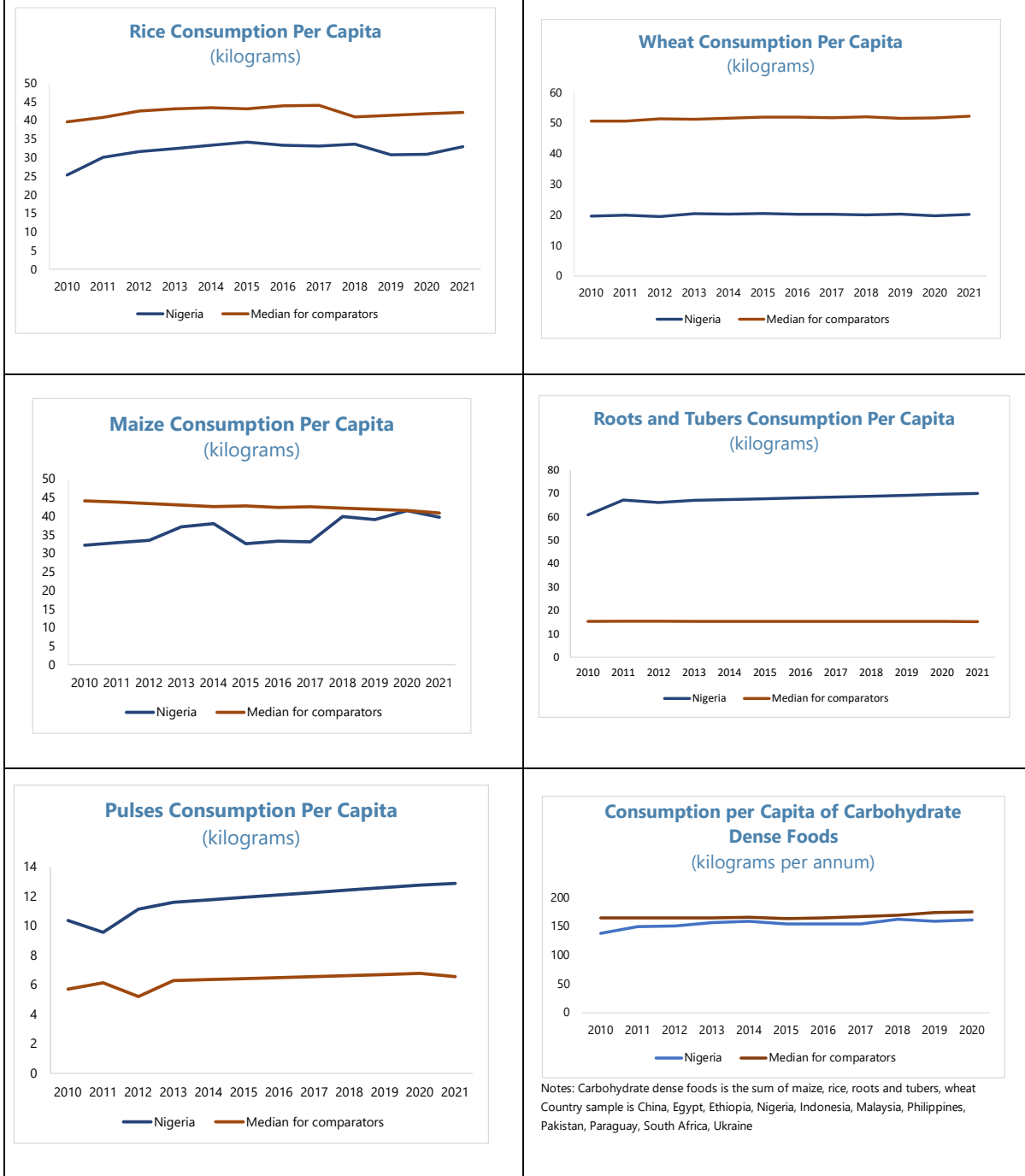


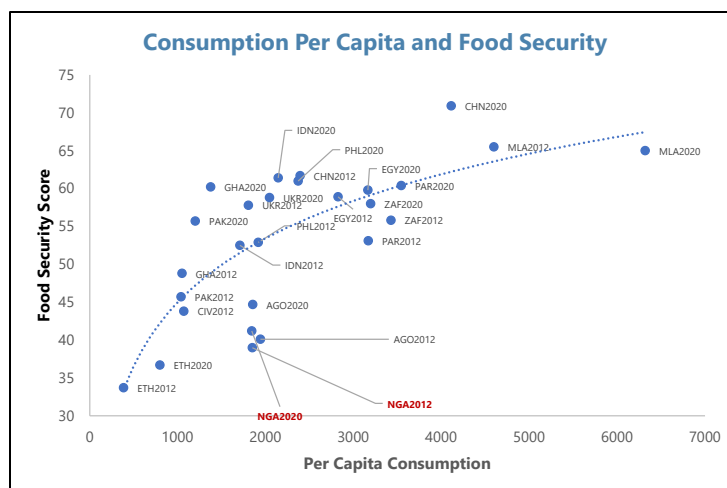
Figure 7. Consumption per Capita of Key Staples



D. Drivers of Food Security Over Time: Role of Demand, Supply, and Price Factors

10. On the demand side, consumption per capita is expected to be an important determinant of food security.

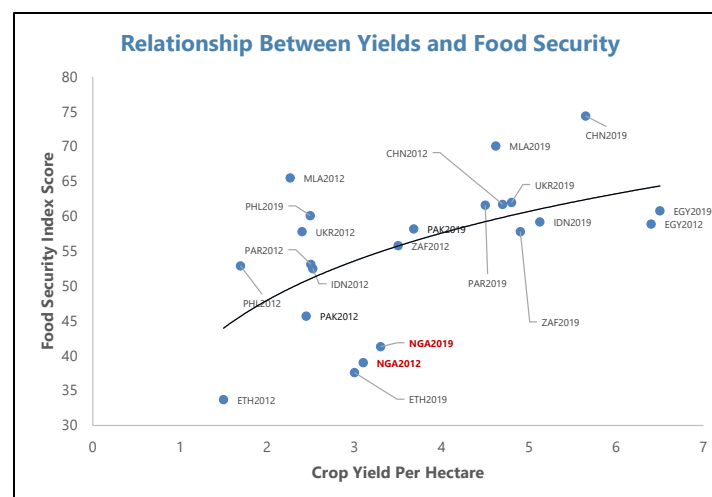
For the population to be adequately nourished, it is important to be able to demand food in sufficient quantities, for food to be supplied, and for the price to be kept at an affordable level. Previous work on the determinants of the demand for food have highlighted the role of consumption/GDP per capita in PPP terms since, by definition, higher consumption per capita should lead to greater food



security because of its role in increasing calories (Allee et al. (2021) and Cai et al. (2020). The text chart shows a tight relationship between per capita consumption and the EIU food security index (the initial and most recent matched datapoints are shown for the sample of countries).

11. Surprisingly, few papers have emphasized food supply as a major factor in ensuring food security, even though national authorities are very much aware of the importance of domestic production.

A possible reason is the absence of quality data on crop yields, at least until recently. To address this gap, the FAO and OECD recently produced comprehensive data on yields, production, consumption, and imports of crops for many countries and this data is used to derive average yield estimates of maize, rice, roots and tubers, and wheat. Data limitations preclude the use of a weighted average based on consumption shares, which would be preferable given sizeable differences across countries (as documented above). Once again, the text chart depicts a strong positive relationship between yields and food security.



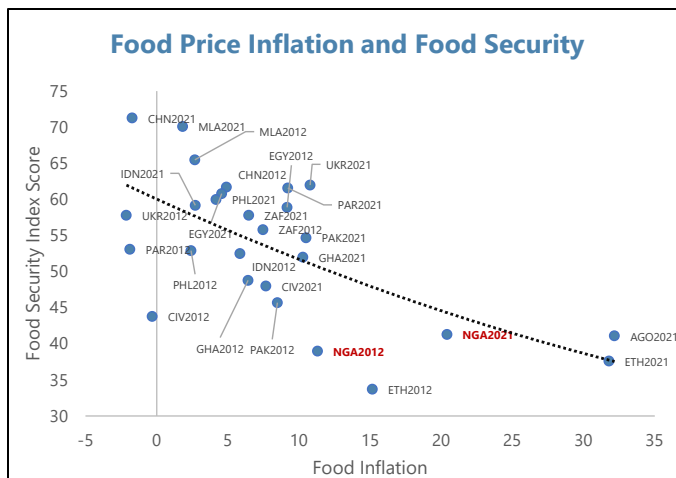
and this data is used to derive average yield estimates of maize, rice, roots and tubers, and wheat. Data limitations preclude the use of a weighted average based on consumption shares, which would be preferable given sizeable differences across countries (as documented above). Once again, the text chart depicts a strong positive relationship between yields and food security.

12. Falling at the intersection of demand and supply, food prices could have an independent effect on food security, especially when comparing rural and urban areas.

Stylized facts once again illustrate this relationship, with higher food inflation rates being associated with lower food security (see text chart).

13. The drivers of food security are assessed empirically in a multivariate cross-country setting. Controlling for time effects and country idiosyncrasies, the coefficients of regressions of food security and absence of hunger on per capita consumption, crop yield, food inflation, and food import reliance are presented in Table 1 (see Annex I for data definitions).

14. Demand and supply factors as well as food price inflation are key drivers of food security. The results across all regressions confirm the significant positive roles of per capita consumption and crop yields in securing better food security and



eliminating hunger. Reducing food price inflation also improves food security, though the parameter estimate loses significance when using absence of hunger as the dependent variable in the baseline regression. Interestingly, the adverse effect of food inflation on absence of hunger reappears when including an interaction term between food inflation and high yield countries. Since the sum of the coefficients on food inflation and the interaction term is not significantly different from zero, the adverse effect of food price inflation on absence of hunger is only found for countries with low yields. Finally, while no significant effect is found for the share of food imports in the food security regression, this variable is significant in explaining high levels of hunger and could be associated with high imported food prices raising the share of food imports and making them unaffordable.

15. There is significant scope to improve food security in Nigeria. To get a sense of the role of the variables in propelling Nigeria toward higher food security levels, we consider how much of a gap Nigeria would fill if it managed to reach the levels of Rwanda, Ghana, and Kenya at about 50 on the EUI food security index and the level of Philippines and Indonesia at 80 on the absence from hunger index. For this to happen, Nigeria would need a food inflation rate of 5 percent, a crop yield of 6.5 tons per hectare and a food import share of about 10 percent. These parameters are associated with countries in the comparator sample at the frontier. but they fail to propel Nigeria to the levels of the frontier countries because the country specific component plays a significant role in explaining its low index value and this component is not affected by policy changes.⁶

⁶ One of the missing indicators from the analysis is the share of food lost after harvest because of lack of data and this share is particularly high in Nigeria and could partly explain its poor ranking.

Table 2. Nigeria: Determinants of Food Security and Absence of Hunger

	(Log Specification)				
	Food security		Absence of hunger		
Per capita consumption (real 2015 US\$)	0.15 ***	0.15 ***	0.08 ***	0.07 ***	0.07 ***
Cereal, rice and roots yield (average)	0.2 ***	0.21 ***	0.13 ***	0.11 ***	0.06 *
Food price inflation	-0.42 ***	-0.41 ***	-0.003	-0.01	-0.36 *
Food price inflation interacted with dummy for high yields					0.49 **
Share of food imports in total imports (percent)		0.08		-0.4 *	-0.4 **
Chi squared test for corr(u _i , X _b)	0.1	4.05	4.45	1.98	1
Nobs	107	107	174	173	173

*** 99 percent significance; ** 95 percent significance

Note: Results are based on a random effects model that includes random effects at the country level and satisfied by the insignificance of the Chi squared statistic

16. High yields are clearly a major determinant of food security, and they are currently low in Nigeria. (Table 2). While the yield of roots and tubers is strong and this food category provides most of Nigeria's carbohydrates, the yields of the next two main sources of carbohydrates—maize and rice—are the lowest in the sample. Similarly, the milk return per cow is very low in Nigeria and its vegetable oil production is below the sample median.

17. Low yield levels in Nigeria are strongly associated with scarcity of agricultural inputs. First, the application of fertilizers correlates positively with crop yields across the sample countries between 2000 and 2019 (prior to the Covid-19 pandemic). The data shows a non-linear relationship that levels out at about 200-250 kg per hectare.⁷ Figure 8 suggests that the application of fertilizers in Nigeria is extremely low compared with other countries although the yield is stronger than suggested by the trend relationship, possibly due to elevated rainfall levels. A positive relationship is also visible between irrigation levels and yields across countries (Figure 9 using 2018 datapoints) and between rainfall and agricultural production in Nigeria (Figure 10). The strong seasonality of agriculture in Nigeria is governed by the timing of rainfall with production surges in the third quarter each year. Finally, mechanization (as proxied by farm machinery per unit of land in Figure 11) is also almost absent in Nigeria, although a recent initiative with Brazil is trying to rectify the situation.⁸

⁷ For instance, while Egypt applies much more fertilizer on its fields, crop yields have not surpassed 6.5 tons per hectare over the past two decades.

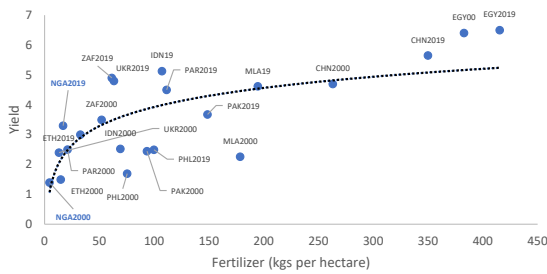
⁸ Brazil has offered to supply 10,000 tractors to Nigeria over the next 5 years as part of a \$1.2 billion agricultural sector contract that also offers technical knowledge to farmers

Table 3. Nigeria: Staple Yields
(Tons per Hectare Unless Otherwise Noted)

	Maize	Rice	Roots and Tubers	Sugar Cane	Vegetable Oils (production per capita, kilos)	Wheat	Milk (tonnes per cow)
Nigeria	2.2	1.5	8.2	15.3	9.7	1.5	0.2
Egypt	7.2	6.4	6.0	110.8	19.8	6.4	0.7
Ethiopia	4.8	1.9	2.2	44.7	0.6	3.3	0.2
South Africa	5.5	-	4.9	66.5	0.0	4.2	4.5
Paraguay	5.4	4.6	5.5	59.9	110.3	2.7	2.2
Ukraine	7.2	3.7	4.2	n.a.	166.7	4.2	3.7
Indonesia	5.6	3.3	10.7	51.9	177.7	1.0	1.1
Malaysia	7.1	2.3	8.1	n.a.	686.9	1.0	0.5
Pakistan	5.0	2.4	4.5	n.a.	7.9	2.8	1.2
China	6.3	4.8	5.8	n.a.	19.5	5.6	2.4
Philippines	3.2	2.7	3.1	n.a.	17.0	1.0	2.7

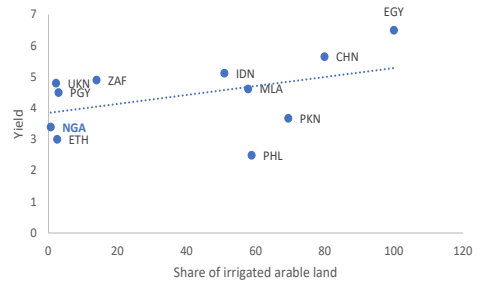
Source: FAO/OECD Agricultural Outlook 2000-2030 Database

Figure 8. Relationship Between Fertilizer Application and Yield

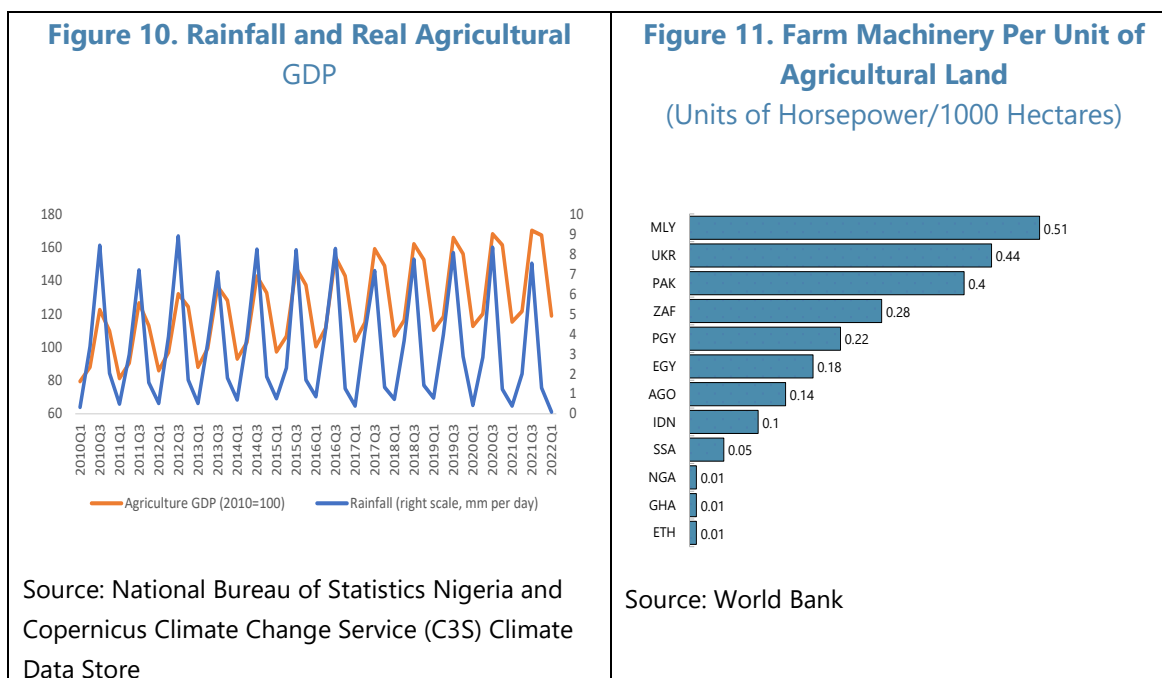


Source: FAO/OECD Agriculture Outlook 2000-30 database and FAO Fertilizer database

Figure 9. Relationship Between Share of Irrigated Land and Yield



Source: FAO Irrigation Database



18. The important role of inputs is evident in the policy experience of comparator countries. Box 5 shows a few commonalities in the policies adopted by South Africa, Paraguay and Ukraine in helping them to achieve high levels of food security over the past two decades, with emphasis on use of inputs, boosting trade and supporting agricultural credit.

Box 2. Agricultural Policies of Successful Comparator Countries

Among the low- and middle-income countries in Nigeria’s comparator group, three countries stand out as having adopted successful agricultural policies over the past two decades: **South Africa, Paraguay, and Ukraine**. These three countries experienced strong agricultural output growth rates ranging from 4-5.9 percent per annum over the 2000-19 period and achieved sizeable improvements in crop yields.

South Africa focused its policy on creating greater efficiencies through lowering subsidies and liberalizing its trade regime. This allowed sizeable yield improvements, as total cultivated area was reduced through the release of marginal fields. Various policies were introduced to foster productivity:

- Lowering of food trade tariffs in the mid-1990s and the introduction of a free trade agreement with the EU.
- Loosening the regulation of the marketing of agricultural products and the setup of the National Agricultural Marketing Council to dismantle sector control boards.
- Increase in input usage over time

Paraguay benefitted from the prior existence of strong agricultural capacity in neighboring countries (Argentina, Brazil) that got transferred at the end of the 1990s. It focused on:

- Making strong use of inputs such as fertilizer and improved seeds and keeping land costs low.
- Using the benefit of large price surges from the major crop soybean to develop agriculture in rural areas.
- Wide availability of credit to finance needed agricultural investments.

Box 3. Agricultural Policies of Successful Comparator Countries (concluded)

- On the downside, agricultural production remains concentrated among the elites, and this can only be changed through extensive land reform.

Ukraine benefitted from high quality black soil but, following independence in 1992, it took many years for the use of inputs to reach significant levels. Proper policies include:

- Increased fertilizer and improved seed use – the country is now an important seed producing center and the use of hybrid varieties that protect against pests and climate change is growing rapidly
- increased free trade linkages with Europe and surrounding countries (except Russia) that have helped to stimulate agricultural investment and yields.

E. Government Efforts and Effectiveness in Securing Food Availability**Agriculture Policies in Nigeria**

19. To diversify the economy and boost domestic production of key staples, Nigeria has adopted explicit agricultural policies since independence, with some success. Following limited government emphasis on agriculture during the oil bonanza years of the 1970s and 80s, President Obasanjo embarked on a series of reforms to eradicate poverty. He launched the National Special Program on Food Security (2002) and the National Economic Empowerment and Development Strategy (2004) to shift the economy away from oil dependence to agriculture and other non-oil activities and to promote food security. In 2008, a Root and Tuber Expansion Program (RTEP) was launched to stimulate demand for cheaper staple food such as cassava, *garri*, yam, and potato. It empowered small-scale farmers with less than two hectares of land in commercial root and tuber agriculture and was extremely successful in raising the productivity of these food products as highlighted earlier. Subsequent policies focusing on agriculture include the Agriculture Transformation Approach (2011-15)⁹, the Agricultural Promotion Policy (2016-20)¹⁰, the Economic Recovery and Growth Plan (2017-20)¹¹, and the National Agricultural Technology and Innovation Policy (2022-27)¹². Recently, a new program built around special agro-industrial processing zones was introduced and is projected to run through 2027. The program aims to establish new economic zones located in rural areas, and fully supported by infrastructure (power,

⁹ The goal was to ensure that domestic food production increased by 20 million metric tons (MTs) within four years and that 3.5 million new jobs were created in the agricultural value chain (Adesina 2013).

¹⁰ The policy aimed at creating employment, ensuring food security, eliminating poverty, and repositioning the nation's economy. (Olomola and Nwafor 2018)

¹¹ The plan came on the heels of the sharp decline in oil prices from about \$112 a barrel in 2014 to below \$50 in 2016. It recognizes the need to leverage science, technology and innovation and build a knowledge-based economy to change the role of the government from being the provider of citizens' needs into eliminating bottlenecks that impede innovation and market-based solutions (Williams and Francis, 2021).

¹² The objective is to promote digital and climate-smart agriculture to reduce imports of food such as rice, dairy products, and fish as well as increase resilience for farmers, and boost high potential value chains (Voice of Nigeria 2022)

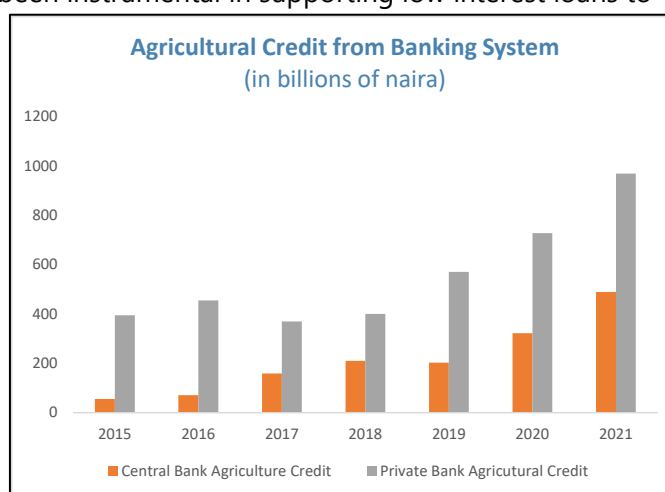
water, roads, digital infrastructure, and logistics) that facilitates food and agribusiness companies to locate there.¹³

20. Successive Nigerian governments have endeavored to reduce import dependency.

After the first oil era economic crisis in the early 1980s, the Nigerian government curtailed imports before requiring licenses for their usage and closing Nigeria's borders. Despite adopting pro-market policies, the Babangida regime imposed a 30 percent levy on all imports in 1985 and introduced a tariff system that served as a major protectionist tool, with tariffs increasing up to 100 percent for some products. Obasanjo's government used import bans extensively to protect local industries and boost manufacturing capability (Fasan 2015) and they have continued to prevail until today. Since 2016, the CBN has banned importers from accessing the foreign exchange market for 41 foreign products, most of which are consumer or intermediate products including key staples with the objective of "changing the economy's structure" and "resuscitating local manufacturing" to reduce forex demand by importers, and ultimately conserve the nation's international reserves (Central Bank of Nigeria 2015).

21. The CBN has also been an active lender to the agriculture sector. Given the widespread understanding that the private sector is averse to extending credit to the agricultural sector, (Paloma et al. 2015), and that directed credit in agriculture has been successful elsewhere (Seven and Tumen 2020), the government has been instrumental in supporting low interest loans to

farmers through the CBN. One of the earliest schemes was the Agricultural Credit Guarantee Scheme Fund set up in 1978 providing agricultural loan guarantees for commercial banks. The Anchor Borrowers Program established in 2016 initially set aside 40 billion naira to support farmers by offering single digit interest rate loans. Since then, over 1 trillion naira has been disbursed through mid-2022 from this program, with CBN providing a rising share of banking system agricultural financing.



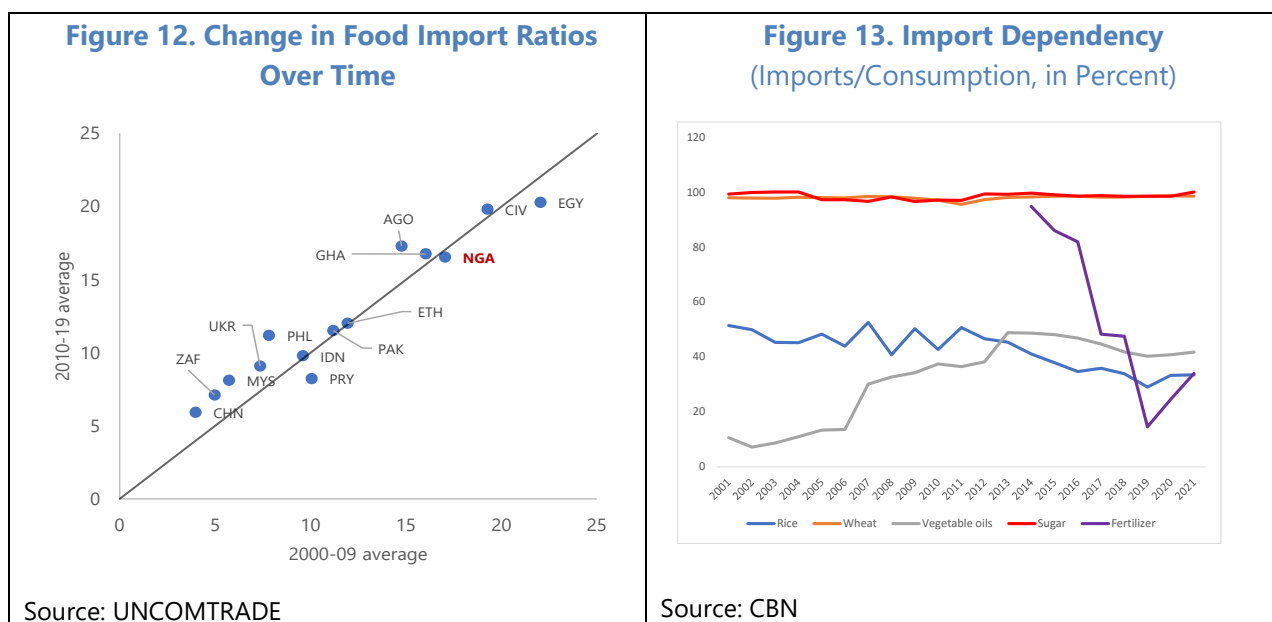
22. Input subsidies were also successfully introduced in Nigeria and are looking to be reintroduced. The e-voucher subsidy scheme was developed during 2011-15 and provided electronic vouchers to farmers to obtain subsidized NPK or urea fertilizer and improved seeds from private sector input retailers. Internal estimates suggest that between 12-14 million farmers received e-vouchers in total, but the initiative was withdrawn in 2015 as macroeconomic

¹³ Financed by AfDB and IFAD, the program emphasizes facilitating farm access to essential inputs through an electronic wallet and targets tomato, rice, cassava, maize, soybeans, ginger, beef and dairy (African Development Bank Group 2022).

conditions worsened and government revenues declined associated with the dramatic fall in oil prices. However, a new program based around agricultural special processing zones financed by the African Development Bank (AfDB) and International Fund for Agricultural Development (IFAD) is reintroducing them.

Evaluation of Policy Effectiveness

23. Over the past two decades, dependence on food imports has remained elevated in Nigeria relative to the comparator sample group, but notable reductions have been visible for rice and fertilizer. Import dependence is assessed by comparing long term changes in the food import ratio across the country sample group and looking at changes over time across specific commodities in Nigeria. Little change is noted in the food import ratios across countries over the past two decades (Figure 12) - countries with low levels of import dependency (below 10 percent) at the beginning of the 2000-09 period have increased their ratios slightly, whereas other countries (including Nigeria) have generally maintained earlier high levels of import dependency. The view is more nuanced when considering specific commodities in Nigeria since fertilizer and rice imports have fallen over time although no visible change is seen for wheat and sugar imports (Figure 13).



24. One important measure of the success of import bans is whether, following their imposition, domestic conditions become more important in the setting of domestic prices.¹⁴ Figure 14 indicates that, historically, the prices of domestic staples that are internationally traded

¹⁴ The import ban should also lead to increased domestic production. However, without a more competitive market structure, import substitution policies may not ultimately benefit consumers. Indeed, a rigid market structure in agriculture can also distort price signals and limit the benefits of higher prices to the farmer in favor of the middleman (see IMF 2022).

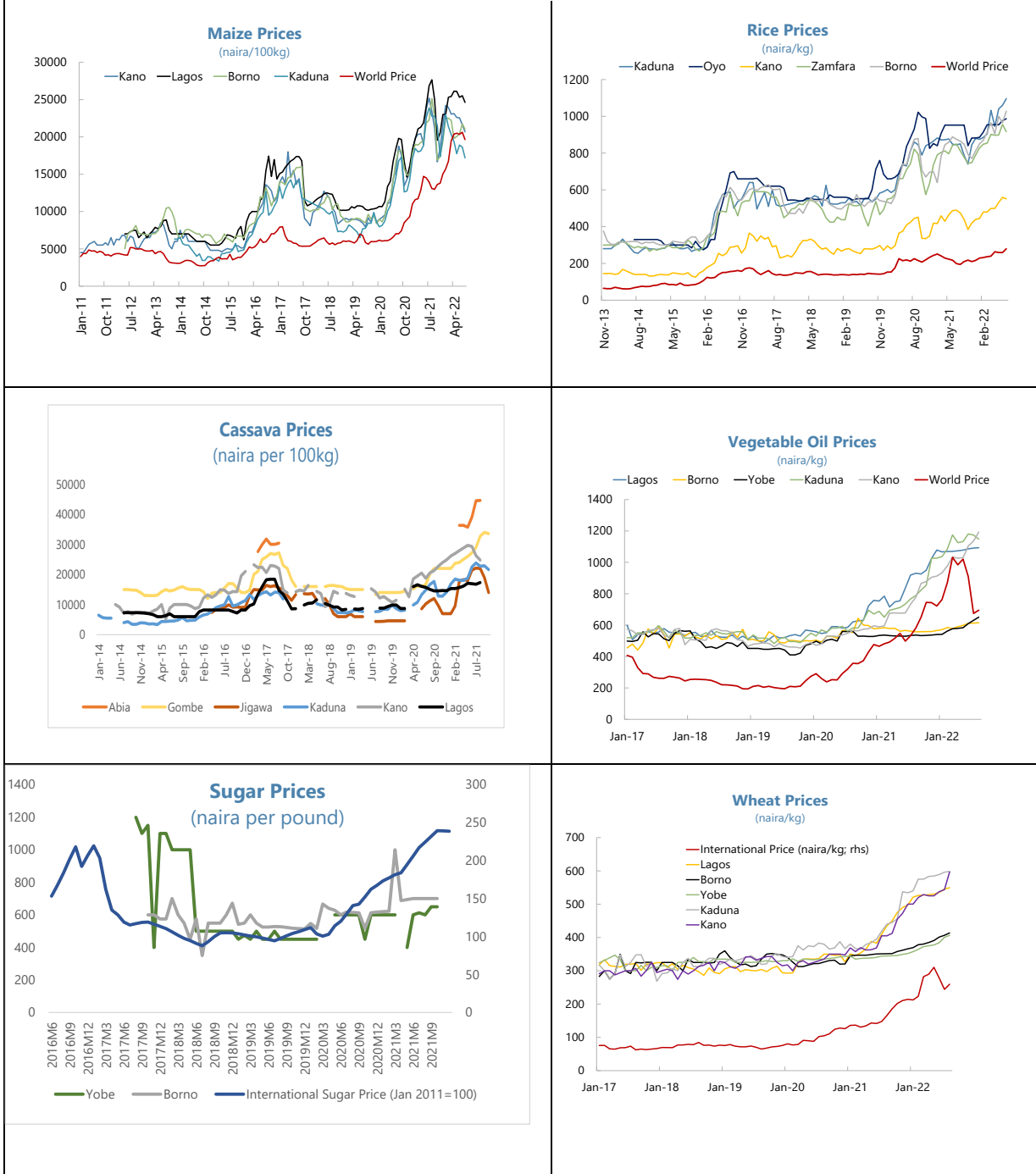
have co-moved with international prices expressed in local currency (converted at the parallel market exchange rate). Prices of traded goods across regions (maize and rice) also move closely together, while for cassava, and to a lesser extent vegetable oils, prices across Nigerian states are more variable over time, demonstrating the importance of local conditions in determining their pricing. The same holds for wheat flour and sugar in the northern states where the available supply of WFP food support packages in Borno and Yobe (which comprise wheat flour, vegetable oil and sugar) have helped to stabilize the prices of these staples. In areas without WFP food support (e.g., Kaduna and Lagos), domestic wheat and vegetable oil prices move more closely with international prices.

25. The limited effect of domestic conditions and import bans on food prices is confirmed using an empirical assessment. We run separate regressions of maize and rice prices using as right-hand side variables their lagged prices, their international price in local currency valued at the parallel market exchange rate, and a dummy variable for the period following the imposition of the import ban. The estimation is run for the state of Kano for which data for the two staples is available prior to and after the setting of the ban. The results reveal that lagged domestic food prices and international prices are significant determinants of current maize and rice prices. Also, the sum of the coefficients on the international price over four quarters is insignificantly different from unity, suggesting full pass through to domestic prices. Moreover, the dummy variable for the period following the import ban is insignificant in both price equations and the sensitivity of the prices of staples to the international prices is not diminished following the imposition of import bans.

26. A similar outcome is found for fertilizer with little change in the sensitivity of the domestic price to the international urea price in recent years despite a significant increase in production.¹⁵ It could be argued however, that transportation costs are putting additional upward pressure on domestic fertilizer prices and this effect is masking any price moderation in response to more domestic supply. It is also the case that the new supply coming from Dangote is being fully used for export and is therefore not yet impacting the domestic supply and demand mix.

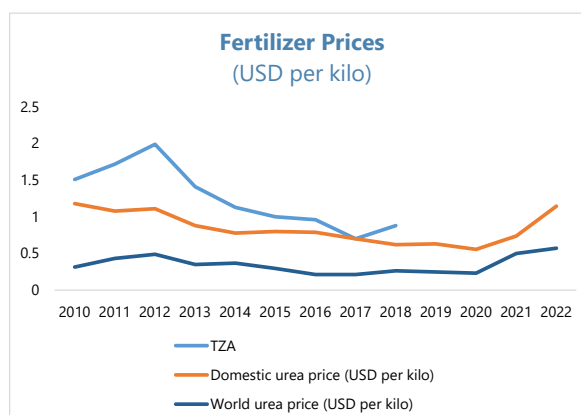
¹⁵ The lack of responsiveness of fertilizer prices to increased production could be due to monopolistic conditions in the industry (see IMF 2022).

Figure 14. Domestic and International Prices of Staples Across Some States in Nigeria



27. Notwithstanding strong regression results from cross-country studies, it is difficult to identify an agricultural credit channel for boosting agricultural supply in Nigeria, though the findings could reflect the short estimation period.¹⁶ We

construct an agriculture supply function and test whether credit impacts production over the short run. The estimated agricultural supply function has real agricultural output growth as the dependent variable and is estimated using lagged food prices and contemporaneous rainfall as instruments for the food price. The relationship is correctly specified since the food price has a significant positive effect on food supply (see Table 3). However, the other variables except for lagged agricultural growth are insignificant, including those related to the change in banking credit and the component that is provided via the central bank. Of course, the lack of significance could be associated with the short period and the dominant effect from rainfall (see Figure 11).



The relationship is correctly specified since the food price has a significant positive effect on food supply (see Table 3). However, the other variables except for lagged agricultural growth are insignificant, including those related to the change in banking credit and the component that is provided via the central bank. Of course, the lack of significance could be associated with the short period and the dominant effect from rainfall (see Figure 11).

Table 3. Nigeria: Role of Credit in Agricultural Production Growth

Change in food price	0.19 **	0.18 **	0.21 **
Change in real banking credit (-1)	-0.03	-0.02	-0.03
Change in real banking credit (-2)	-0.01	-0.01	-0.01
Change in rainfall (-1)	0.12	0.09	0.11
Change in rainfall (-2)	0.15	0.14	0.18
Agricultural growth (-1)	0.41 *	0.44 *	0.34 *
Agricultural growth (-2)	-0.44	-0.43	-0.43
Share of central bank credit			0.01
Nobs	26	24	25
R squared	0.4	0.4	0.44

** 95 percent significance; * 90 percent significance

Note: Results are based on an instrumental variables regression with contemporaneous rainfall and lagged food prices used as instruments for the contemporaneous food price.

28. The weak effect of agricultural credit on production growth could be associated with difficulties in targeting the correct recipients. Empirical papers document a 50-60 percent repayment rate over the course of an agricultural loan, with late administration of the loan and

¹⁶ See Seven and Tumen (2020) for a typical example of cross-country findings.

diversion into other uses as typical explanations for the weak repayment profile (Edet, 2016, Anigbogu, 2014, Mbam 2021). Recent data (November 2020) from the central bank indicate that the repayment rate for the Commercial Agricultural Credit (CAC) Scheme is at almost 66 percent but, since the loans started in 2009, this is not a particularly high outcome. For the Anchor Borrowing Program, repayment is also low at 24 percent, especially since repayment can be made in kind, thereby limiting the tenor of the loans to one year. Part of the problem is that the incentive structure for repayment is weak, the recipient loans are not always well targeted and occasionally the funding is used for other purchases (e.g., new agricultural input trading companies to elicit trading rents).

29. Finally, on input subsidies, most micro data studies suggest that significant improvements were achieved through the e-voucher subsidy program. Wossen et al. (2017) show that farmers who participated in the subsidy program increased their maize yield by over 26 percent and per-capita consumption expenditure grew by almost 31 percent. Moreover, netting out the cost of the subsidies provided a net benefit of 11 percent (excluding economy-wide effects). A complementary study on the use of biofortified cassava seed with vitamin A supplements by Adetomiwa and Kolapo (2021) reported increased cassava yields (over 28 percent), and higher per-capita consumption (39 percent). Moreover, following the introduction of the e-voucher program, Benjamin (2020) documents a substantial increase in fertilizer expenditure by farmers, but Kujima (2021) asserts that this was not the case in a region that was already using fertilizer to a large extent.

30. For the reintroduction of the e-voucher program to be effective, the papers on the Nigerian experience as well as reflections on the experience in Malawi and Zambia (Mason et al. 2020) suggest the following measures ex ante:

- Provide the subsidy on time.
- Conduct the scheme over a long period (over 5 years) to show the population that the scheme is here to stay.
- Avoid elite capture by making the scheme available to anyone and not self-selected groups.
- Allow flexibility in purchase so that the voucher can be used for various types of seed.
- Source the fertilizer locally so the recipients do not have large distances to travel.
- Provide the voucher in tandem with extension services so that the input is properly applied.
- Avoid areas where crowding out of fertilizer demand is likely to happen.

Of course, large expenditures are needed for these conditions to hold but the size of the fuel subsidy provides some potential financing.

F. Conclusions

31. Food insecurity is an increasing policy concern in Nigeria. The country is endowed with immense agricultural resources and over 81 million arable and largely fertile hectares, with maize, cassava, guinea corn, yam beans, millet, and rice being the major crops (Odukoya, 2020). Despite rising domestic production of staples, the global increase in food prices is adversely affecting food

security conditions. Rural areas are insulated somewhat from the recent price surge because of more home production although peripheral areas of the country have suffered the worst effects in recent years.

32. Key drivers of food security are demand and supply factors as well as food price inflation. The cross-country analysis identifies four levers for raising food security levels: raising per capita consumption, raising production yields, limiting food price inflation, and reducing reliance on food imports. Per capita consumption is far below comparator countries in Nigeria, and it could be stimulated through increased diversification. Yields are also lower in Nigeria than in other countries due to scarcity of inputs (fertilizers, modern irrigation methods, and mechanization). Addressing challenges to access to timely, high quality, and price competitive inputs would not only achieve optimal productivity of agricultural outcomes but also temper food inflation.

33. Nigeria has achieved a substantial increase in agricultural production associated with its policies but some have been less successful. Import dependency for key staples has not fallen and the cost of these agricultural products remains driven by international prices. Further, central bank credit to the agricultural sector has not succeeded in increasing production beyond the stimulus of high rainfall and high food prices. In contrast, the government's e-voucher schemes to farmers to obtain subsidized inputs has proven to boost yields. This latter policy is currently being introduced in tandem with the creation of new special processing zones and offers good prospects provided it is handled efficiently.

Annex I. Variable Definitions and Sources for Econometric Specifications

Variable Definition	Variable Source
<u>Determinants of Food security (annual data)</u>	
Food security index: country index based on affordability, availability, quality and safety of food (varies between 0-100)	EIU Food Security Index 2012-22
Absence of Hunger index: 100-Global Hunger index based on the proportion of undernourished in the population, proportion of child wasting, stunting and mortality for children under 5	IFPRI 2006-21
Per capita consumption: Index of real consumption per capita valued at 2015 US dollars	World Bank 2000-21
Cereal, rice and roots yield: average of yield for maize, rice, roots and tubers, wheat	FAO/OECD 2000-20
Food price inflation	Haver 2000-22
Food imports in total imports	World Bank 2000-20
<u>Determinants of Agricultural Production Growth (quarterly data)</u>	
Agricultural production (2010=100)	NBS 2015Q1-2021Q4
Food price (2009m12=100)	NBS 2015Q1-2021Q4
Rainfall (mm per day)	Google earth climate real analysis
Real banking credit: agricultural credit offered through banks deflated by the GDP deflator	CBN 2015Q1 -2021Q4
Share of central bank credit: central bank credit to agriculture divided by total agriculture credit offered through banks	CBN 2015Q1 -2021Q4

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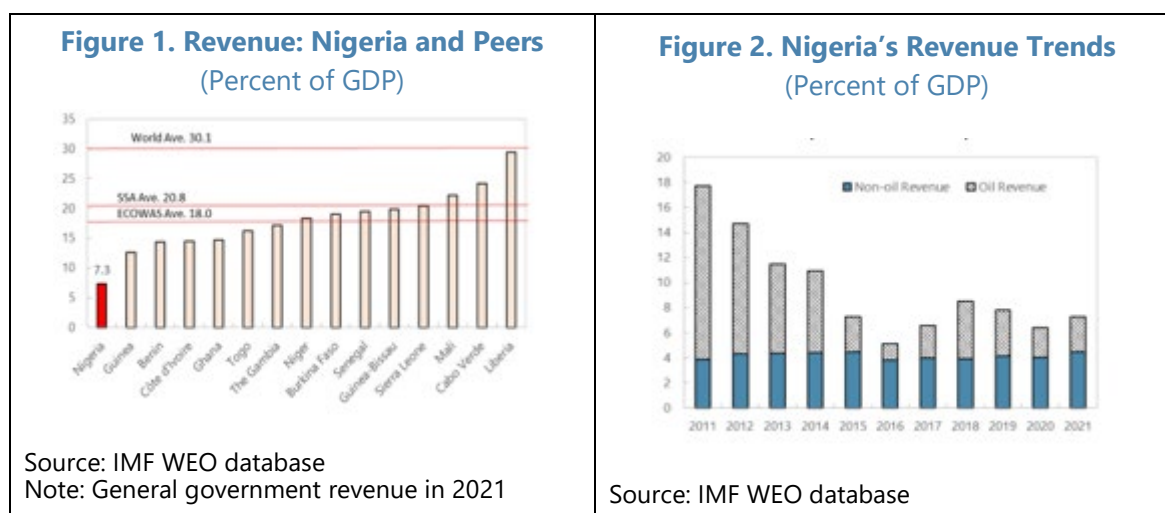
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NIGERIA'S TAX REVENUE MOBILIZATION: LESSONS FROM SUCCESSFUL REVENUE REFORM EPISODES¹

A. Nigeria's Tax Revenue Mobilization and Tax Capacity

1. Nigeria has one of the lowest revenue-to-GDP ratios in the world, which makes its fiscal position vulnerable to shocks. General government revenue in Nigeria was 7.3 percent of GDP for 2021—less than half of the average in countries belonging to the Economic Community of West African States (ECOWAS) and nearly a third of the average of countries in Sub-Saharan Africa (SSA)—and ranked as 191st out of 193 countries in the world (Figure 1). Nigeria's fiscal revenue also shows a declining trend, mainly due to declining oil revenue over the past decade (Figure 2).² Non-oil revenue has stagnated at around 4-5 percent of GDP in the past decade. Nigeria's very low tax revenue and continued reliance on volatile (downward-trend) oil revenue pose a threat to fiscal sustainability. This paper focuses on non-oil tax revenue—for which policies are under direct control of the authorities—, excluding oil revenue showing large volatility by external oil price shock.



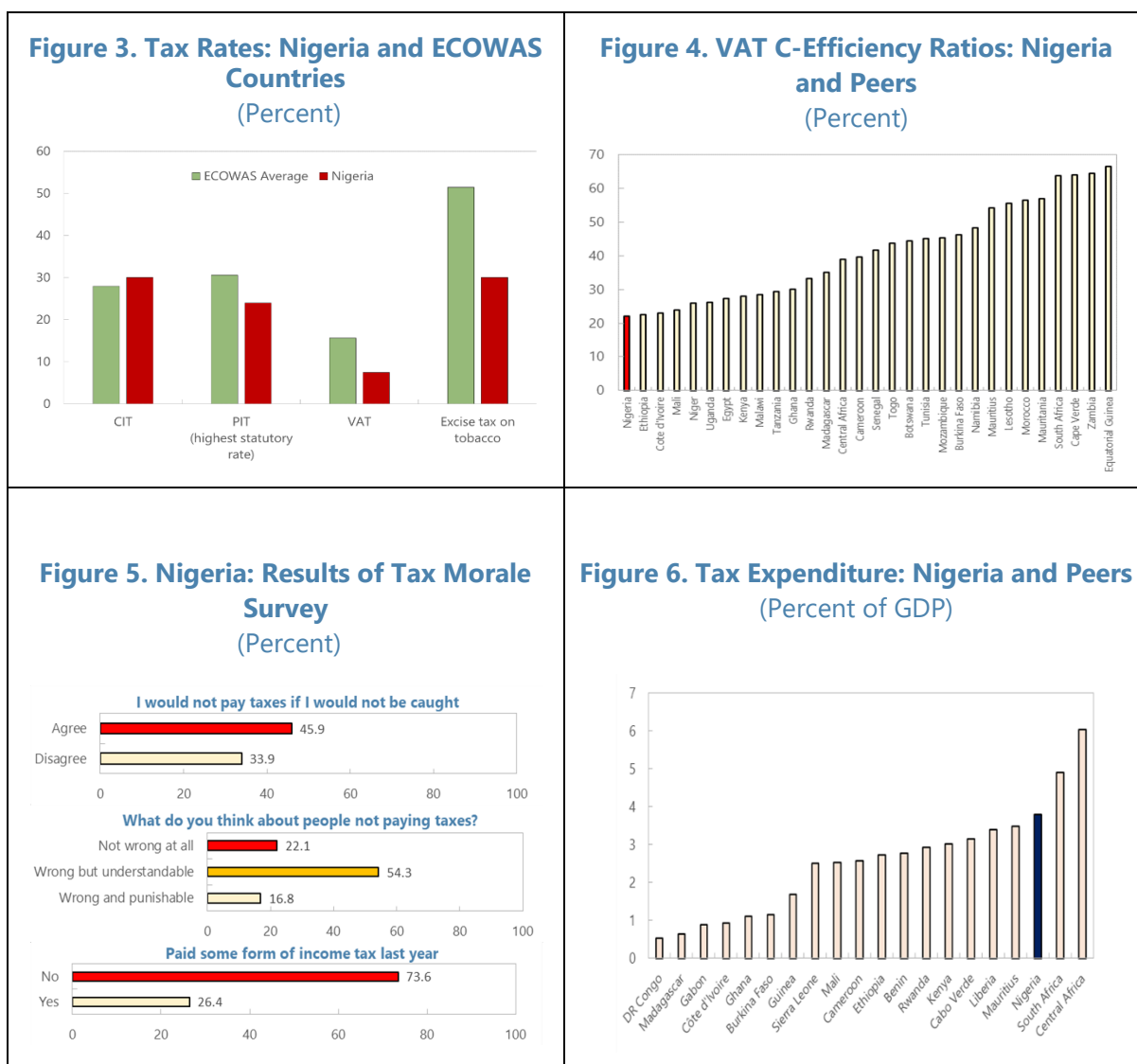
2. Nigeria's low tax revenue has been mainly driven by the narrow bases of its indirect taxes, low tax compliance, large amount of tax exemptions as well as low rates. Tax compliance and tax morale are still very low. Nigeria's VAT collection efficiency (C-efficiency ratio)—the ratio of actual revenues to potential revenue³—is the lowest among peer African

¹ Prepared by Il Jung (FAD).

² After the oil shock in 2015, Nigeria's already low revenue decreased further to the lowest level in the world. Despite the recent rebound in international oil prices, Nigeria's oil revenue is still very low, due to the huge amount of implicit fuel subsidies (i.e., deductions by NNPC from gross oil revenue), continued contraction in oil production, and oil theft.

³ VAT C-efficiency ratio is defined as VAT revenue divided by the product of VAT rate and private consumption.

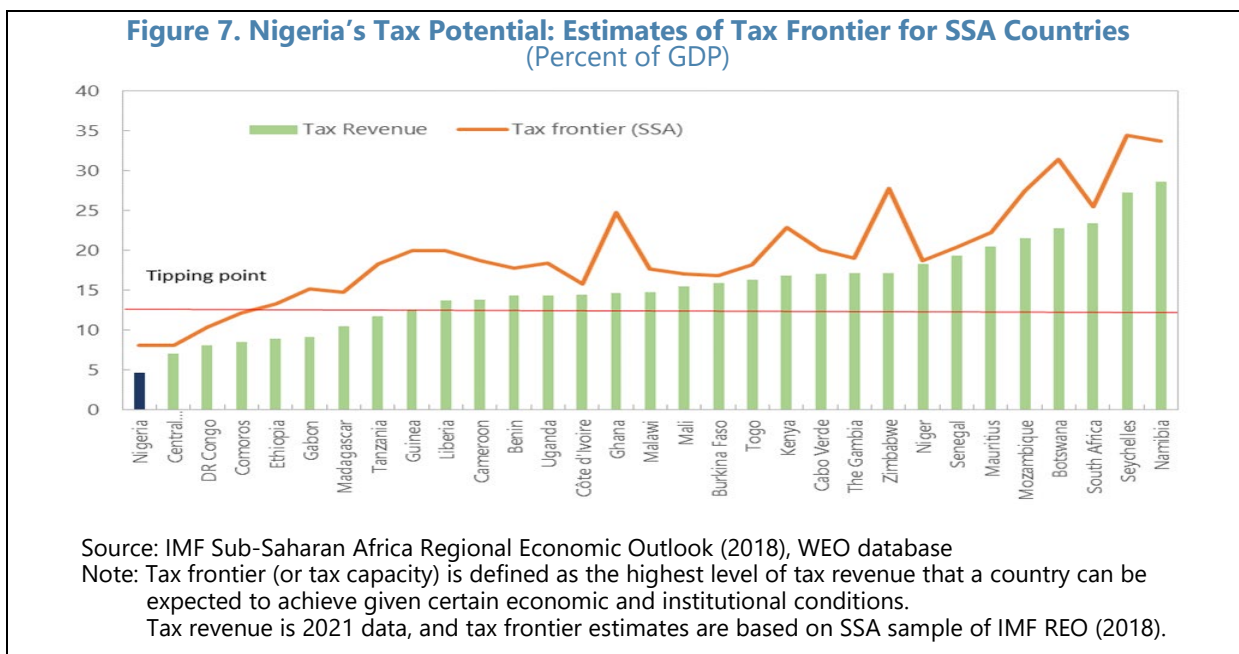
countries (Figure 4). According to recent surveys (McCulloch, 2020; 2019), almost half of the respondents agreed with the statement, “I would not pay my taxes if I would not be caught” (Figure 5). Furthermore, Nigeria offers large amount of tax incentives (tax expenditures)—including tax holidays, generous allowances, and exemptions—which has eroded the revenue base. According to the 2021 Tax Expenditure Statement (TES), the revenue foregone by tax expenditures was estimated at around 4 percent of GDP (N6.8 trillion) in 2021, which made Nigeria one of the costliest tax expenditure countries in SSA (Figure 6). Nigeria’s indirect taxes (i.e., VAT and excise) have the lowest rates—around half of the average of ECOWAS countries (Figure 3)—with their narrow bases, which significantly undermine tax revenues.



3. The authorities have adopted a national plan aiming to raise the revenue-to-GDP ratio to 15 percent by 2025. The authorities recognize the limited fiscal space and have developed and updated a “Strategic Revenue Growth Initiative (SRGI)” with four main objectives: (i) raising revenue-to-GDP ratio to 15 percent by 2025; (ii) expanding the tax base; (iii) countering tax

evasion and encouraging the payment of taxes by citizens; and (iv) enhancing transparency in the tax system. The SRGI has several important tax and customs administration measures, but it does not include any specific plan for raising tax rates. Given Nigeria’s very low level of tax revenues, administration measures alone will not be sufficient to raise needed resources. Bolder tax policy measures—including raising indirect tax rates to the level comparable to ECOWAS countries and rationalizing numerous tax incentives—will need to be adopted.

4. Nigeria has a potential to further increase revenue if priority tax reforms were accompanied. According to empirical studies (Gaspar et al, 2016), there is a tipping point between tax capacity and growth, and the minimum revenue-to-GDP ratio associated with a significant acceleration in growth/development is 12½ to 13 percent. Other literature found that Nigeria’s tax capacity (or tax frontier)⁴ is estimated to be about 8-11 percent of GDP (IMF, 2018a; Fenochetto and Pessino, 2013)⁵. Nigeria’s current revenue is well below this tipping point and tax revenue (4.5 percent of GDP in 2021) is also well below the capacity (Figure 7), which implies there is a potential to further increase revenue. To fill Nigeria’s tax gap (or tax potential), an effective strategy leveraging on the SRGI and findings of recent IMF TA missions is urgently needed. For this, it is helpful to identify lessons from successful revenue reform experiences in peer SSA countries, and to this end, section B draws lessons from past large revenue mobilization episodes elsewhere. Section C presents implications for Nigeria’s tax reform path going forward.



⁴ The “tax frontier” (or “tax capacity”) is defined as the highest level of tax revenue (usually measured in percent of GDP) that a country can be expected to achieve given certain macroeconomic and institutional conditions. The “tax gap” (or “tax potential”) is defined as the distance between actual tax revenue and tax frontier (IMF REO, 2018).

⁵ According to IMF (2018a), Nigeria’s tax frontier (or tax capacity) is estimated to be 8.1 percent of GDP for SSA sample, 10.7 percent of GDP for EMDE sample, and 11.1 percent of GDP for all country sample.

B. Lessons from Successful Revenue Reform Episodes in SSA

5. We have identified four cases of large and sustained revenue mobilizations in SSA⁶, which could provide possible roadmaps for Nigeria. This paper focuses on the profile of non-resource tax revenues during the post global financial crisis (GFC, 2010-2021)—which seems to differ from the literature covering the period before/around GFC (2000-2015) (Akitoby et al, 2018; IMF, 2018a). A successful episode is defined as a minimum increase in tax revenue of 2.5 percentage point of GDP over a five-year period (i.e., average 0.5 percentage point increase per year over five years)⁷. For the post-GFC period (2010-2021), only 12 episodes are identified in 40 SSA countries (Table 1). The episodes are further narrowed down by two additional criteria: (i) the episodes should be sustained with no substantial decline for five years after the episode⁸ and (ii) the episodes in fragile states are excluded, since they may not be applicable to other countries given their unique social and economic environments⁹. Then, only four episodes are identified: Mauritania, Rwanda, The Gambia, and Uganda.

Table 1. Nigeria: Identified Episodes of Successful Tax Revenue Mobilization in SSA

	Episode ^{1/} (year)	Tax revenue increase (%p of GDP)	Sustained ^{2/}	Fragile state	IMF program	Real growth	
						Preceding 5Y ave.	5Y ave. in episode
Burundi	2015-2019	4.8	S	1	2008-2015	4.6	-0.1
Central African R.	2014-2018	4.2	S	1	2006-2009	-5.6	3.5
Chad	2016-2020	7.8	NS	1	2017-2020	4.6	-0.9
The Gambia	2010-2015	3.5	S	-	2012-2015	2.5	1.3
Guinea	2011-2016	2.7	NS	-	2012-2015	3.1	5.6
Guinea-Bissau	2013-2017	3.1	S	1	2010-2013	3.7	4.1
Mali	2012-2016	3.0	S	1	2013-2016	4.3	4.1
Mauritania	2010-2014	4.1	S	-	2006-2013	4.7	3.9
Mozambique	2010-2014	8.3	S	1	2010-2016	7.5	7.1
Niger	2010-2014	2.5	NS	1	2008-2015	5.2	6.6
Rwanda	2010-2015	3.5	S	-	2010-2016	8.7	7.3
Uganda	2012-2017	3.1	S	-	2010-2016	6.7	4.5

Sources: IMF WEO database, IMF MONA database.

^{1/} Episodes are identified based on the following criterion: at least 2.5%p increase in tax revenue-to-GDP ratio over 5 years (average 0.5%p increase per year for 5 years without fall) with no substantial decline² for 5 years after the episode.

^{2/} "S (Sustained)" means tax revenue-to-GDP ratio increased or stayed the same or slightly fell but less than one-third of overall tax increase (of episode period) for 5 years after the episode period ends.

⁶ Outside the SSA countries, there are many other identified episodes based on our criterion (i.e., Maldives (2010-14), Belgium (2009-2013), France (2010-14), Nepal (2010-14), Myanmar (2010-14), Armenia (2010-14), Denmark (2010-14), etc.). However, this paper mainly focuses on the SSA countries for comparison with Nigeria.

⁷ 0.5 percentage point of GDP per year is often used in the IMF program conditionality, which is the rationale for this paper's criterion. Also, the literature has used different (or arbitrary) criteria to identify the episodes: (i) Akitoby et al (2018; 2019) used the increase in tax revenue by at least 0.5 percentage point of GDP per year over a minimum of three years; (ii) IMF (2018a) used 2 percentage point of non-resource GDP over a three-year period.

⁸ This paper assesses the episode as "sustained" if tax revenue-to-GDP ratio increased or stayed the same or slightly fell but less than one-third of overall tax increase (of episode period) for 5 years after the episode period ends.

⁹ This criterion is based on the literature (Akitoby et al, 2019).

6. Common lessons from the identified episodes—Mauritania (2010-14), Rwanda (2010-15), The Gambia (2010-15), and Uganda (2013-17)—of successful revenue reforms are as follows (see boxes 1-4 for details):

- *The identified cases conducted both tax administration and tax policy reforms as a package.* All four identified countries implemented several tax administration measures and tax policy reforms (i.e., tax rate increase, base broadening, and tax incentive rationalizations) in parallel. The literature also supports that a package reform tended to be more successful in revenue mobilization (Akitoby et al, 2019).
- *All four countries mainly focused on indirect tax (VAT and excise) reforms and reduction of tax exemptions as effective revenue booster.* The Gambia introduced a VAT to replace a sales tax and a specific excise on tobacco products in 2013. Mauritania raised the excise tax rate on tobacco from 10 to 30 percent and extended VAT coverage to the mining sector in 2012. Uganda increased several excise rates on locally produced spirits from 45 to 60 percent and on cigarettes by almost 60 percent in 2014, as well as reducing many VAT exemptions. Rwanda raised its excise rate on airtime of mobile phones from 5 to 10 percent in 2011-14 and removed incentives granting VAT exemptions on imports for investment certificate holders. These indirect tax reforms contributed to significant revenue gains in the identified episodes.
- *Tax administration reforms mainly focused on improving compliance through strengthening taxpayer segmentation and automation.* Uganda expanded its taxpayer segmentation approach to the medium taxpayer by creating the MTO, combined with “e-tax services” to facilitate taxpayers’ registration, filing and payments. The Gambia implemented a detailed “Compliance Improvement Plan (CIP)” for large taxpayers. Rwanda introduced new electronic filing and payment systems during 2010–11 with the implementation of electronic tax registration.
- *During the tax reform period, some countries introduced redistributive measures with fuel subsidy reform.* In Mauritania and The Gambia, fuel subsidy reforms with mitigating measures (i.e., targeted cash transfers for the most vulnerable) were undertaken, since indirect tax reforms were usually regressive.
- *High-level political commitment and buy-in from key stakeholders played a critical role for reform success.* Uganda announced and implemented national revenue plans with strong political will, and Mauritania launched social dialogues with civil society and opposition groups, which helped enhance buy-in from key stakeholders and reduce resistance to the reforms.
- *Another common factor is that the episodes coincided with robust growth and IMF programs.* The identified episodes frequently overlapped with the IMF programs and/or strong technical assistance support and tended to show relatively robust growth during the episode period (Table 1).

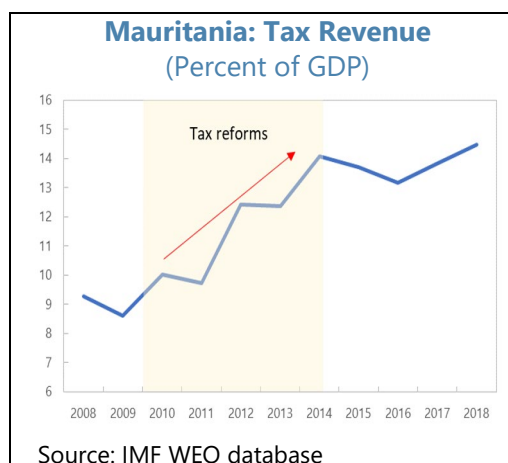
Box 1. Mauritania Case (2010-14): A Package of Reforms that Combine Indirect Tax Reforms with Redistributive Measures and Fuel Subsidy Reform^{1/}

Mauritania achieved a sizable increase in tax revenue through a package of indirect tax and fuel subsidy reforms with some redistributive measures.

Mauritania's tax-to-GDP ratio significantly increased by 4.1 percentage points of GDP during 2010–2014 (Figure 8).

Especially, it is notable that, despite the commodity price boom, Mauritania enhanced non-commodity tax revenue, avoiding the resource curse and ultimately reducing heavy dependence on commodity revenue.

- Mauritania broadened its VAT base by extending coverage to the mining sector.** The VAT was extended to cover the mining sector, and mining companies now receive reimbursement only if they can prove that their purchases have been acquired from formal domestic suppliers. This provides an incentive for local supplier to register and become formal. As a result, the tax identification numbers increased from 1,789 in 2011 to 5,860 in 2013 and the VAT revenue increased by 2½ percentage points of GDP during 2009-2013.
- They also increased excise tax rates on tobacco, with removing CIT exemptions.** In 2012, the Mauritanian authorities raised excise rates on tobacco from 10 percent to 30 percent. Also, they removed the CIT exemption of the main gold company in 2012, which contributed to the increase in CIT revenue by 1.3 percentage points of GDP.
- During the tax reform period, they introduced some redistributive measures associated with fuel subsidy reform.** Since indirect tax reforms (e.g., VAT and excises) were usually regressive, fuel subsidy reforms and mitigating measures were undertaken as a package during this period. To offset undesired effects on income distribution, they introduced a targeted cash transfer program for vulnerable households adversely affected by the reforms in 2012.
- They strengthened social dialogues with key stakeholders, which helped reduce resistance to the reforms.** There was a military coup in August 2008, but with the new presidential election in mid-2009, Mauritania returned to a constitutional order and a stable reform-minded government coalition. At that time, the government launched social dialogues with civil society, the opposition, and interest groups, which helped enhance buy-in from key stakeholders and reduce resistance to the reforms.



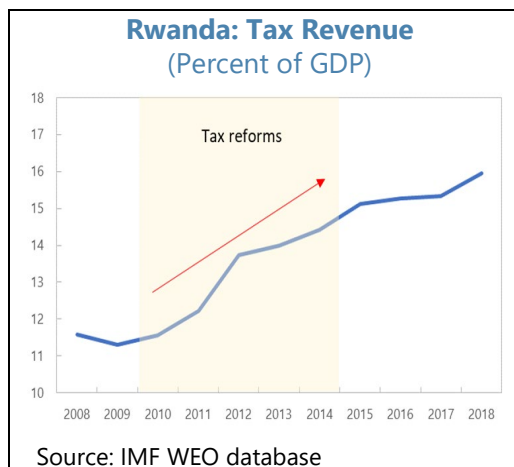
^{1/} This box is based on Akitoby et al. (2019, IMF) and IMF's country staff report.

Box 2. Rwanda Case (2010-15): Reforms Focusing on Raising the Rates of Indirect Taxes and Removing Tax Exemptions^{1/}

Rwanda achieved a steady and sustained increase in tax collection through bold indirect tax reforms and tax incentive rationalization.

Especially, the reform focused on raising the rates of indirect taxes as an effective revenue booster, combined with removing numerous exemptions. As a result, Rwanda's tax-to-GDP ratio increased by 3½ percentage points of GDP during 2010–2015 (Figure 9). With these reforms, Rwanda's heavy dependence on donor aid was significantly reduced during the reform period.

- Rwanda's tax reforms mainly focused on raising the rates for several indirect taxes.** From July 2012, Rwanda's tax rate for imported construction materials increased from 5 percent to 10 percent. The excise tax rate on airtime of mobile phones was also increased from 5 to 8 percent, then to 10 percent during 2011–2014. In 2015, the authorities increased tariffs for water and electricity by 19 and 35 percent, respectively. Furthermore, the FY15/16 budget included a new excise tax on petroleum, higher excise tax rate on tobacco and import tax on non-EAC products, which significantly increased tax revenue.
- The authorities also removed lots of tax exemptions.** For this, they revised the investment tax code to streamline several tax exemptions. Incentives granting VAT exemptions on imports for investment certificate holders were also removed, which broadened the existing narrow tax base.
- They implemented tax administration measures for improving compliance by better utilizing risk management and automation systems.** Especially, new electronic filing and payment systems were introduced during 2010–2011, with the implementation of electronic tax registration. Also, basic risk management approaches and direct bank payment of tax was introduced to reduce leakages. The tax and business registration processes were integrated to ease cost of doing business. Furthermore, they automated tax and custom operations and implemented a customs Single Window for trade facilitation. The Rwanda Revenue Authority (RRA) enforced VAT compliance by introducing electronic transactions device (ETD) and withholding VAT at source by government departments, and increased collection of tax arrears.



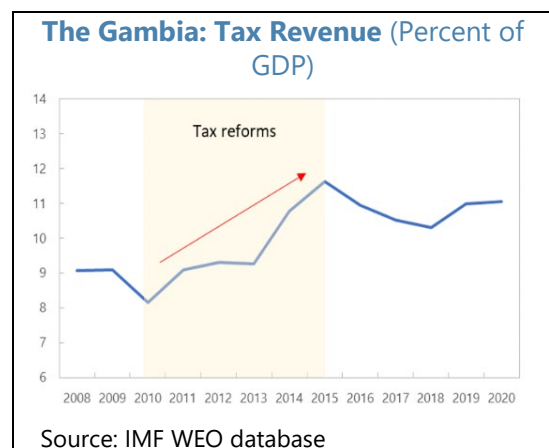
^{1/} This box is based on Akitoby et al. (2019, IMF) and IMF's country staff report.

Box 3. The Gambia Case (2010-15): A Package of Reforms on Indirect Taxes and Tax Administration with the Elimination of Fuel Subsidies^{1/}

The Gambia embarked on a package of indirect tax reforms and strengthened tax administration measures with fuel subsidy removal during 2010-2015.

As a result, the Gambia achieved a sizable increase in tax-to-GDP ratio from 8 percent in 2010 to 11.6 percent in 2015 (by about 3½ percentage points of GDP) (Figure 10). Specifically, the increase in indirect tax revenues contributed over half of the overall increase.

- The Gambian authorities introduced a new VAT to replace a sales tax in 2013.** Under the new VAT system, all supplies are considered taxable unless specified, while under the sales tax, only the supplies specified were taxable, which broadened the tax base. As a result, the introduction of VAT—which was a part of The Gambia’s commitment towards the ECOWAS protocol—lifted tax revenue by about 1-1.5 percentage points of GDP during the reform period.
- They introduced a specific excise on tobacco products.** In 2013, they revised the base of excise tax on cigarettes from weight to the number of packs, which increased the equivalent tax rate on cigarettes by about 25 percent. In addition, they introduced a new excise on non-cigarette tobacco products, and as a result, excise revenue from tobacco products increased by 0.5 percentage points of GDP during 2012-2014.
- They strengthened tax and customs administration through Compliance Improvement Plan (CIP).** The Gambia Revenue Authority (GRA) strengthened its audit capacity through hiring and training of staff and implemented a detailed “Compliance Improvement Plan (CIP)” for large taxpayers. Especially, for the launch of VAT, new tax and customs administrative procedures were implemented, and a monitoring function was established. As a result, about 86 percent of large taxpayers filed their income tax returns in 2012, up from 79 percent in 2011. Also, a new customs and excise law—which reflects international best practice in customs administration and provides platform for customs modernization—was enacted, with the custom department upgrading its IT system.
- Combined with tax measures, untargeted fuel subsidies were eliminated.** In Gambia, revenue losses from fuel subsidies reached 0.8 percent of GDP in 2011. To eliminate them, they reformed the fuel pricing formula towards flexibly changing retail price to reflect changes in international prices. From 2013, monthly fuel price adjustments were implemented, and fuel subsidies were eliminated in July 2014, which increased fuel tax revenues.



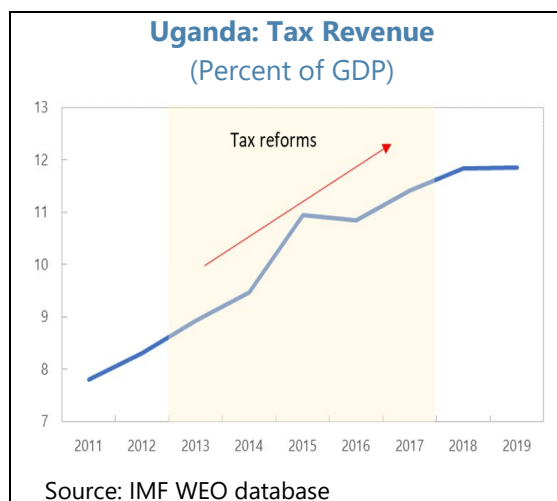
^{1/} This box is based on Akitoby et al. (2019, IMF) and IMF’s country staff report.

Box 4. Uganda Case (2013-17): Reforms on Indirect Taxes and PIT Based on Comprehensive National Revenue Plans Supported by Strong Political Will^{1/}

Uganda implemented reforms on indirect taxes, PIT, and taxpayer segmentation, based on comprehensive national revenue plans supported by strong political will.

As a result, Uganda's tax-to-GDP ratio significantly increased by 3.1 percentage points of GDP during 2012–2017 (Figure 11).

- Uganda's VAT reform focused on eliminating numerous exemptions.** The VAT system was reformed by submitting a new tax code to reduce many VAT exemptions. This included: eliminating VAT exemptions on sales of motor vehicles and trailers; extending VAT to computers; terminating VAT exemptions on hotels; and increasing the VAT threshold.
- The authorities increased several excise rates with broadening the base, as well as raising PIT rate in top bracket.** They increased excise duty on locally produced spirits from 45 percent to 60 percent, and increased excise duty on cigarettes by almost 60 percent in 2014. To broaden the base, they imposed excise duty on imported fresh juices, and increased excise taxes on a variety of products including fuel, sugar, mobile money transfers, and international calls. Furthermore, they increased the PIT rate (i.e., the marginal rate in its top bracket) from 30 to 40 percent, which significantly increased revenue.
- Uganda's tax administration reforms focused mostly on better segmentation of taxpayers.** The authorities established a high net-worth individuals (HNWI) unit as part of the LTO. They established a list of potential HNWI taxpayers and conducted outreach to educate them on their rights and obligations to pay taxes. After the establishment of the unit, the number of taxpayers and tax collection of this segment increased substantially. Also, taxpayer segmentation approach was expanded to the medium taxpayer segment (that accounts 20-25 percent of tax collection) with the creation of the MTO. Furthermore, they improved the quality of its taxpayer services by using "e-tax services" to facilitate taxpayers' registration, filing and payments, and implemented the Regional Electronic Cargo Tracking System (RECTS), a web-based system to monitor transit cargo in the EAC in 2017, which improved tax collection.
- Uganda implemented comprehensive national revenue plans with strong political will.** The authorities made political commitment for the reforms with strong political will. They announced and initiated the "National Development Plan (NDP) 2011-2015" targeting to raise the revenue-to-GDP ratio by about 0.5 percent per year over the medium term and adopted a "Medium-Term Revenue Strategy (MTRS)" in 2017.



^{1/} This box is based on Akitoby et al. (2019, IMF) and IMF's country staff report.

C. Implications: Nigeria's Tax Reform Path Forward

7. Successful revenue reform episodes in peer SSA countries could provide useful lessons for Nigeria. Although there is no one-size-fits-all strategy, we can find a tax reform path suitable to Nigeria's specific circumstances. Based on these cross-country experiences, staff recommends: (i) implementing a package reform of tax administration and tax policy measures; (ii) focusing mainly on indirect tax (VAT and excise) reforms and tax incentive rationalizations as effective revenue booster; (iii) undertaking tax administration measures for improving compliance by strengthening taxpayer segmentation and automation; and (iv) launching social dialogue with key stakeholders as well as high-level political commitment as an effective reform strategy. The detailed measures that can be considered are presented as follows:

A Package of Reforms

8. Below are key components of package reform of tax administration and tax policy. Details can be found in the following IMF TA reports (Baer et al., 2021; IMF 2018b; Yawwa, 2022; IMF, 2015)¹⁰.

VAT Reforms

9. VAT reform in Nigeria could be an effective and strong revenue booster. The literature has shown VAT is a strong revenue booster, and the countries that implemented VAT reform tend to raise more revenue than those without these reforms (Keen and Lockwood, 2010; Akitoby et al, 2019). Nigeria's VAT reforms could include:

- *Streamlining numerous VAT exemptions, based on a systemic review for exempted items.* Nigeria's generous VAT exemptions need to be streamlined to a better-targeted way that focuses more on basic items consisting of a larger share of the poor's consumption basket. Also, exemptions should basically be set for the public provision of non-commercial goods and services. These calls for the need for a comprehensive review for Nigeria's current VAT exemptions.
- *Introducing some basic rules of modern consumption tax in Nigeria's VAT system.* To prevent breaking up businesses into small companies with a view to avoid the VAT filling threshold, "anti-fragmentation rule" should be urgently added to the legislation.
- *Adopting the VAT rate comparable to Nigeria's peer ECOWAS country average (around 15 percent), as the recovery gains strength and compliance improves.* This includes further increasing VAT rate from the current 7.5 percent to 10 percent by 2023 and to 15 percent by 2027. This could be accompanied by introducing proper input tax credits and a registration threshold. Raising the VAT rate by 2.5 percentage points could additionally collect revenue by

¹⁰ This paper's recommendations are basically drawing on the diagnostics of technical assistance provided by IMF's Fiscal Affairs Department. Some original inputs are from Katherine Baer et al (2021) "Federal Republic of Nigeria: Priorities for Revenue Administration Reform in Difficult Times" (IMF Fiscal Affairs Department, Technical Report) and IMF (2018b) "Mobilizing Tax Revenue in Nigeria" (IMF Selected Issue Paper, February 2018).

around 0.3 percentage point of GDP. While VAT has usually a regressive nature, raising its rate under the Nigeria's current VAT system—with large exemptions and very low rate for basic items—could be less regressive.^{11, 12}

Excise Reforms

10. Excise reforms in Nigeria could contribute to both revenue mobilization and correction of externalities. Raising excise rates and broadening the tax base could be effective measures to raise revenue quickly without fundamental changes to the tax system since they are more inelastic than other taxation sources and can correct negative externalities (Akitoby et al., 2019). Nigeria's excise reforms could include:

- *Gradually raising the excise rates to the average level of Nigeria's peer (ECOWAS) countries* (around 50 percent). As economic recovery gains strength, Nigeria's excise rates on tobacco and alcohol (i.e., about 20-30 percent) could be doubled in real terms. Raising excise rates can be attained by any mix of increases in specific rates and ad-valorem rates—generally, specific excises are preferable, since they are simpler to administer and less vulnerable to avoidance through undervaluation (WB, 2021)¹³. Raising excise rates to the ECOWAS average level could yield the estimated revenue of about 1 percent of GDP in the medium term (WB, 2021).
- *Broadening the base by introducing new excises for the correction of externalities and revenue mobilization.* The authorities could consider introducing, for example: (i) new environmental charges on the use of plastic bags/bottles, aluminum cans, light bulbs, and fossil fuels¹⁴; (ii) charges on road transport infrastructure to reduce pollution and congestion—i.e., by

¹¹ Regarding the distributional impact of the increase in VAT rate, the findings of the literature have been mixed. Although many studies have shown that VAT is regressive in advanced economies (IMF 2018b), the results for developing countries are ambiguous (Bastagli et al., 2012). They have shown that in developing countries, VAT may be less regressive or rather slightly progressive, due to a bunch of VAT exemptions or lower rates for basic consumption items—consisting of a larger share of the poor's consumption basket than the rich's consumption basket. According to IMF (2018b), Nigeria's household survey data shows that the share of VAT payments in income is larger in the richer households than in the poorer households—which implies that raising VAT rate in Nigeria could likely have a slightly progressive (or less regressive) impact, under the Nigeria's current VAT structure.

¹² The VAT and excise rate (7.5 and 20-30 percent, respectively) is significantly lower (around a half) than the peer ECOWAS average (15 and 50 percent, respectively) and both have been very effective tools in mobilizing domestic revenues in other developing countries. On the contrary, reforms for personal/corporate income tax (PIT/CIT) and property tax are not recommended in this paper. The highest rates for PIT and CIT (which is 24 and 30 percent, respectively) in Nigeria is broadly in line with the averages of the EMDEs or ECOWAS (25 and 26 percent for PIT, 23 and 28 percent for CIT, respectively). Staff does not recommend raising the PIT and CIT rates, except for closing loopholes for CIT exemptions. The property taxation also requires significant preparation time and groundwork.

¹³ IMF (2018b) indicates that theoretically specific excises are preferable to ad-valorem excises in terms of the correction of externalities since external costs on the society of smoking/drinking/polluting are independent of the products' sales price. Also, excises could easily increase revenues without major administrative costs or hiring of additional staff, because specific excises require only counting (e.g., cigarettes) or measuring (e.g., alcohol) or volume (e.g., fuels) and they don't generate any contentious valuation issues.

¹⁴ The 2023-25 MTEF document mentions "introduction of green surcharge on imported vehicles" as one of the medium-term plans.

introducing an additional fuel duty on gasoline and diesel (but kerosene mostly used by the poor needs to be exempted); (iii) tax excises on luxury goods; (iv) new excises on gambling and lotteries including online betting (MTEF 2023-25). For these, a comprehensive review for all excise duties/levies should be conducted (IMF, 2018b). In addition to these, they could consider modernizing controls on excise-taxed products.

Table 2. Nigeria: Excise Duty Rates
(Percent)

	Cigarettes	Wine	Whiskey	Beer & Stout	Tobacco products	Sugar sweetened beverage ^{2/}	Telecom service ^{2/}
Ad-valorem rates	30% ^{1/}	20%	20%	N/A	N/A	N/A	5%
Fixed/Specific rates	N84k per pack (20 stick)	N40 per liter	N50 per liter	N50 per liter	N1,000 per kg / N3,000 per litre	N10 per liter	-

Sources: Tax aide (2022) / National Customs Service.

Note: ^{1/} The FGN, with effect from 1 June, commenced implementation of increasing ad valorem rate on cigarettes from 20 percent to 30 percent.

^{2/} Excises on sugar sweetened beverage (SSB) (Finance Act 2021) and telecom services have been implemented since H2 2022.

Tax Incentive Rationalization

11. Tax incentive rationalization is urgent to boost revenue. The authorities could consider:

- *Streamlining tax expenditures based on a comprehensive and periodic review.* A comprehensive and periodic review for the objective of each specific tax expenditure is needed, including a cost-benefit analysis of each tax expenditure.¹⁵ After the review, streamlining the identified tax expenditures should start with a suspension of introduction of new tax incentives, followed by rationalizing the existing ones (IMF, 2018b)¹⁶. In this process, tax expenditure should be scrutinized equally as budget expenditures, and the sunset clauses should be conducted mandatorily.
- *Transitioning inefficient tax incentives towards better-targeted investment incentives.* In general, for LICs, there exist more desirable options for investment tax incentives than tax holidays and income tax exemptions (IMF, 2015). These include: (i) investment tax credits and accelerated depreciation—which usually generate more investment per dollar spent than tax holidays and

¹⁵ The recent publication of “2021 Tax Expenditure Statement (TES)” is welcomed, but its analysis does not cover a specific appraisal for each tax expenditure—just focusing on estimating their overall size. IMF FAD is planning to conduct technical assistance for tax expenditure review in the near-term.

¹⁶ The 2023-25 MTEF exemplifies “capital gains tax exemptions and corporate bonds’ interest income exemptions” as the areas of tax expenditure needed to be reduced.

income tax exemptions; and (ii) tax incentives targeted at export-oriented sectors—which appear to be more effective than those targeted domestic market sector.

Tax Administration Reform

12. The authorities should improve compliance by strengthening taxpayer segmentation and automation and adopting a well-designed implementation roadmap. They could consider the followings:

- *The coverage of automation system needs to be further expanded under well-designed roadmap:*
 - (i) While “TaxPro Max” system is already operating three core modules of registration, filing, and payment (as well as audit and investigation modules that will be deployed before the end of 2022)¹⁷, the other back-office modules such as risk/debt management, refund and compliance are still processed manually, and need to be included in the system (Yavwa, 2022);
 - (ii) Taxpayers registered in the system should be further enlarged¹⁸ through mandatory participation of the Large Taxpayer Office (LTO) and the Medium Taxpayer Office (MTO) (iii) Last but not least, all these measures should be implemented under a well-designed roadmap.
- *Strengthening the segmentation of taxpayers, especially focusing on the LTOs.* Since the LTOs in Nigeria account for about 70 percent of taxes collected by the FIRS (ISORA, 2019), their performance is crucial. The authorities could consider reviewing the adequacy of the penalty regime for non-compliance in the LTOs (Baer et al., 2021).
- *Additional administration reforms could be considered in the areas of VAT, Customs, and PAYE as follows (Baer et al., 2021):*
 - *Developing a Compliance Improvement Program (CIP).* The FIRS could develop a CIP as a first step—focusing on enforcement measures on non-compliant taxpayers, basic compliance activities such as filing, payment and reporting requirements, and targeting the LTO and MTO registrants in the near-term.
 - *Designing and implementing a “comprehensive customs modernization program” beyond “e-customs”, which includes improving the effectiveness of customs’ overall processes such as valuation, exemptions, control, and monitoring, with full implementation of “e-customs”.*
 - *Enhancing the effectiveness of States IRS’s Pay-As-You-Earn (PAYE) administration.* The authorities need to consider: (i) reviewing the PAYE system to introduce a modern IT-based process for the State IRSs; (ii) using direct assessment of employees only where there is no possibility of collecting the PAYE from an employer; and (iii) establishing a

¹⁷ The FIRS confirmed during the mission (November 2022) that the TaxPro Max team conducted a user acceptance test for the tax audit and investigation modules and these modules will be deployed before the end of 2022. These are notable progress.

¹⁸ As of March 2022, the number of taxpayers registered in the TaxPro Max system is 400,562.

large employee compliance office (LEOs) in those states that collect PAYE from large businesses.

- *Strengthening inter-agency coordination and data sharing.* Data discrepancies and fragmentations still exist in Nigeria. Further data matching is needed in Nigeria to reduce administrative costs through strengthened inter-agency coordination. (e.g., institutionalizing the exchange of import data between the NCS and FIRS, sharing risk assessments and key compliance-related data between the FIRS and the State IRSs, etc.).

Reform Strategy: Political Commitment and Social Dialogue

13. The authorities are encouraged to prepare an effective reform strategy with political commitment and social dialogue with key stakeholders. As key revenue reform strategies, the literature has highlighted the importance of strong political commitment and buy-in from key stakeholders (Akitoby et al., 2019), because tax reforms usually accompany strong resistance. Especially in LICs with weak institutions and widespread corruption, “high-level political commitment” is essential to reduce resistance of vested interest groups, enhance inter-agency coordination, and gain reform momentum. Also, “social dialogue” with key stakeholders should be accompanied to reduce resistance. Empirical studies have shown that “communication” is a key part of successful reforms (Inchauste and Victor, 2017)— those that made clear the reason for reform, compensated those worst affected, and ensured that the benefit is widely shared tended to be more successful (Rentschler and Bazilian, 2017).

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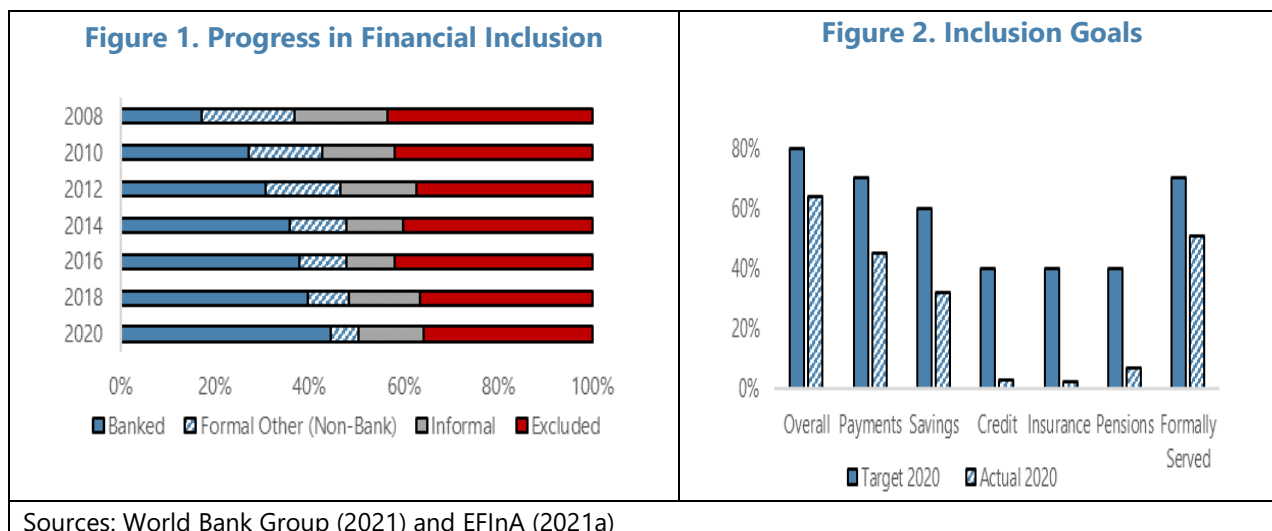
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NIGERIA—FOSTERING FINANCIAL INCLUSION THROUGH DIGITAL FINANCIAL SERVICES¹

A. Financial Inclusion: Achievements and Challenges

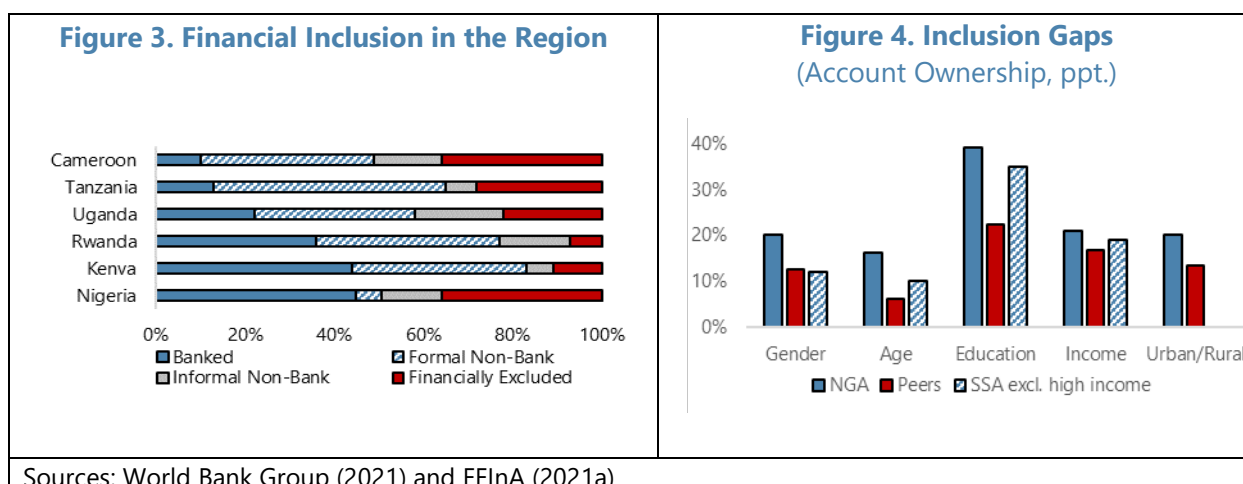
1. Financial inclusion rates have gradually improved but still fall short of the targets adopted in Nigeria’s 2012 financial inclusion strategy (revised in 2018, see CBN, 2018). The share of the adult population with a bank account has consistently increased and now accounts for more than two-thirds of financially-included individuals. However, this bankarization has been sourced in large part by integrating those having used the non-bank and informal financial sector. Overall, the share of the financially-excluded population is only slightly lower than in 2012 (Figure 1). Nigeria is also falling short in access to credit and particularly non-bank financial services (insurance, and pensions²; Figure 2). Many East African countries have lower shares of adult population with bank accounts but boast substantially higher inclusion rates—beyond 80 percent—through proliferation of non-bank accounts, particularly mobile money, which is still relatively scant in Nigeria (Figure 3).

2. Financial inclusion in Nigeria is not only relatively low but also uneven. While the gender gap in financial inclusion is relatively low, the gaps for the youth, people with low educational attainment or income as well as the urban-rural divide (only 56 percent are included in rural areas) are higher than in peer countries and Sub-Saharan Africa (SSA). As elsewhere in the region, the largest gap is found in educational attainment, which is likely owed to financial illiteracy.



¹ Prepared by Torsten Wezel (MCM) and Jack Ree (AFR).

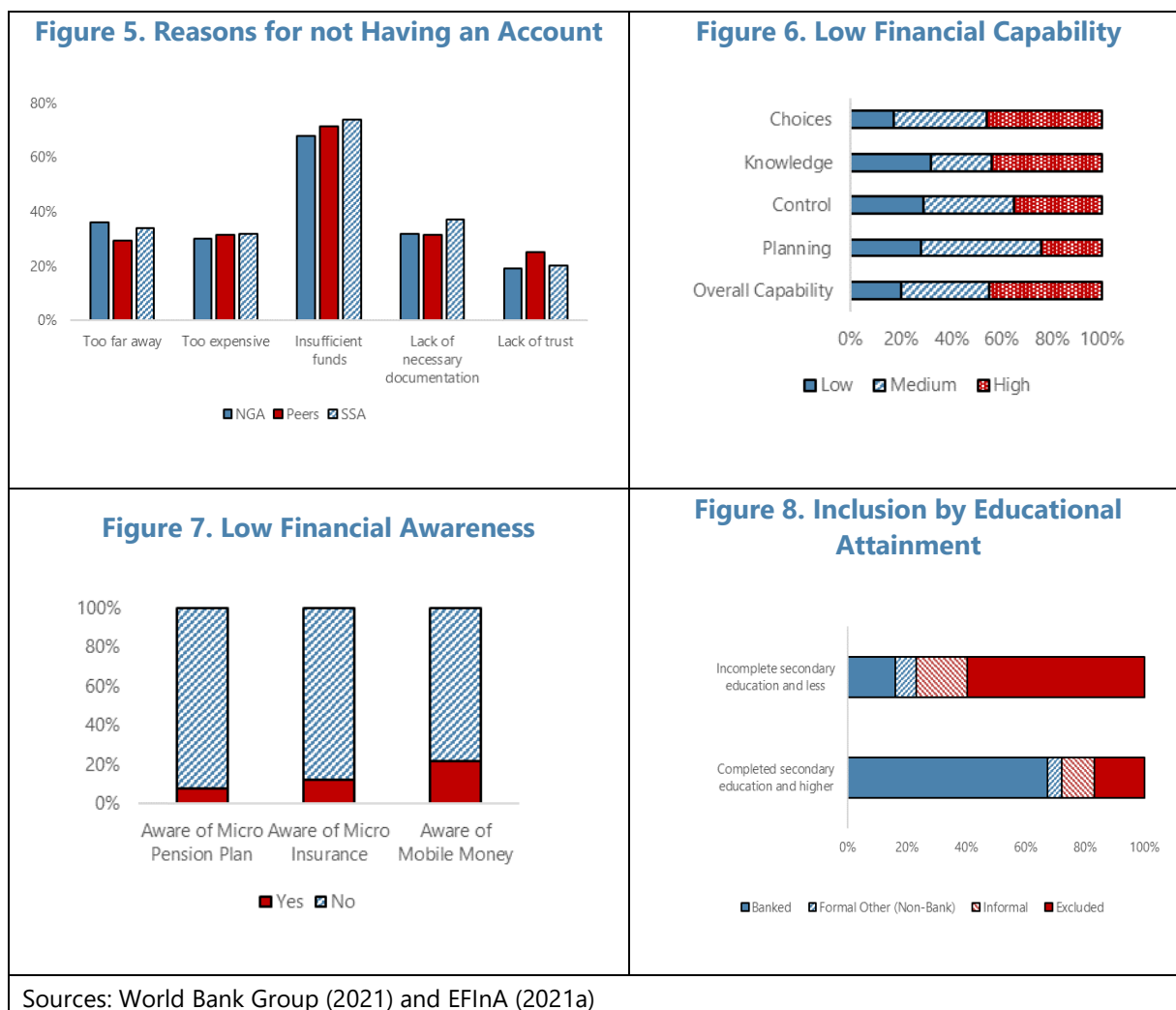
² A recent dedicated survey (EFINA, 2021c) found lack of income or irregular income associated with Nigeria’s large informal economy to be the primary reasons for not making regular pension contributions.



3. The reasons for not having an account are broadly the same as elsewhere in the region. In surveys, lack of resources or steady income is frequently cited as the main reason for not having an account, which in Nigeria is somewhat less binding than elsewhere. Other main reasons include the cost of financial services, the lack of required documentation (such as identification) and lack of trust in financial service providers. A critical obstacle relatively more pronounced in Nigeria is the onerous distance to financial access points (Figure 5).

4. Yet another obstacle is lack of financial literacy. A recent survey by EFINA (2021a), a UK development institution, found that in Nigeria more than half of adults have limited financial literacy and capability, particularly in financial planning (e.g., about two-thirds of respondents are seen to have a low-to-medium ability to spend, and manage risks prudently, while many rely on informal networks in a crisis; Figure 6). More than three-fourths are also unaware of specific financial services, including mobile money, which helps explain the relatively low mobile money account ownership (Figure 7; see also Section B). Financial illiteracy is also associated with low educational attainment (Figure 8). One reason is that financial topics tend to be taught toward the end of secondary education and therefore does not reach those dropping out earlier.

5. Financial inclusion policies have focused on networks and agent banking. In 2018, the CBN created a license for a payment service bank (PSB) that offers digital payments but no loans, and in 2022 it granted PSB licenses to two large telecommunication firms functioning as mobile money operators (MMOs), which has propelled inclusion. In 2019, the CBN created SANEF (*Shared Agent Network Expansion Facilities*) in cooperation with commercial banks, the national payments system NIBSS and MMOs to promote financial access points, provide a platform for account opening at any agent location, propel enrollment for bank verification numbers (BVN) and deepen financial literacy. The goal of having 500,000 agents by 2020 has been exceeded by far (1,375,000 as of September 2022), but as with the urban-rural inclusion gap there is still a shortage of agents in Northern Nigeria. There the agent spread amounts to only 34 percent compared to the expectation of 60 percent.



6. The private sector and international development partners have contributed to these efforts. Banks have sponsored agents (e.g., one large bank running a banking agent program) and, in individual cases, opened a virtual bank subsidiary. Development partners have also helped recruit banking agents (e.g., in 2017, IFC partnered with local *Lift Above Poverty Organization* to establish an agent-banking network (IFC, 2019)). EFINA organized a “fintech challenge fund” in 2018, helping develop innovative financial products for the low-income population (e.g., low-income investment vehicle, social-media based algorithm for lending, and point-of-sale credit by merchants).

7. Financial literacy has also been promoted. Policies have focused on educating youths (“national peer group program for financial inclusion of youths”) and enhancing the financial capabilities of consumers and civil servants. SANEF has been using its agent network to educate communities on financial inclusion and literacy, including through an e-learning portal (SabiMoni) promoting digital financial literacy. The CBN has worked on curriculum development and deployed trainers to all localities. A development partner (GIZ) has specifically focused on training of

entrepreneurs. The two institutions also partnered to create literacy modules that explain less-understood conditions of loan contracts, including for agriculture, and payments, fraud protection, consumer rights and financial decision-making. In addition to training, there has been emphasis on developing inclusive products that are better adapted to the circumstances of would-be borrowers (e.g., less rigid loan conditions), while also educating lenders about the specifics of their clients' value chain (e.g., seasonality in cashflows).³

8. There is a notable push for improving women's access to financial services (Box 1).

The authorities have launched several initiatives in recent years to increase women's financial inclusion, previously held back by their lower income, education, and trust in financial service providers (EFInA, 2019). This effort is complemented by international development organizations and non-governmental organizations that, among other things, have supported the use of agent networks for financial inclusion of women and for establishing and training of women's groups, including savings groups that in recent studies have been found to increase resilience to shocks like COVID-19 and food insecurity. Private sector representatives—notably banks and fintech companies—have launched tailor-made products (e.g., for goal saving, and loans for personal development) and training programs aimed at meeting the specific financial needs of women, including female entrepreneurs.

³ This effort is closely related to the concept of impact investment. Non-traditional investors like private equity and business angels consider key performance indicators beyond return on investment in projects with a specific sustainability, climate, gender, or job creation angle, particularly in agriculture, education; and health. A wholesale impact investment fund is to be launched by the government in 2023.

Box 1. Policies Promoting Gender Equality in Access to Financial Services

Part of the gender gap in financial inclusion can be explained by Nigerian women’s lower levels of income, education, and trust in financial service providers. At the same time, these commercial providers often do not see the business case for servicing financially excluded women (EFInA, 2019).

Against this background, the Nigerian authorities have been fostering women’s access to finance for years. Since the establishment of an inter-agency financial inclusion working group in 2015 and the *Denarau Accord for Women’s Financial Inclusion* in 2016 include, the authorities have launched a framework for advancing women’s financial inclusion to close the gender gap (2020) and created a “community of practice”—a knowledge hub for mainstreaming gender issues into financial inclusion policies—and a digital financial inclusion drive for account opening by women, (2021). The CBN has focused on gender equality in its policies and interventions for development, as reflected in a 65 percent share of female beneficiaries under its development fund for micro, small and medium enterprises launched in 2012.

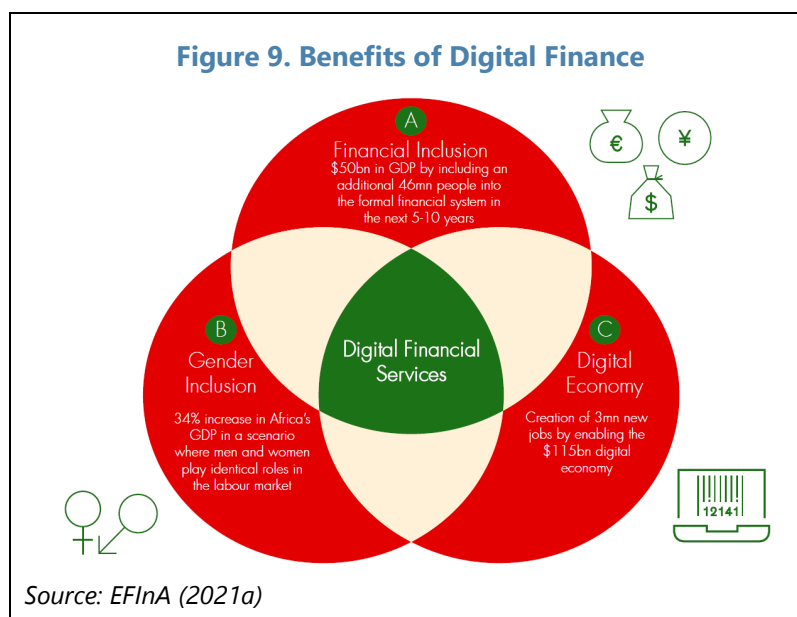
International development institutions and non-governmental organizations (NGOs) have been supporting Nigeria in women’s access to finance and underlying training in financial matters. For example, the Alliance for Financial Inclusion (AFI), run by 75 central banks and financial regulators from developing countries, in 2021, helped develop a targeted strategy to leverage agent networks for scaling up the spread of female agents, particularly in underserved areas of Northern Nigeria, which may help overcome cultural/religious barriers. The World Bank has financially supported women’s groups through the “Nigeria for Women Project” (World Bank, 2018)—a five-year pilot in six Nigerian states seeking to establish 21,600 “women affinity groups” (WAG) benefiting more than 300,000 women through starting informal savings and loan activities, which in Nigeria women use more than men do (EFInA, 2019), as well as conducting training in financial education and business skills. Donor partners (or philanthropic partners) such as the Bill & Melinda Gates Foundation have contributed through technical assistance and financing to an associated multi donor trust fund of the World Bank helping to design, institutionalize and evaluate the WAG model and foster innovations through it.

Recent empirical studies (de Hoop et al., 2022, Adegbite et al., 2022, and Meysonnat et al., 2022) conclude that Nigerian households with a female savings group member were more likely to have savings and to have obtained a loan during the pandemic. Also, savings group membership has been associated with food security and not being out of business, indicating that savings groups in Nigeria may contribute to resilience.

Of late, private sector stakeholders have also begun to contribute to the effort by developing financial products designed to meet the specific needs of women. Some banks have directed their business focus to access to finance for women, offering a suite of tailor-made financial instruments and entrepreneurial training. Non-bank players like fintech companies have launched projects facilitating goal savings and obtaining loans for personal development or directly support female smallholder farmers through lending and training.

B. Evolution of Digital Financial Services

9. Digital financial services can have a tangible impact on financial inclusion and the economy at large. Digital technology fosters the provision of financial services to rural communities and underserved segments of the population, leveraging high mobile phone availability in Nigeria (about 80 percent of adults). It also extends coverage in financial services through enabling lower-cost solutions (e.g., mobile transfers are less costly than traditional forms of money transfer). Lastly, it fosters economic growth by enabling new business models, investment in digital infrastructure, and e-commerce.

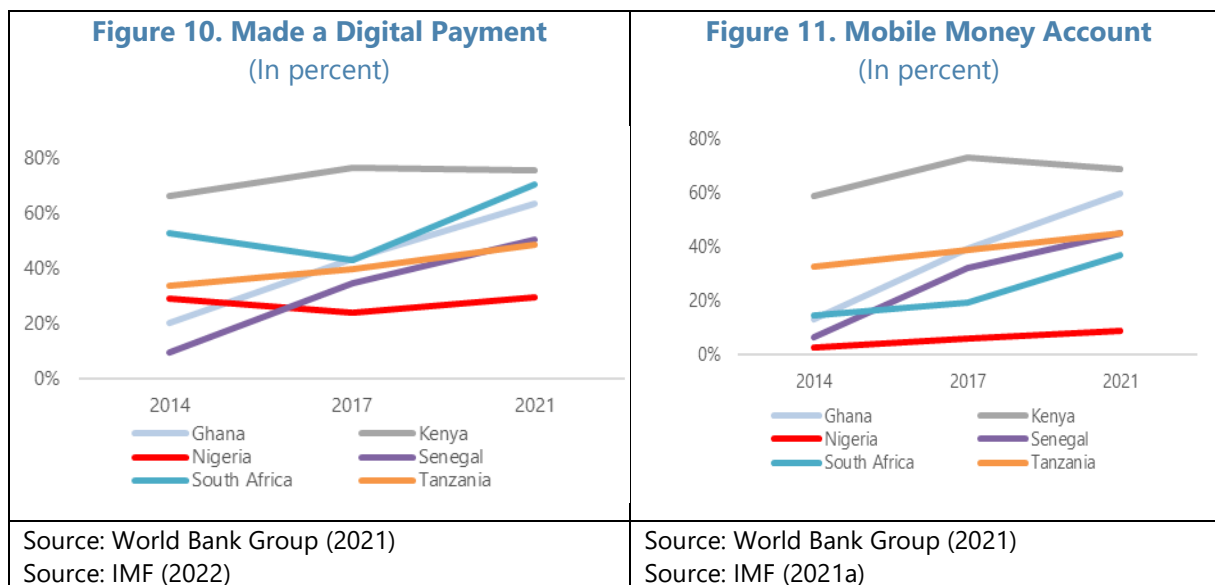


10. Digital finance in Nigeria has been fostered by a vibrant fintech sector. In the early stage of fintech in Nigeria (the early 2000s), the focus was on business-to-business (B2B) and later business-to-consumer (B2C) services, including replacing cash payments by mobile money in the context of the CBN's Payment System Vision 2020. Today, the Nigerian fintech ecosystem offers a full array of financial services, including digital consumer lending which has prompted consumer protection concerns over predatory pricing absent stringent centralized regulation. The fintech sector has benefitted from ample investment, including by external investors, amounting to over US\$1 billion since 2018.

11. Despite obvious merits and ready fintech supply, the use of digital payments is less common in Nigeria than in peer countries. According to the World Bank Findex survey, only about one-third of the adult population has ever made a digital payment (Figure 10), notwithstanding the full array of available electronic tools. Nigeria is also underperforming in mobile money ownership compared to more dynamic peer countries (Figure 11). The transaction intensity of mobile money accounts is also much lower than in early adopter countries (e.g., Kenya) or late proponents (e.g., Senegal). Judging by a mobile money prevalence index weighing account ownership, activity, and agent availability (GSM Association, 2021), Nigeria trails several low-income countries in SSA (Figure 12). As a silver lining, starting from this low level the volume of mobile transfers more than doubled year-to-date through August 2022 relative to the same period the previous year (NIBBS, 2022).

12. There are also sizable gender and other gaps in mobile money account ownership. Even at Nigeria's low level of mobile money account ownership, gaps are growing in ownership by

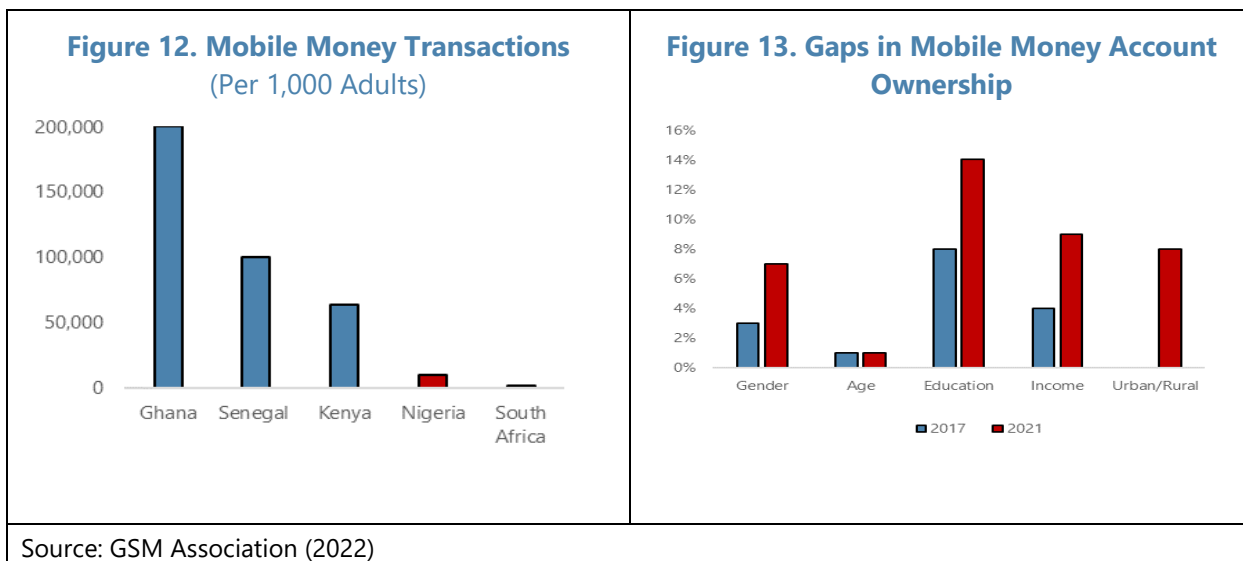
income level, and particularly by educational attainment (Figure 13). The latest Findex survey also found a significant urban-rural divide. The widening of these gaps is mainly due to stagnating account ownership among women, citizens with basic education, and low-income earners.



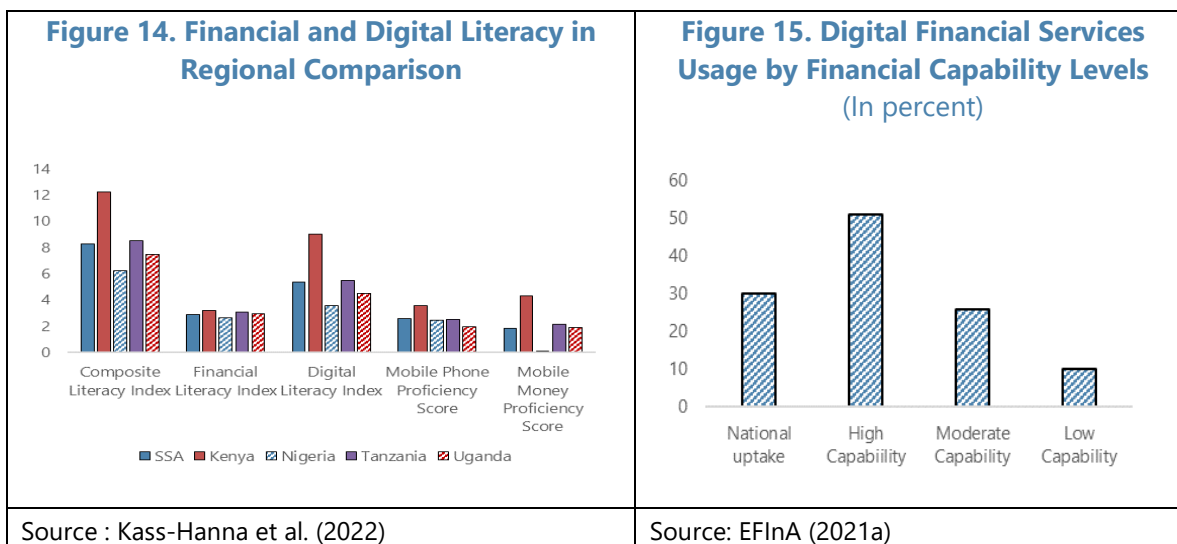
13. Mobile money usage is low due to an apparent preference for cash as well as cost and trust issues. A recent survey (GSM Association, 2022) indicates that preference for cash is the primary reason in Nigeria for not having a mobile money account. Similarly important are alternative means of money transfer and using agents for cash transfers—more so than in other African countries included in that survey (Egypt, Senegal). In addition, lack of affordability and trust plays a major role. According to the EFINA (2021a) survey, two-thirds of Nigerians still trust banks more than fintech operators. On the other hand, technical and network issues are a minor factor relative to these comparator countries.

Table 1. Nigeria: Reasons for not Having a Mobile Money Account

		Africa		
		Egypt	Nigeria	Senegal
Relevance	Preference for cash	62%	47%	56%
	Alternatives to transfer money	29%	46%	32%
	Friend/Family has MM account I can use	24%	7%	58%
	Use OTC	25%	39%	43%
Knowledge/skills	Lack of money	34%	23%	49%
	Don't know how to use MM	30%	26%	41%
	Difficulties using a handset/might make errors	28%	18%	44%
Affordability	Literacy	22%	20%	49%
	Affordability	33%	13%	15%
Access/enablers	Unreliable network	25%	7%	18%
	Lack of access to agents	18%	7%	19%
	Lack access to electricity	18%	4%	17%
	Lack of necessary documentation	22%	14%	13%
Safety/security	Safety and trust	33%	19%	23%
	Don't trust agents	26%	19%	21%



14. Another reason for low mobile money usage is sub-par digital financial literacy. A recent study (Kass-Hanna et al., 2022) using 2017 data to construct literacy indices across Asian and African countries found that Nigeria lags peers, SSA and non-SSA, not only in overall financial literacy, but also in digital financial literacy associated with mobile phone ownership and particularly mobile money proficiency measured along several dimensions of usage. Uptake of digital finance is associated with the afore-mentioned measure of financial capability, with only one in ten of those with low capability using such services (Figure 15).



15. Policies promoting digital financial services have focused on incubation and financial infrastructure. In 2021, the CBN published a framework for its new regulatory sandbox (CBN, 2021a) to reduce the time-to-market for innovative products and business models advancing financial inclusion and has reportedly selected the first cohort of projects focused on creating inclusive products. The same year, the CBN issued a regulatory framework and subsequently operational guidelines for its open banking framework (CBN, 2021b and 2022) that promotes, through Application Programming Interface (API) technology, direct debit, mobile money

accounts, payment card use, and data exchange among banks and with non-bank providers (e.g., fintechs). For the first time, it will also provide a full picture of a client's indebtedness through consolidation of lenders' information. The framework is presently still in the consultation phase and therefore not operational yet [check with CBN, including live date]. Another effort has been the introduction of simple access technology (by QR codes, USSD strings, near-field communication) to onboard citizens without smartphone.

16. Peer countries have deployed dedicated mobile money policies. In the late 2000s, Kenya and Tanzania adopted an explorative approach to regulating the mobile money sector, closely engaging with the nascent industry while still taking precautions to safeguard financial stability. The two countries also focused on promoting a wide network of mobile money agents to propel financial inclusion (Box 2).

Box 2. Mobile Money Policies in Kenya and Tanzania

East African peers Kenya and Tanzania had a head start to mobile money in the late 2000s when their central banks decided to apply a “test and learn” approach to regulation of mobile money services (GSM Association, 2014 and 2015). The idea was to avoid being overly prescriptive or overregulate the budding sector while still taking measures to preserve financial stability. In Kenya, a nonbank was permitted to launch M-PESA in 2007, the first major mobile-enabled money transfer and payment system, based on a letter of non-objection instead of a full-fledged regulatory framework. Still, provisions were made to safeguard customer funds through trust arrangements, ensure KYC procedures, and apply transaction limits to avoid the use of mobile wallet as substitute for bank accounts. Shortly thereafter, Tanzania's regulator followed suit, also issuing non-objection letters to partner banks of M-PESA and other providers. The two central banks have maintained a close dialog with the industry to finetune their collaborative regulatory approach in line with dynamic market developments. By contrast, Nigeria took time to develop a regulatory framework for payment service banks before eventually issuing licenses to two major telecommunications firms in 2022. Both countries placed emphasis on the rapid development of a network of mobile money agents, providing cash-in-cash-out services and onboarding the population to non-bank financial services. Tanzania has required agents to provide multiple outlets, a share of which should be in rural areas. Kenya achieved a ubiquitous distribution network at the grassroots level, with mobile money agents dwarfing the number of traditional bank agents. This contrasts with Nigeria where bank agents offering a mix of banking and mobile services abound. However, the mobile money network has generally been an on-ramp for other, more formal financial services, thereby deepening financial inclusion.

At the same time, the focus on mobile money has led to a smaller gender gap in financial inclusion among mobile money users in Kenya—half of the gap found for the banked population, see Fanta and Mutsonziwa (2021). That study also finds that in Kenya and Tanzania financial literacy is strongly linked to an increased level of financial inclusion, corroborating that financial literacy campaigns are critical.

17. At the sub-national level, individual states have pursued their own sets of policies. For example, Kaduna State has implemented a multi-faceted strategy aimed at digitizing payments, issuance of digital IDs, narrowing the gender gap in financial inclusion, establishment of access points in all its 23 local Government Area Councils as well as identification and removal of gaps in the telecommunications network (Box 3). The strategy has had notable success in onboarding citizens through large-scale digital ID issuance and could therefore be considered a model for furthering financial inclusion at the national level.

Box 3. Financial Inclusion Policies in Kaduna State—A Blueprint for Nigeria?

In some ways, Kaduna State in the north of Nigeria can be considered a socioeconomic miniature copy of the country. The state's financial inclusion journey started in 2015 when the administration decided to digitize all government-to-person payments—a central step in helping citizens avoid lengthy journeys to banks to collect salaries and use cash-in-cash-out (CICO) service. Despite the digitization, however, associated absenteeism and the lack of associated payment infrastructure remained high as workers still relied on cash withdrawn from financial access points. The state subsequently decided to gather empirical evidence, commissioning a feasibility study on the introduction of a state-wide digital payments system in 2020.

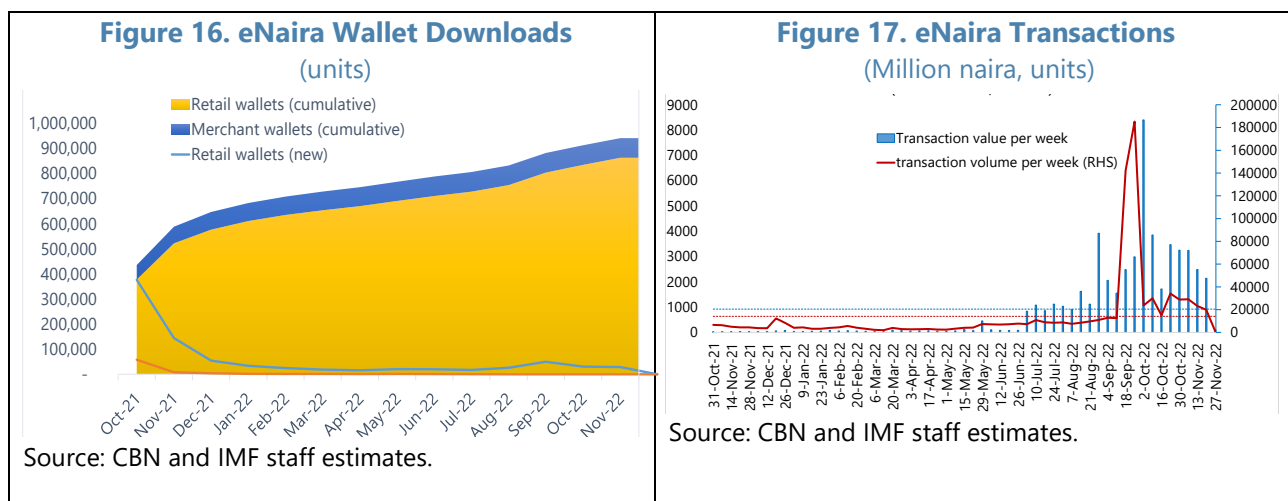
Given limited resources for implementation, the state then resolved to prioritize the promotion of digital ID and financial inclusion of women (an EFINA study conducted specifically for Kaduna State (EFInA, 2021b) found the gender gap to be 13 percent, though smaller than the national one). Enabled by close cooperation between the federal government (National Identity Management Commission) and the state through an MoU enabling an interface to the national identity management database, 5.2 million of the 9 million residents of the state (about 60 percent) are now enrolled in the digital ID database, and the state has commenced the issuance of a readable multi-functional digital residency card that can be used for CICO transactions. Close to half of the enrolled residents are now financially included. To narrow the gender gap, the state created a women empowerment fund in 2019, with two-thirds being new to banking services, and a pilot to promote sound spending decisions among female vendors for the school feeding program is being planned.

Other steps included (i) creation, in 2021, of a community-of-practice platform for discussion of financial inclusion ideas among banks, fintechs, CBN, government officials, academia, and civil society; (ii) a partnership with a large private bank to establish access points in all local government council areas of the state (partially achieved; two-thirds did not have a bank branch previously); and (iii) a mapping of network blind spots across the state to ensure minimum cell network coverage in order to enable USSD digital transactions, with about 90 percent of the identified blind spots now being on air.

Kaduna State's inclusion strategy that has successfully relied on a multi-pronged approach in addressing physical access gaps could be considered a blueprint for Nigeria as a whole. The peer review program of the Nigeria Governors' forum is known to be intent on implementing ideas from individual states at the federal level.

18. Nigeria’s CBDC, the second CBDC after The Bahamas, is envisaged to bring benefits for financial inclusion and remittances over time. Key benefits may of the new eNaira include:

- *Increase in financial inclusion.* For now, the eNaira wallet is provided only to people with bank accounts. However, allowing those without bank account but with a mobile phone to access eNaira would increase financial inclusion.
- *Facilitation of remittances.* Nigeria is a key remittance destination in SSA. Remittances are typically made through international money transfer operators (IMTOs), with fees ranging from 1 to 5 percent of the transaction value.⁴ The use of eNaira for remittances is expected to lower that transfer cost.⁵



19. Developments since the launch in October 2021 have been mixed.⁶ Despite some initial technical glitches (Coincu, 2022), no major risk factors (e.g., a large-scale cybersecurity event) have materialized. However, the adoption of eNaira by households and merchants has been rather slow. After a strong initial uptake, wallet downloads have slowed, reaching 0.8 percent of bank accounts, and merchant wallet downloads amount to about 10 percent of merchants with point-of-sale terminals. Similarly, wallet activity is low, with most wallets appearing inactive. The average

⁴ The effective cost of remittances through IMTOs is generally higher because of exchange rate margins. However, as Nigeria only allows remittances executed in the currency of the country of origin, only direct fees are considered here.

⁵ According to World Bank’s Remittance Prices Worldwide database (World Bank, 2022), the average cost of sending 200 dollars’ worth of cash (excluding other means of payment such as bank deposits) from various surveyed countries to Nigeria was 10.4 percent in 2020Q2, of which 47 percent (4.8 percentage points) was attributed to the exchange rate spread.

⁶ Some countries and regions (e.g., China) had rolled out CBDCs earlier but only as pilots—hence granting access only to a subset of their citizens. According to the Atlantic Council’s CBDC tracker, more than 100 countries are currently exploring CBDC in various phases (development, pilot, or launch). The eNaira uses blockchain technology like crypto assets or stable coins do and is stored in digital wallets and can be used for payment transactions.

number of weekly eNaira transactions since the launch amounts to only 8 percent of wallets, with an average transaction value of N53,000 (about US\$120).

C. Policy Options for Fostering Financial Inclusion

20. To make progress with their ambitious inclusion agenda, the Nigerian authorities would need to refocus policies along several dimensions. The set of policies should preferably be aimed at meeting realistic intermediate inclusion targets still to be formulated, especially in the use of specific financial products, and they should more explicitly address the significant age, education, income, and geographical inclusion gaps. The operational, capacity building and regulatory measures would need to focus on remedying physical barriers to financial access, improving financial literacy, promoting digital and data infrastructure, devising a well-balanced framework for fintech operations, and further enhancing the eNaira technology (see Table 2 for a summary of recommendations).

21. Specifically, key supply side measures should focus on increasing financial access points and leveraging digital identification. Notwithstanding the achievements in agent banking, the authorities should deepen efforts to establish a “last mile” distribution network to reach remote and vulnerable populations that still depend on cash-in-cash-out operations and to address the issue of viability of agents in those underserved areas. The CBN and SANEF have put policies in place, but efforts need to be intensified to address the remaining agent shortage in rural areas sustainably and to enhance the supply of basic mobile money products through agents. Second, use of the digital financial infrastructure could be further improved by, inter alia, intensified ID onboarding and allowing digital ID for client verification in opening basic (Tier 1) bank accounts. Also, the authorities could consider encouraging digital ID registration for receiving social transfers from government, especially for those without an ID.

22. At the same time, demand side measures are critical. The authorities, primarily the CBN, should make capacity building in financial literacy, including digital literacy, more attuned to the needs of the underserved population by emphasizing use cases to clients (particularly with little-used products like credit, insurance, and pensions) and providing practical instruction in applying those instruments confidently. It will also be important to make operating interfaces and documentation available in major local languages (e.g., Hausa, Kanuri) to remedy comprehension issues. And to promote use of mobile money and lessen the preference for cash, targeted education of the public to anchor the notion that mobile money is safe and more cost-efficient than traditional cash-in-cash out operations would be key.

23. Promotion and regulation of fintech operations also need to be stepped up. While the CBN is set to make its regulatory sandbox fully operational, it should consider collaborating, rather than competing, with the fintech industry’s existing sandbox to reap synergies, including in shared use of the infrastructure. When the sandbox is operational, the CBN should prioritize projects aimed at financial inclusion of the underserved population. Also, regulation for digital lending should be passed at the national level to establish uniform oversight while safeguarding

cybersecurity and consumer protection to inhibit abusive practices that have reportedly occurred under state licensing and oversight. These digital lenders should also be integrated into the credit reporting system for a consolidated view of client indebtedness.

24. Lastly, enhancements to the CBDC could have a catalytic effect for financial inclusion.

This would require a well-prepared strategy to maximize synergies with incumbent fintech providers and developing additional use cases for eNaira.⁷ Specifically, the CBN could integrate eNaira into the existing mobile payment system by allowing MMOs to onboard their clients to the eNaira system and integrating the eNaira wallet into existing mobile money apps. CBDC could also be considered as an instrument for delivery of social assistance. And enabling the use of eNaira for remittances could generate cost savings and provide incentives to the population, including those still financially excluded, to obtain an eNaira wallet.

Table 2. Nigeria: Priority Policy Options for Fostering Financial Inclusion	
Objective	Measures
Further Increase Financial Access Points	<ul style="list-style-type: none"> • Deepen ongoing efforts to establish a “last mile” distribution network • Further increase the number of agents in underserved areas and promote supply of mobile money products
Promote Digital Financial Services	<ul style="list-style-type: none"> • Push ahead with ID onboarding and leverage digital ID for inclusion • Run media campaigns underscoring the benefits of mobile money
Improve Financial Literacy	<ul style="list-style-type: none"> • Provide targeted capacity building in financial literacy, including on use cases of financial products • Supply operating interfaces and documentation of financial products also in local languages

⁷ See also Ree (2022), “Nigeria’s eNaira, One Year After”, IMF Working Paper (forthcoming).

Table 2. Nigeria: Priority Policy Options for Fostering Financial Inclusion (concluded)	
Upgrade Framework for Fintech Operations	<ul style="list-style-type: none"> • Upon operationalization of CBN sandbox, prioritize projects benefitting financial inclusion and consider cooperation with existing industry sandbox • Pass regulation for digital lending at the national level to establish uniform oversight and integrate digital lenders into the credit reporting system
Enhance CBDC Features and Use	<ul style="list-style-type: none"> • Integrate eNaira into the existing mobile payment system • Consider eNaira for delivery of social assistance • Enable use of eNaira for remittances

D. Conclusions

25. Financial inclusion in Nigeria has had undeniable successes, yet many challenges remain. The onboarding of residents to the banking sector has consistently progressed but the overall exclusion rate and the one for the use of specific financial products continue to exceed official targets by far. The reasons for inclusion gaps, also in terms of gender, education, income, and geography, include long distances to financial access points, limited financial literacy, and relatively low use of mobile money and payments. Policies have focused on improving networks and financial access points and need to continue doing so while also pushing ahead with ID onboarding and refocusing the approach to financial education. Various recent initiatives aimed at promoting financial literacy and access to finance of women hold promise for narrowing the financial inclusion gaps.

26. Digital financial services have seen a slow adoption and warrant further promotion. While the fintech ecosystem provides a full array of financial services, uptake of digital financial services, notably mobile money, is still lower than in peer countries due to preference for cash operations as well as cost and trust issues. Policy initiatives to foster financial inclusion and digital finance have been diverse but going forward would need to focus even more on improving digital financial literacy, upgrading digital infrastructure, and promoting fintech incubation and sound practices in fintech operations, notably digital lending.

27. Nigeria's CBDC has the potential to boost financial inclusion if accompanied by a comprehensive package of supportive policies. In an economy like Nigeria, which has been slow in mobile money adoption, CBDC may play a catalytic role in fostering mobile money penetration by functioning as a bridge for cheaper and faster interoperability. CBDC's synergy with mobile money along these lines could also help further digitize government finance, for example in social cash transfers. Remittance cost savings from integrating CBDC as a bridge vehicle in the existing remittance process may also be substantial and promote financial inclusion.

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