

Sierra Leone Economic Diversification Study – (P162720)

Contents

Acknowledgements.....	2
Abbreviations and Acronyms.....	3
Executive Summary.....	4
Table ES1: Summary of Recommendations.....	7
1. Context, Challenges, and Rationale for Diversification	11
1.1. Context and Challenges.....	11
1.2. Growth by Sector: A Historical Perspective.....	13
1.3. Within-sector Growth in Manufacturing: Drivers and Constraints	18
1.3.1. Basic Characteristics of the Manufacturing Sector	18
1.3.2. Manufacturing Productivity: A Comparative Analysis.....	20
1.3.3. Worst Obstacles to Firm Operations	22
2. Firm Productivity and Options for Diversification	23
2.1. Determinants of Firm Productivity	23
<i>Firm Structure (Age, Size and Formality).....</i>	<i>24</i>
<i>Management.....</i>	<i>27</i>
<i>Regulation</i>	<i>28</i>
<i>Infrastructure.....</i>	<i>29</i>
2.2 Lessons from Comparators on Global Competitiveness.....	30
2.3 Paths to Economic Diversification	33
2.3.1 Product and Sector Opportunities: Economic Fitness Analysis	34
2.3.2 Options for Economic Diversification: Economic Complexity Analysis	36
2.4 Summary of Findings and Policy Implications.....	39
3.0 Conclusion and Policy Recommendations.....	41
References	47
Appendix A	49
Appendix B: Recent Business Environment Reforms.....	56

Acknowledgements

This Sierra Leone Economic Diversification study is a product of the World Bank Macroeconomics, Trade, and Investment Global Practice. The report was prepared by Youssouf Kiendrebeogo (Senior Economist and co-TTL, EA1M1) and Kemoh Mansaray (Senior Economist and co-TTL, EA1M1), under the overall guidance of Abebe Adugna (Practice Manager, EA1M1), Pierre Frank Laporte (Country Director, AFCW1), Gayle Martin (Country Manager, AFMSL) and Errol George Graham (Lead Economist, EA1M1). The report benefited from comments and suggestions from peer reviewers Ivailo Izvorski (Lead Economist, EECM1), Dobromir Christow (Senior Private Sector Specialist, EA1F2), and Mats Liljefelt (First Counsellor, Delegation of the European Union [EU] to Sierra Leone). Fatu Karim-Turay (Executive Assistant, AFMSL), Lydie Ahodehou (Program Assistant, EA1M1), and Karima Laouali Ladjo (Program Assistant, EA1M1) provided excellent administrative support. The team would like to thank the Sierra Leonean authorities and the EU Delegation to Sierra Leone for their fruitful collaboration.

Abbreviations and Acronyms

AGOA	African Growth and Opportunity Act
APC	All People’s Congress
BSL	Bank of Sierra Leone
COS	Country Opportunity Spotlight
EAP	East Asia and Pacific
ECOWAS	Economic Community of West African States
EDPRS	Economic Development and Poverty Reduction Strategy
EVD	Ebola virus disease
GDP	Gross Domestic Product
GDP PC	GDP per capita
HCI	Human Capital Index
ICT	Information and Communications Technology
IGC	International Growth Center
LCU	Local Currency Units
LSE	London School of Economics
LPI	Logistics Performance Index
NDP	National Development Plan
SCD	Systematic Country Diagnostic
SSA	Sub-Saharan Africa
SLPP	Sierra Leone People’s Party
TVET	Technical and vocational education and training
US\$	U.S. dollar
VA	Value-added
WEF	World Economic Forum
WAEMU	West African Economic and Monetary Union
WBES	World Bank Enterprise Surveys

Executive Summary

Thanks to advantageous geography, Sierra Leone has abundant natural resources but as yet has not been able to deliver more and better jobs for its fast-growing population. Located on the southwest coast of West Africa and bordered by Liberia to the southeast and Guinea to the northeast, the country is among the largest producers of such mineral resources as iron ore, diamonds, titanium, bauxite, and gold. Its population is young and very dynamic; for the last decade, annual population growth has averaged 2.3 percent. In 2018, the age-dependency ratio was 76 percent—above the 72 percent average for fragile and conflict-affected states. With the working-age population growing faster (2.8 percent in 2017) than the population as a whole (2.2 percent), Sierra Leone has a pressing need for more and better-paying formal jobs.

For the last decade, the economy has been expanding at an average annual rate of 5 percent, but volatility and macro imbalances are worrying. The high GDP growth is mainly driven by agriculture and mineral production. Despite recent improvements, macroeconomic imbalances have historically been characterized by deficits in both fiscal and external balances. As a result, the country is at high risk of debt distress. Real income per capita, estimated at US\$469.80 in 2018, is among the lowest in the world and is still well below the pre-Ebola level of US\$562.80. Human capital is relatively low, and poverty and inequality are high.

At the macro level, the distribution of value-added and employment in the economy is heavily skewed to traditional sectors. Agriculture accounts for 60.3 percent of GDP, services for 32.4 percent, and industry for 5.1 percent. Agriculture also employs more than 58 percent of Sierra Leone's labor force, compared to 35.4 percent in services and 5.7 percent in industry. Historically, however, labor productivity has been lowest in agriculture. Much of Sierra Leone's aggregate output growth has been driven by within-sector growth; there has been little structural transformation. Promoting economic diversification to reallocate resources (capital and labor) from low- to high-productivity sectors would promote growth in GDP per capita and reduce poverty.

At the micro level, in Sierra Leone labor productivity in manufacturing tends to be lower than in other African countries. The median manufacturing firm in Sierra Leone has a value-added (VA) per worker of US\$779.96, compared to \$8,442.12 in Côte d'Ivoire, \$6,897.31 in Benin, \$6,325.52 in Senegal, and \$3,921.86 in Cameroon. Between 2009 and 2017 labor productivity in the country's manufacturers fell; it also varies considerably by firm. By far the most productive manufacturing industry is plastics and rubber, with a median VA per worker of \$4,558.20. The least productive is garments, with a median VA of just \$381.40. Moreover, exporting firms are more productive than non-exporters, formal firms more productive than informal, and firms in the Western Urban region much more productive than those elsewhere in the country. In general, too, labor productivity increases with firm size and age. Employment in manufacturing also varies by industry. The median chemical firm employs 101 permanent, full-time workers, and is by far the most important creator of jobs.

Most Sierra Leonean manufacturing firms report that the steepest barriers they faced in 2018 were access to finance (33.6 percent), access to electricity (17.8 percent), and corruption (11.8 percent); but the importance of these obstacles varies by firm characteristics. For instance, of the 33.6 percent of firms affected by the lack of access to finance, only 8.4 percent are exporters. Of the 17.8 percent of firms reporting access to electricity as a major constraint, only 3.1 percent are exporters; and of the 11.8 percent concerned about corruption, just 1.6 percent export.

To diversify its economy, Sierra Leone must make agriculture more productive and support agribusinesses; to make manufacturing more productive, value must be added to key products.

From an economic fitness point of view, the analysis reported here suggests that agriculture is the most desirable sector for diversification. Making it more productive is a direct path to job creation, sustained inclusive growth, and poverty reduction. Promoting private sector delivery of agricultural inputs, improving extension services to provide skills, offering support and training for farmers, and reforming the customary land tenure system will be critical to boosting agricultural productivity. To do so, Sierra Leone must also improve access to markets by investing in feeder roads and encouraging private investment in selected agricultural value chains. Also, vital to support agribusiness growth will be enhancing financial literacy, increasing investment in financial infrastructure, and incentivizing financial operators to expand agent networks and access points.

Sierra Leone could also generate more nonfarm jobs and promote economic diversification by adding value in manufacturing. Targeted interventions to enhance regulation of business could attract solid private investment in fish processing and rice milling and trading. Promoting rice production and artisanal fishing is an attractive path for economic development because such labor-intensive industries are able to generate much-needed jobs. The government could also foster greater economic links with capital-intensive mining by building or rehabilitating regional infrastructure that links mines to markets and basic services and creating opportunities for value-added cutting, polishing, and jewelry manufacture with semiprecious stones.

To remove bottlenecks to sustained productivity growth and poverty reduction, Sierra Leone needs to intensify investment in physical capital to support value-addition in manufacturing.

The government should also expand access to energy and improve the reliability of electricity by reducing the frequency and duration of power outages. That would free up capacity in manufacturing (notably food processing and semiprecious stones) and services (formal and informal) and would support financial inclusion. Investment in the fiberoptic network could enlarge the footprint of digital financial services and mobile phone penetration and thus promote firms' use of technology. It would also be desirable for the government to scale up investment in the transportation network, especially feeder roads to link farmers to regional and to international as well as domestic markets.

Investment in human capital and skills is crucial to promote private sector-led productivity growth and poverty reduction. To build human capital, it will be important for the government to maintain its free quality education and health programs and continue to upgrade the efficiency of public service delivery. Restructuring technical and vocational education and training (TVET) and tertiary education would not only improve the quality of the training but also better align job

skills with market demand. Improving the quality of education has been shown to improve the uptake of modern farming practices and allow, for example, fishers and fish traders to move up the value chain.

To diversify Sierra Leone’s economy and promote private sector–led investment, it is vital to improve firm competitiveness and regulation of business and to build up governance and institutions.¹ That would entail, e.g.,

- streamlining the process of registering businesses and property,
- increasing access to credit,
- enhancing investor protection,
- ensuring prompt contract enforcement,
- revising solvency regulations,
- removing impediments to obtaining electricity and water connections,
- streamlining payment of taxes, and
- simplifying processes for obtaining permits and licenses.

Specific recommendations for reaching these outcomes are provided in Table ES.1. To facilitate private sector–led growth, it will be important for the government to intensify anticorruption initiatives, improve the transparency of public sector decisions through dialogue with the private sector, streamline license and permit processes and lower fees for small projects, revise the laws related to land administration, automate tax and customs processes, and build the capacity of judges and staff of commercial courts.

Finally, Sierra Leone needs to stabilize its economy to limit growth volatility and vulnerability to external shocks and provide a better and more predictable environment for economic activities to flourish. While economic diversification beyond the mineral sector will reduce the country’s macroeconomic volatility in the long run, fiscal consolidation efforts should continue to ensure that fiscal targets are met consistently to enhance stability. Continued vigorous revenue mobilization efforts and structural reforms to improve tax efficiency will be more effective if complemented by stringent measures to control spending, such as efficient wage control through payroll automation and biometric registration of all civil servants; limiting the use of sole-source procurement and implementing e-procurement; and strict prioritization of capital spending to release funds for essential infrastructure and social programs. Debt management can be more effective if non-concessional borrowing and accumulation of arrears are discouraged, and the capacity of the Debt Management Unit is built up. The Bank of Sierra Leone (BSL) should continue to tighten monetary policy to reduce inflation to single digits and limit its intervention in the foreign exchange market to allow the economy to adjust to external shocks and maintain export competitiveness.

¹ The key policy recommendations are summarized in Table ES1 below

Table ES1: Summary of Recommendations

Policy Area	Recommendations	Timelines
Making agriculture more productive	1. Encourage private sector participation in delivery of agricultural inputs. 2. Improve extension services to provide skills support and training for farmers. 3. Provide direct support to build a critical mass of local entrepreneurs in commercial agriculture and distribution of food products.	Immediate and short term
	4. Reform the customary land tenure system, which depresses investment. 5. Improve access to markets by investing in feeder roads. 6. Encourage private investment in selected value chains to expand agricultural productivity. 7. To support agribusinesses, enhance financial literacy, invest more in financial infrastructure, and give financial operators incentives to expand agent networks and access points.	Medium to long term
Adding value in manufacturing	1. Reinforce regulation to attract strong private investment in fish processing and rice milling and trading. 2. Foster economic links with mining by building or rehabilitating regional infrastructure that connects mines to markets and basic services.	Short to medium term
Investment in physical capital	1. Expand access to energy and improve the quality of electricity supply by reducing the frequency and duration of power outages. 2. Invest in the fiberoptic network to enlarge the footprint of digital financial services and mobile phone penetration. 3. Scale up investment in the transportation network, especially feeder roads to link farmers to market.	Medium to long term
Investment in human capital and skills	1. Improve the quality of basic and senior-secondary education and expand access. 2. Improve delivery of quality health services and expand health coverage. 3. Restructure technical and vocational education and training (TVET) and tertiary education to better align job skills with market demand.	Short to medium term
Macroeconomic policy for stability	1. Sustain fiscal consolidation through stringent justification of expenditures through, e.g., <ul style="list-style-type: none"> • payroll automation and biometric registration of all civil servants • limiting the use of sole-source procurement and implementing e-procurement 	Immediate to short term

	<ul style="list-style-type: none"> • strict prioritization of capital spending to allow spending on essential infrastructure and social programs. 	
	2. Discourage non-concessional borrowing and accumulation of arrears and build up the capacity of the Debt Management Unit.	Short to medium term
	3. Tighten monetary policy to reduce inflation to single digits and limit BSL intervention in the foreign exchange market 4. Reinforce banking supervision and regulation to safeguard financial stability and continue efforts to restructure the two state-owned banks.	Immediate to short term
Firm Competitiveness, the Business Environment, and Governance and Institutions		
Easy business registration	1. Put all business registration procedures online. 2. Introduce comprehensive e-commerce laws to accept the validity of electronic documents. 3. Strengthen the one-stop-shop arrangements by deepening collaboration between the tax authorities and other agencies. 4. Increase awareness through roadshows and create mobile registration centers.	Short to medium term
Easy property registration	1. Update the laws on land administration. 2. Digitize land records, maps, and property deeds. 3. Make cadastre information available online and increase cadaster geographical coverage. 4. Set fixed property transfer fees, publish fee schedules online. and lower property transfer taxes. 5. Expedite procedures to address complaints. 6. Set up an electronic database for recording all transactions (land or otherwise) and financial encumbrances.	Medium to long term
Improved access to credit	1. Maintain a unified credit registry and expand coverage to 5 percent of the population. 2. Allow online lender access to borrowers' credit information. 3. Amend the Credit Reference Act of 2011 to allow creation of private credit bureaus. 4. Allow collection and distribution of additional credit information data from retailers and government. 5. Reduce government borrowing to limit crowding-out of private credit. 6. Curb high inflation to push down interest rates and reduce the cost of borrowing.	Short to medium term
Enhanced investor protection	1. Require detailed disclosure of beneficial owners and related parties.	Short to medium term

	<ol style="list-style-type: none"> 2. Allow access to corporate documents before and during trials. 3. Avoid unilateral and arbitrary sanctions by requiring use of law courts. 4. Put in place sound grievance redress and mediation mechanisms. 5. Require external reviews of related-party transactions. 6. Define clear duties for boards of directors. 	
Strengthened contract enforcement	<ol style="list-style-type: none"> 1. Make publicly available all judgments in commercial courts of first instance. 2. Shorten the time limits for trials to 60 days. 3. Allow for electronic filing of complaints. 	Short term
Easy insolvency resolution	<ol style="list-style-type: none"> 1. Strengthen the laws covering out-of-court settlements. 2. Require insolvency administrators to have professional or academic qualifications. 3. Specify time limits for insolvency procedures. 	Short term
Enhanced use of technology by firms and easier access to electricity and water connection	<ol style="list-style-type: none"> 1. Invest in digital broadband connectivity and deepen penetration of the fiber network 2. Create fiscal space for increased investment in energy and water. 3. Improve the governance and financial sustainability of power and water utilities. 4. Map all steps to power and water connection and streamline the approval processes. 5. Publish all fees associated with connection processes. 6. Ensure the safety of internal wiring by regulating the electrical engineering profession. 	Medium to long term
Streamlined tax payments	<ol style="list-style-type: none"> 1. Allow for electronic filing and payment of taxes. 2. Educate taxpayers on self-assessments and improve compliance. 3. Simplify tax reporting forms. 4. Implement electronic cash registers to generate sales and purchase reports. 	Short to medium term
Simplified processes for obtaining permits and licenses	<ol style="list-style-type: none"> 1. Put in place comprehensive construction rules and make laws publicly available at no cost. 2. Set up a one-stop-shop for all permits and licenses to streamline the process and improve coordination among governmental agencies 3. Update urban master plans and zoning regulations. 4. Lower fees for small projects with no risk to health and safety. 5. Set up a professional accreditation system for verify construction plans and supervising works 	Medium to long-term

Strengthened governance and institutions	<ol style="list-style-type: none"> 1. Increase transparency in the public sector and intensify anti-corruption efforts. 2. Remove distortions in land markets by updating the applicable laws. 3. Streamline licensing and permit regimes and lower fees for smaller projects, especially at the Environmental Protection Agency. 4. Develop and promote platforms for government dialogue with the private sector. 5. Develop special economic zones. 6. Automate tax and customs administration. 7. Strengthen the commercial court system by regularly training judges and shorten time limits for trials. 	
Enhanced cross-border trade	<ol style="list-style-type: none"> 1. Map all fee schedules and publish a streamlined schedule to reduce the administrative cost of importing and exporting. 2. Roll out the automated system of customs data to all ports and border crossings to encourage electronic submission and filing. 3. Improve inter-agency coordination on border management and customs clearance. 4. Implement a single-window customs system. 5. Enhance risk-based inspection. 	Short, medium, and long term

1. Context, Challenges, and Rationale for Diversification

1.1. Context and Challenges

Sierra Leone benefits from both advantageous geography and abundant natural resources. Located on the southwest coast of West Africa and bordered by Liberia to the southeast and Guinea to the northeast, the country is one of the largest producers of such minerals as iron ore, diamonds, titanium, bauxite, and gold. It also has one of the world's largest deposits of rutile and the third-largest natural harbor in the world. The Freetown peninsula was a British Crown Colony from 1808 to 1961; the rest of the country was a British protectorate, established in 1896, but with relatively little British presence.² The country's history since has been marked by periods of political turbulence, especially the 1991–2002 civil war.

With a population estimated at 7.7 million in 2018, Sierra Leone, a Muslim-majority country, has 16 major ethnic groups. The population is young and very dynamic: For the last decade, annual population growth has averaged 2.3 percent. In 2018, at 76 percent the age-dependency ratio—youth as a percentage of the working-age population—was above the 72 percent average for fragile and conflict-affected countries. In 2017, the working-age population grew at 2.8 percent and total population grew by just 2.2 percent, creating a pressing need for more formal and better-paying new jobs.

Despite a decade of 5 percent average annual economic growth, Sierra Leone's economy has recently been one of the most volatile in the world. From 2008 to 2017, the standard deviation of the growth rate of its real GDP was 10.6 percent—meaning that in that period, on average the growth rate of Sierra Leone's economy deviated by 10.6 percent from its 5 percent mean. The high volatility of GDP growth is mainly explained by the fact that the economy is driven by agriculture and mineral production, two sectors where prices are externally determined and thus highly unpredictable. Furthermore, serious internal and external imbalances exacerbate macroeconomic instability: In 2018, inflation averaged 17 percent and exchange rate depreciation 12 percent. The budget deficit of the general government was 5.7 percent of GDP and the current account deficit was 14 percent.

With population growth at 2.2 percent, in 2017 real income per capita grew by only 1.6 percent. Indeed, Sierra Leone's real income per capita, an estimated US\$469.80 in 2018, is still far below its pre-Ebola level of US\$562.80. Access to health services, and access to and the quality of education, are still low. In 2018, Sierra Leone's rating on the Human Capital Index (HCI) was 0.4, among the lowest in the world; and its poverty rate was among the highest: In 2018, more than half the population lived on less than \$1.90 per day. And with its Gini index at 34, income inequality is quite high.

Sierra Leone's economy has seen very little structural change. The country suffers from a crucial lack of access to basic infrastructure, especially energy. Rural access to infrastructure is among

² Before its independence in 1961, Sierra Leone was ruled by Britain.

the worst in Africa. Sierra Leone also has only 1.7 agricultural tractors per 100 square kilometers of arable land; the average for Sub-Saharan Africa (SSA) is 27.5. Only 8 percent of the country's roads are paved; the SSA average is more than 12 percent. Access to fresh water, energy, and agricultural inputs is still low: Sierra Leone withdraws only 0.1 percent of its internal resources of fresh water annually. While the yearly quantity of rice seed is 740,215 metric tons in Africa, it is only 60,392 metric tons in Sierra Leone. Only 23.4 percent of the population have access to electricity, and in rural areas the rate is just 5.4 percent. Access to improved sanitation facilities is 23 percent in urban areas but only 6 percent in rural areas. In general, too, rural markets are not integrated because geographical connectivity is very low.

The country is also not well connected to the rest of the world. Only 0.3 percent of Sierra Leoneans use the Internet, compared to 12.9 percent for SSA. Tariff barriers for all products, as a share of lines bound, is 100 percent in Sierra Leone but only 51.9 percent in other African countries. In 2018 the World Bank's Logistics Performance Index (LPI), which compares countries on trade logistics, ranked Sierra Leone 155th among 160 countries, because it is one of the countries least open to international trade. Clearly, trade facilitation and regional integration offer the country important opportunities to raise its growth potential in the medium and long run. This is particularly true for the common market project of ECOWAS, the Economic Community of West African States, which brings together 15 countries. This market covers 5,114,162 km² (1,974,589 mi²) and in 2015 had an estimated population of over 349 million. Another opportunity for Sierra Leone to get access to international markets is the African Continental Free Trade Agreement (AfCFTA). AfCFTA is a trade agreement signed in Kigali, Rwanda, on 21 March 2018 between 27 African Union member states. As of July 2019, 54 states have signed the agreement. Sierra Leone ratified this agreement on 29 April 2019

Sierra Leone's trade-to-GDP ratio is 74.1 percent; the ratio in neighboring Liberia is 123 percent. Moreover, despite recent improvements, the quality of Sierra Leone's business climate still trails other African countries. For 2020, the World Bank's Doing Business project ranked the country 163rd of 190 countries, giving it a score of 47.5 on ease of doing business. Its lowest rankings were in getting electricity (181st); dealing with construction permits (181st) and registering property (169th).

Most of the country's labor force works in low-productivity sectors like agriculture. In 2018, agriculture alone accounted for more than 50 percent of total production and employed 59 percent of all workers. However, in 2017, value-added (VA) per agricultural worker was only US\$1,219, in real terms, compared to US\$2,253 per worker in industry and US\$1,499 in services. There are two main ways Sierra Leone can achieve sustained growth of income per capita, thus reducing poverty and boosting shared prosperity. The first, as suggested in the 2018 Systematic Country Diagnostic (SCD), is "strengthening the productivity of the agricultural base," which the SCD considered one of the four paths to boosting economic growth and reducing poverty (World Bank 2018). In response to the SCD, the government has recently put in place several structural reforms to increase agricultural productivity with support from World Bank Development Policy Financing, among them the Seed Certification Agency Act, National Fertilizer Act, National Land Policy Implementation Framework, and Fisheries Act. The intent is to give farmers more access

to seed and fertilizers at lower prices by promoting private sector participation in the markets. Since agriculture employs most of Sierra Leone's labor force, pumping up its labor productivity would result in a sustained economic transformation and expand aggregate output.

But because agricultural jobs are seasonal and informal, the second, longer-term option would be to give workers incentives to move from low-productivity to high-productivity sectors. That is why for Sierra Leone economic diversification beyond agriculture and minerals will be crucial to sustained economic growth.³ Many countries in SSA have successfully diversified their sources of economic growth. Among the success stories, mainly characterized by movement of labor from agriculture to industry and services, are Botswana, Ghana, and to a lesser extent Côte d'Ivoire, Nigeria, and Zambia.

This study focuses on the second diversification option, giving special attention to manufacturing productivity. It analyzes the main constraints to productivity growth in Sierra Leone both within and between sectors and proposes pathways to diversification. The report begins by describing the structure of Sierra Leone's economy, its historical growth by sector, and the major constraints on firm productivity in the still nascent manufacturing sector. The second section compares the country's paths to diversification, drawing lessons from countries where reforms have been successful.

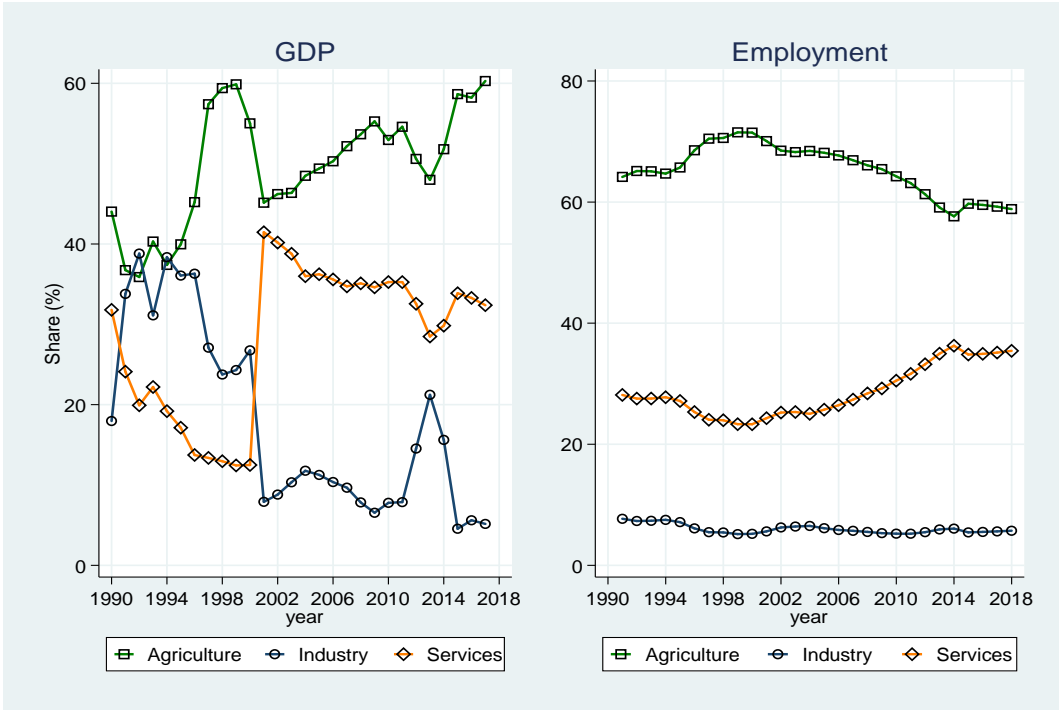
1.2. Growth by Sector: A Historical Perspective

This section draws on value-added data for agriculture, industry, and services.⁴ In theory, growth depends both on accumulation of physical and human capital and on introduction of new products and processes—innovation. Aggregate economic growth is the result of productivity changes both within and between sectors. The challenge of diversification in developing countries is how to ensure that capital and labor flow from such traditional sectors as minerals and agriculture to modern industries that are more productive: What has been Sierra Leone's experience in economic diversification? and how can targeted structural change contribute to its aggregate growth?

³ Although exports are an important aspect of economic diversification, we concentrate on transforming output in domestic sectors, partly due to inadequate data.

⁴ The choice of sectors was dictated by data availability.

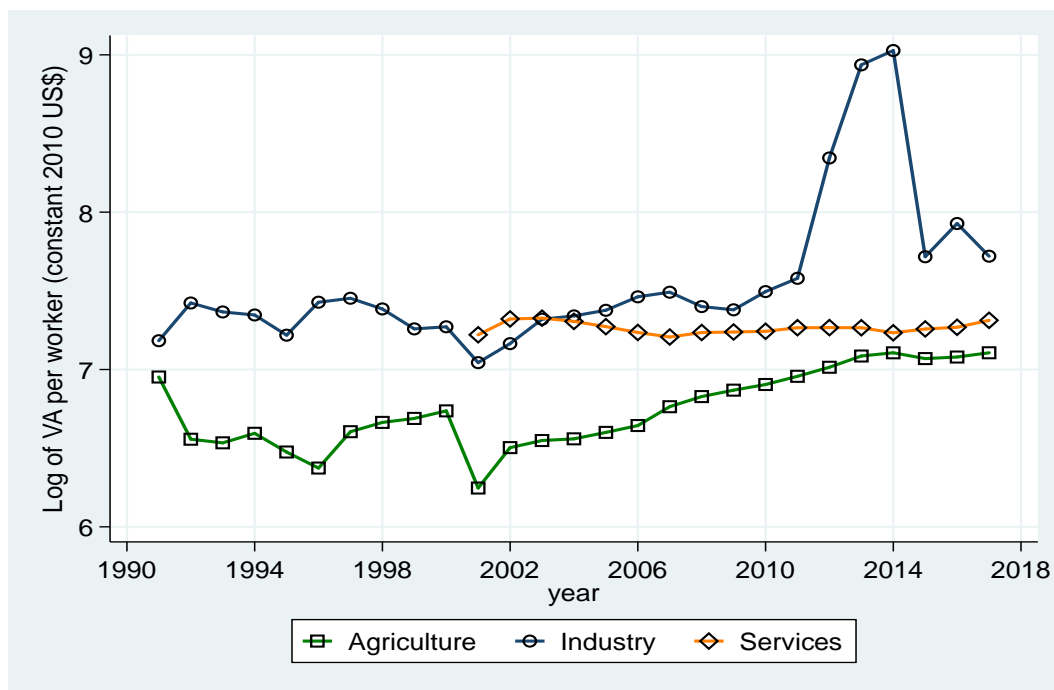
Figure 1: Sectoral Composition of GDP and Employment, 1990–2018



Source: WB Enterprise Surveys

The distribution of VA and employment across sectors in Sierra Leone is heavily skewed to traditional sectors. Figure 1 shows the decomposition of GDP and employment in agriculture, industry, and services from 1990 to 2018. While shares of employment were relatively stable throughout the period, shares of GDP were very volatile. In 2017, agriculture accounted for 60.3 percent of GDP, services for 32.4 percent, and industry for 5.1 percent. In 2018, agriculture employed 58.8 percent of the labor force, services 35.2 percent, and industry 5.7 percent. However, agricultural labor has historically been the least productive (Figure 2). This kind of resource misallocation, with most of the labor force in the least productive sector, means the economy is operating below its potential.

Figure 2: Labor Productivity by Sector, 1990–2018



Source: WB Enterprise Surveys

Following the McMillan and Rodrik methodology (2011), Sierra Leone’s growth can be decomposed into a *within-sector* component that captures how much of aggregate GDP growth can be attributed to growth within sectors and a *structural change* component, characterizing the movement of resources between sectors. Expanding the latter is related to economic diversification. The decomposition is given by

$$\Delta VA_t = \sum_{i=1}^n \sigma_{i,t-1} \Delta VA_{i,t} + \sum_{i=1}^n VA_{i,t} \Delta \sigma_{i,t}$$

where VA_t refers to period t aggregate value-added, and $VA_{i,t}$ to period t value-added in sector i , all expressed in constant 2010 US\$; $\sigma_{i,t}$ is the share of the labor force employed in sector i at time t . Table A3 in the appendix presents the results of this decomposition for 2002–17; much of Sierra Leone’s aggregate growth in output has been driven by within-sector growth, with only a small role for structural transformation.

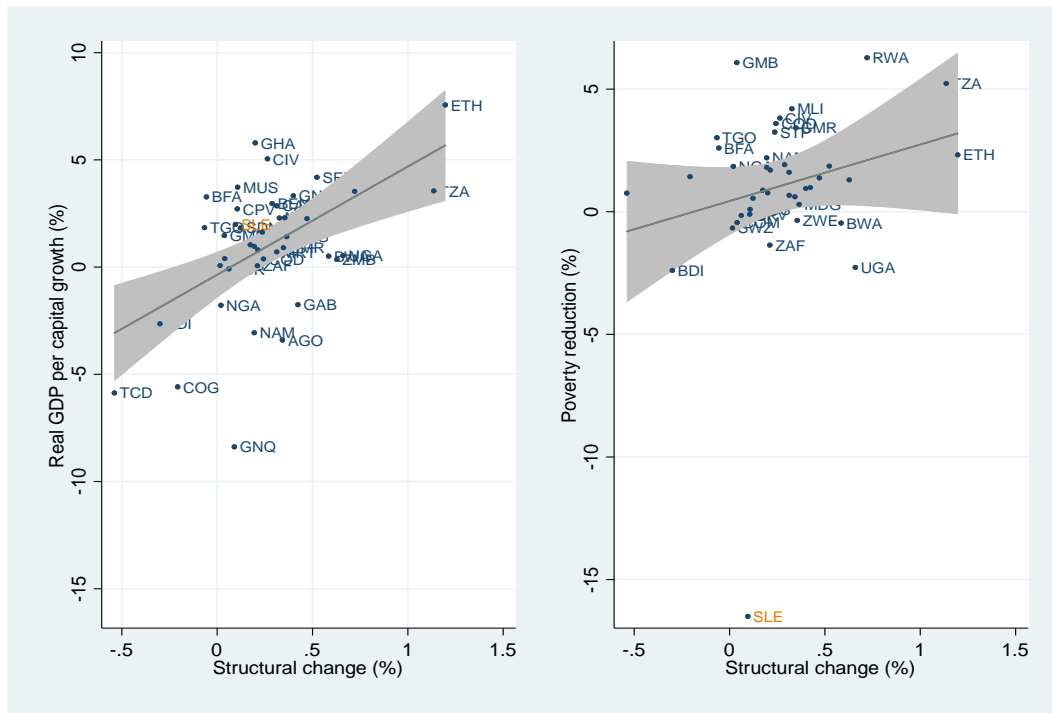
Given the allocation of resources by sector, the government has two options for enhancing economic growth and diversification:

1. It can heighten the within-sector growth of the component that employs the highest share of the labor force—agriculture—and in its latest SCD (World Bank 2018), the first

path is strengthening agricultural productivity.⁵ This approach is efficient and relatively easy to implement in the short term but might be limited in the long run by the limits of within-sector productivity growth.

2. The government can reallocate capital and labor resources from low- to high-productivity sectors to increase the between-sector component. In Sierra Leone, this would mean more investment and accumulation of human and physical capital in industry, where labor productivity has been higher. As the cross-country perspective shows (Figure 3), economic diversification accelerates both growth in GDP per capita and poverty reduction.

Figure 3: Structural Change, GDP per Capita Growth, and Poverty Reduction Compared



Source: WB Enterprise Surveys

Box 1: Political and Governance Dimensions and the Environment of the Private Sector

Political economy patterns have been shaped by Sierra Leone’s colonial history, resulting in a spatial and political divide between Freetown and the Western Area (the colony before independence) and the rest of the country (the previous protectorate and now the North, North West, South, and East Provinces). The colony was ruled by a locally elected council and a governor representing the monarch, with formal government institutions and a commercialized economy; the protectorate was subject to indirect rule, with a district commissioner responsible for the district administration in close collaboration with traditional authorities. The colonial structure was largely

⁵ The four pathways recommended by the World Bank (2018) are (a) strengthening agricultural productivity; (b) diversifying the economy and creating poverty-alleviating jobs; (c) strengthening the management of mineral resources; and (d) increasing human capital to access new opportunities.

extractive; the system of indirect rule manipulated customary governance structures, fostering both north-south and urban-rural divisions.

Post-independence governments maintained the system of indirect rule and made little effort to extend formal state control into the countryside. Both the All People's Congress (APC) and the Sierra Leone People's Party (SLPP) depended on chiefs to govern the countryside and to secure votes. This approach has perpetuated the political divide between Freetown and the rest of the country. Preservation of the traditional authority of chiefs was a form of elite bargain that helped extend the reach and authority of the state to the interior through patrimonial relations. It also enabled chiefs to accumulate considerable power as political brokers, which suppressed mass political mobilization. Chiefs used their power to grant their supporters access to land. In totality, as the SCD (World Bank 2018) put it, "independent Sierra Leone inherited an overly centralized, bureaucratically weak state and mass rural poverty." The patrimonial system that emerged governs through networks of elites, led by the chiefs, and clientelist strategies have hindered investment in a capable bureaucracy and long-term public goods. The behavior of the elites has been instrumental in the country's economic underperformance and widespread poverty.

After acute economic decline during the civil war (1991–2002), the postwar period was accompanied by economic recovery and boom until the onslaught of the Ebola virus disease (EVD) in 2014 and 2015. At first agricultural, mining, manufacturing, construction, and services recovered robustly from war time levels, but since the EVD epidemics recovery has been lethargic. As yet, then, the economic changes have not been significant enough to support extensive job creation, inclusive growth, or substantial poverty reduction. Postwar economic recovery was attributable mainly to the extractives and agriculture. The postwar decentralization program held promise to correct the prewar power imbalance and regional inequalities, but so far it has failed to deliver. A large part of the problem is that it was not fully implemented: the central administration retained planning and administrative functions, the flow of intergovernmental transfers is unreliable, paramount chiefs were appointed chairs, and members of Parliament appointed members of ward development committees.

In addition to the absence of a dynamic private sector, fundamental weaknesses and frictions in the economy have suppressed productivity growth, limited job creation, and barely moved poverty. Private sector transactions are characterized by informality and connections with successive governments that dished out lucrative contracts, sometimes financed by foreign loans and grants, to political allies and cronies. Patronage politics and corruption combined to restrict major goods and services to a few, exacerbating inequality and stoking inter-group resentment. The fact that the majority of government contracts go to only a few private businesses raises concerns about unfair competition and preferential treatment, underpinned by corruption. With 40 percent of public procurements not subject to open competitive bidding, the procurement system neither supports the private sector nor promotes competition. Both the private sector and the wider public consider procurement—by far the largest nonpayroll government expenditure—to be a major source of fraud and corrupt practices.

Domestic investment in private enterprises is deterred in numerous ways. Among them are the lack of electricity, water, and other basic infrastructure; logistic hurdles in importing and exporting; barriers in setting up and sustaining a business; and the instability of the macroeconomic environment, especially unpredictable access to foreign exchange. Most private traders, transport operators, and light manufacturers, among others, prefer to operate informally. Some large private enterprises find it difficult to honor official regulations because they see the cost of doing business as too high. There is little room for smaller domestic operators to thrive, leaving only foreign operators resilient to high risk to invest in, e.g., mining, agriculture, and tourism. Although there has been some foreign direct investment in these sectors, investors still consider Sierra Leone very risky because regulation of business is neither predictable nor stable, and after political transitions there is a history of the new government failing to comply with agreements made by the previous administration.

Development of a vibrant private sector is unlikely given the persistent macroeconomic under-performance because of volatile aggregated demand, large fiscal deficits, high inflation, and exchange rate depreciation. Because the contribution of the mining sector to government revenues is so uncertain, aggregate demand has been traditionally volatile, making it very difficult for firms to plan their investments. Revenue shortfalls have

generated both more government borrowing—which pushes up interest rates and crowds out the private sector—and huge arrears owed to the private sector. Recent fiscal consolidation efforts have also made the burden on the small number of taxpayers more onerous. Monetary policy has done little to curb inflation because the financial market is relatively shallow, with credit to the private sector only about 5 percent of GDP and only 15 percent of the adult population having an account with a formal institution (the SSA average is 24 percent). Government interventions to stabilize the exchange rate temporarily benefit consumers residing in Freetown and other urban areas but is typically a detriment to local producers operating in tradable sectors like agriculture and manufacturing. In sum, weak governance and allocation of public resources often entrench rather than alleviate the distortions that deter private sector development, and because enterprises are unable to grow naturally and create jobs, Sierra Leone is more vulnerable to external shocks.

Source: World Bank 2018; and LSE and IGC 2018.

1.3. Within-sector Growth in Manufacturing: Drivers and Constraints⁶

1.3.1. Basic Characteristics of the Manufacturing Sector

Table 1 presents some basic characteristics of manufacturing in Sierra Leone for the median firm, by industry. The median is used to avoid the well-known problem of outliers, the situation where extreme numbers on both sides of the distribution produce a misleading simple average. The last column of the table reports averages for the median manufacturing firm in general.

Table 1: Basic Characteristics, Private Sector Manufacturing in Sierra Leone, 2009

	Permanent, Full-time Workers	Wage per Worker (US\$)	Raw Material per Worker (US\$)	Capital Stock per Worker (US\$)	VA per Worker (US\$)	Growth of VA per Worker, 2009–17 (%)
Food	11	669.20	777.90	13.30	2219.50	-78.68
Garments	7	39.70	28.90	25.60	381.40	-92.43
Wood	9	160.50	80.20	64.20	722.20	-156.62
Publishing & printing	23.5	123.80	113.20	129.40	889.30	-258.15
Chemicals	101	97.20	159.90	683.20	1,254.70	-131.68
Plastics & rubber	52.5	2,667.80	2,047.60	25.50	4,558.20	-386.37
Nonmetallic minerals	44.5	261	637.60	115.60	1,583.30	-145.93
Basic metals	16	99.30	126.40	36.10	645.00	-30.74
Fabricated metals	9.50	109.30	101.50	80.20	733	0
Furniture	8	36.10	56.20	9.60	433.90	0
Full sample	18	176.5	119.8	50.1	779.96	-1.176

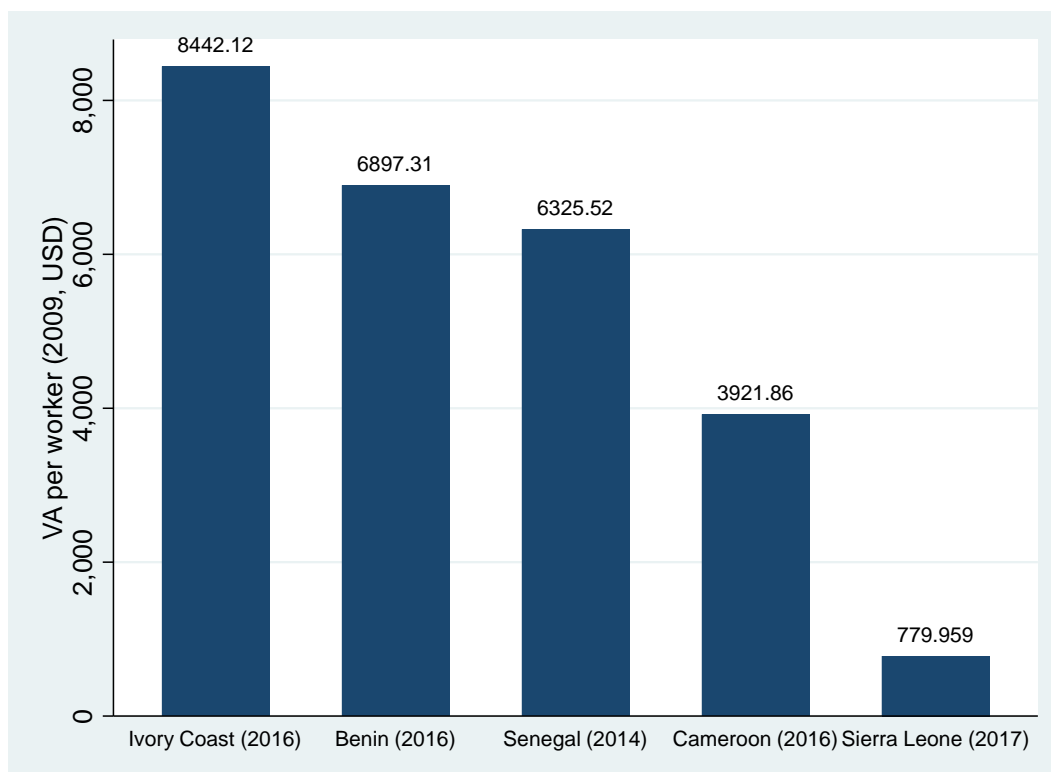
Note: Each cell refers to the number for the median firm in each industry. VA = Value-added

There is substantial variation in the number of permanent, full-time employees in manufacturing (Table 1). The chemicals industry is by far the most important creator of jobs; the median firm employs 101 permanent, full-time workers, nearly five times more than the median for the full sample. Plastics and rubber (52 workers), nonmetallic minerals (44), and publishing and printing

⁶ Limiting the within-sector productivity analysis to the manufacturing sector was dictated by the limited availability of firm data. For details of the data used in this section, see Appendix A.

(23) are next in terms of job creation. The garments, furniture, and wood industries employ the fewest manufacturing workers—the median garments manufacturer employs only 7.

Figure 4: Firm Productivity, Sierra Leone and Comparators, Most Recent Data



Source: WB Enterprise Surveys

There is also wide variation in wages in manufacturing (Table 1). Plastics and rubber has the highest per-worker wage rate—\$2,667.80 per worker annually, compared to just \$36.10 in the furniture industry. Sectors with more workers do not necessarily pay higher wages. For example, even though the median chemical firm employs the most permanent workers, the average annual wage is just average \$97.20 per worker—just 1/27th of the average wage in the median plastics and rubber firm.

After labor, raw material is the second most important component of production costs. Not surprisingly, perhaps, plastics and rubber has the highest cost of raw materials, and garments the lowest. The median firm in plastics and rubber pays on average \$2,047.60 in materials cost per worker and the median garments firm pays only \$28.90.

In manufacturing in Sierra Leone, there are also wide variations in capital intensity. As expected, the capital stock per worker in the median firm is highest in chemicals \$683.20—71 times higher than in the median furniture firm (US\$9.60).

1.3.2. Manufacturing Productivity: A Comparative Analysis

Manufacturing firm productivity and final output as measured by VA per worker also varies. In Sierra Leone, with a median VA per worker of US\$4,558.20 in 2017, plastics and rubber is the most productive industry, followed by food (\$2,219.50), nonmetallic minerals (\$1,583.30), and chemicals (\$1,254.70). Least productive is garments, with a median VA per worker of just

\$381.40. Based on comparable data from World Bank Enterprise Surveys (WBES), firm productivity in Sierra Leone is among the lowest in West Africa (Clarke 2018).

On average, only 3.1 percent of Sierra Leone manufacturing VA is exported, of which 2.4 percent is sold domestically to third-party exporters. But exporters are much more productive than domestically oriented firms; their median VA per worker is more than double that of domestically oriented firms (Figure A1).

Manufacturing firm productivity rises with firm age, but the relationship is not linear. The median firm in operation for 50 or more years has a VA per worker of \$2,272.50, compared to just \$567.20 for firms less than 20 years old (Figure A2). Formal firms also tend to be more productive than informal—in Sierra Leone, the difference is about 22 percent (Figure A3). This finding is not unique to Sierra Leone (see, e.g., Dabla-Norris et al. 2005). In a comprehensive study of seven Latin American and Caribbean countries, Perry et al. (2007) found the difference in labor productivity between informal and formal firms averaged about 29 percent. The results for Sierra Leone suggest that economic diversification could be promoted by sector-specific policies to increase labor productivity and reforms that help firms to stay active over time and participate in international markets.

Firm productivity also varies substantially by location within the country; VA per worker is higher in the capital city than in other cities. In 2019, the median firm in the Western Urban region, which is mainly Freetown, produced \$1,275.42 per worker (Figure A4)—more than twice as much as the median for all firms in Sierra Leone. At the other end of the spectrum, productivity was \$659.94 in Bombali, \$404.62 in Kenema, and \$259.99 in Bo. These facts suggest, in line with the *2018 Sierra Leone Economic Update*, that cities offer significant opportunities for raising potential growth and diversifying the economy beyond mining

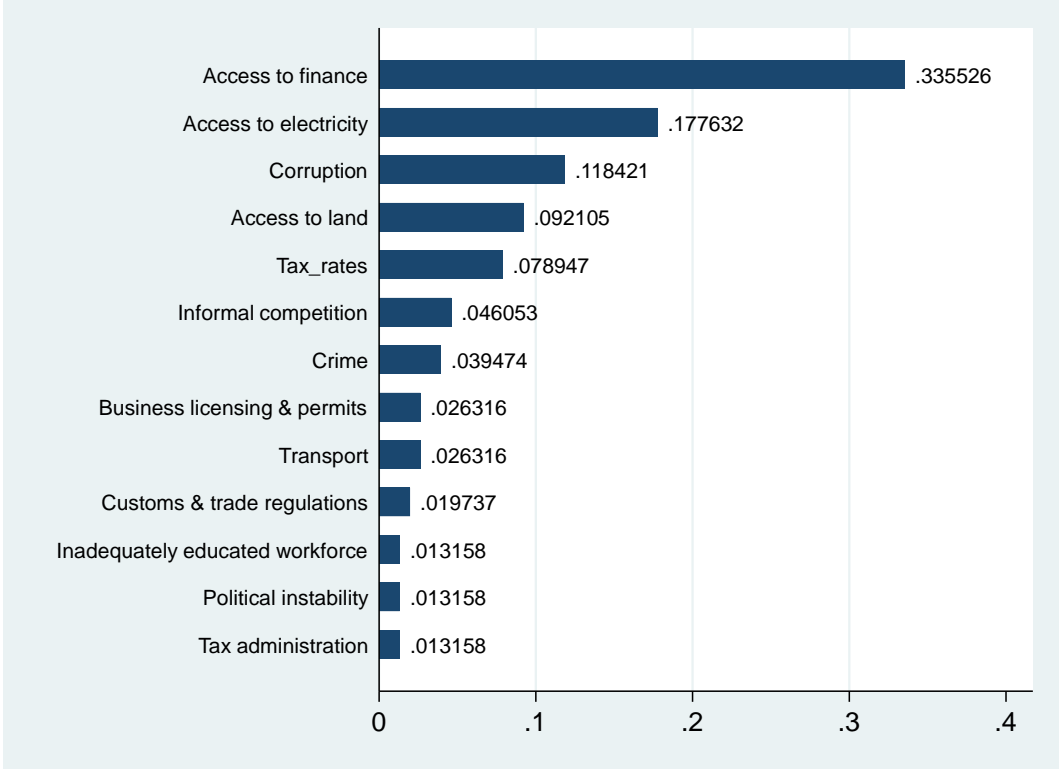
As expected, too, labor productivity in manufacturing rises with firm size (Figure A5). In 2019, for permanent full-time workers the median productivity for large firms was \$2,259.21, medium firms \$988.37, and small firms \$465.51. However, policies that give firms the incentive to increase their size are likely to be good for productivity growth and diversification.

The firms that participated in the surveys in both 2009 and 2017 give an idea of the growth of labor productivity over that period, proxied by the change in log of VA per worker (see Table 1, last column). For manufacturing in Sierra Leone as a whole, rather than growth, the median change in VA per worker was –117.6 percent—an average annual decline of 14.7 percent. What caused this collapse in labor productivity?

Although a wide range of institutional factors might have had a role in the productivity collapse, they do not change much over time; the erosion of productivity is not likely to be the result of a worsening business and institutional environment. Sierra Leone’s aggregate score on ease of doing business rose from 37.63 in 2009 to 48.4 in 2017; although still low by international standards, the improvement suggests that other factors were responsible for the productivity collapse. The most important explanatory factor is the 2014 Ebola epidemic in the middle of the period. There is evidence that the Ebola crisis led to a plunge in labor productivity between 2014 and 2015. Another productivity implication of Ebola is a drop in the accumulation of physical and

human capital.⁷ Thus, any policy action to support firms likely to be vulnerable to a productivity shock like Ebola would be important for economic progress in the Sierra Leone.

Figure 5: Major Obstacles to Firm Operations in Sierra Leone



Source: WB Enterprise Surveys

Manufacturing industries also differ enormously in productivity growth. In 2009–17 the largest decline in labor productivity was in plastics and rubber, where the average annual decline in VA per worker was 48.3 percent. The smallest average productivity decline was 30.7 percent in basic metals. There is some evidence of convergence of productivity: highly-productive sectors tend to decline faster and less-productive sectors more slowly.

Among comparators Sierra Leone has the lowest median VA per manufacturing worker, \$779.96, compared to \$8,442.12 in Côte d’Ivoire, \$6,897.31 in Benin, \$6,325.52 in Senegal, and \$3,921.86 in Cameroon (Figure 4). Such differences raise questions about obstacles in Sierra Leone to higher firm productivity.

1.3.3. Worst Obstacles to Firm Operations

One reason for the performance problems of manufacturing in Sierra Leone is the poor investment climate and the many institutional constraints on firm operations. On ease of doing business, Sierra Leone ranks 163rd of 190 countries, far below most of its African peers. Aspects of the quality of the business environment identified as problematic by the World Bank Economic

⁷ A deeper understanding of the productivity effects of Ebola requires a firm-level analysis that also covers non-Ebola countries.

Survey are access to finance, access to land, business licensing and permits, corruption, courts, crime, theft and disorder, customs and trade regulations, access to electricity, inadequately educated workforce, labor regulations, political instability, competition from informal firms, tax administration, tax rates, and transport.

In 2018 firms in Sierra Leone reported access to finance (33.6 percent), access to electricity (17.8 percent), and corruption (11.8 percent) as their biggest obstacles (Figure 5). Clearly, reforms to expand access to financial services and electricity and to control corruption could make a major contribution to boosting manufacturing productivity and production. Exporters are less likely to face these constraints.

Table A2 shows how these obstacles affect firm productivity. As expected, all the negative aspects of the business environment depress labor productivity, but their statistical significance varies. Political instability, access to land, access to finance, customs and trade regulations, corruption, and competition from the informal sector all have statistically significant negative effects on VA per worker.

The current business climate is also not favorable to capital accumulation. Problems related to access to finance, corruption, tax rates, informal competition, business licensing, and an inadequately educated workforce have statistically significant negative impacts on accumulation of physical capital (Table A2, first column). Access to land, transport, customs and trade regulations, and an inadequately educated workforce also reduce manufacturing employment.

Comparators Côte d'Ivoire, Cameroon, Senegal, and Benin have already put in place institutional reforms to improve their investment climate. For instance, in the 2019 Doing Business report, Sierra Leone was ranked 163rd, but Côte d'Ivoire was ranked 122nd because, e.g., it is easier there to start a business, deal with construction permits, access electricity, register a property, access credit, trade across borders, and resolve insolvency. Section 2 is devoted to identifying policy reforms that could raise productivity in Sierra Leone.

2. Firm Productivity and Options for Diversification

2.1. Determinants of Firm Productivity

Economists have extensively researched the rate at which firms can efficiently transform inputs into outputs, generally finding significant and persistent differences in productivity by firm and country. Differences have been related to such factors as technology and innovation (R&D); firm structure, especially relative age and size; managerial practices; learning-by-doing; competition; and regulation quality. These inter-firm differences can be categorized as either within-firm characteristics, such as firm structure, R&D, managerial practices, and learning-by-doing or elements external to the firm, such as competition and regulation.

This section discusses how both explain productivity differences between Sierra Leone and its more productive comparators, Benin, Côte d'Ivoire, Cameroon, and Senegal. To better understand what accounts for such differences, we compare the indicators for firm structure,

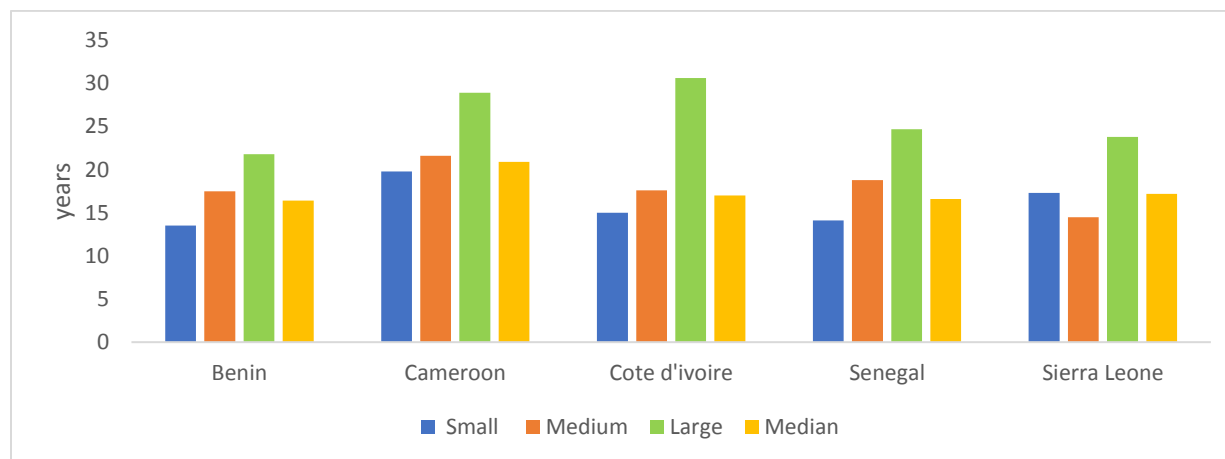
use of technology, learning-by-doing (exporter status), and managerial practices. We also examine regulation and infrastructure to provide a basis for recommending economic policies to boost firm performance and economic growth.

2.1.1. Within-firm Determinants of Productivity

Firm Structure (Age, Size and Formality)

Age, size, and formality are important determinants of productivity (Syverson 2004a). Figure 6 shows the number of years of operation for small, medium, and large firms in Benin, Côte d’Ivoire, Cameroon, Senegal, and Sierra Leone. In all but Sierra Leone, the median large firm is older than the median medium-size firm, which in turn is older than the median small firm; and large and medium firms in Côte d’Ivoire, Cameroon, and Senegal are older than those in Sierra Leone. Benin has the youngest proportion of large firms. In Sierra Leone, large firms are older than both medium-size and small firms, but small firms are older than medium-size firms. Also, small firms in Sierra Leone are older than those in comparator countries. It appears that the country’s small firms face difficulties in expanding their operations to become medium and large. This may explain why medium firms are younger than small firms in Sierra Leone and why firm productivity is generally lower in Sierra Leone than in comparators.

Figure 6: Years of Establishment by Size



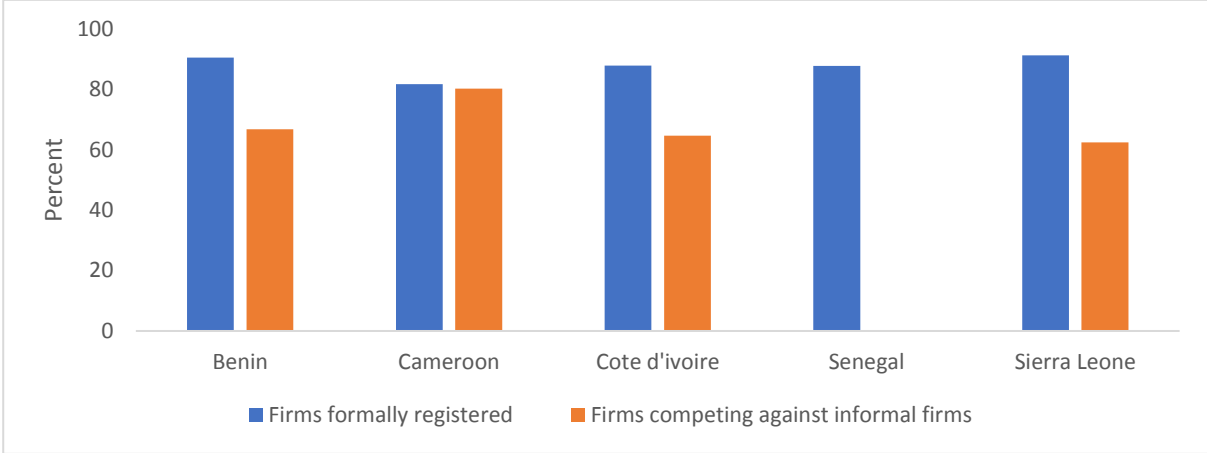
Source: WB Enterprise Surveys

About 92 percent of manufacturing firms in Sierra Leone have fewer than 20 workers and only 2 percent are large. Figure A5 shows average productivity increases from small to medium and then to large firms in Sierra Leone and is thus related to firm size. This is consistent with empirical findings (Cusolito and Cirera 2010) that large firms are generally more productive than small in most countries, including Sierra Leone’s comparators.

Despite differences in comparator productivity, it appears that those countries all face similar challenges related to business formality or informality. Figure 7 shows that 81–91 of firms surveyed formally register before commencing operations, which is true for Benin (90.6 percent) and Sierra Leone (91.3 percent). Similarly, the 62–66 percent of firms that must compete with

informal firms is about the same in all the comparators. Stiff competition from informal firms may discourage formal firms from making the investments necessary to enhance productivity.

Figure 7: Indicators of Formality



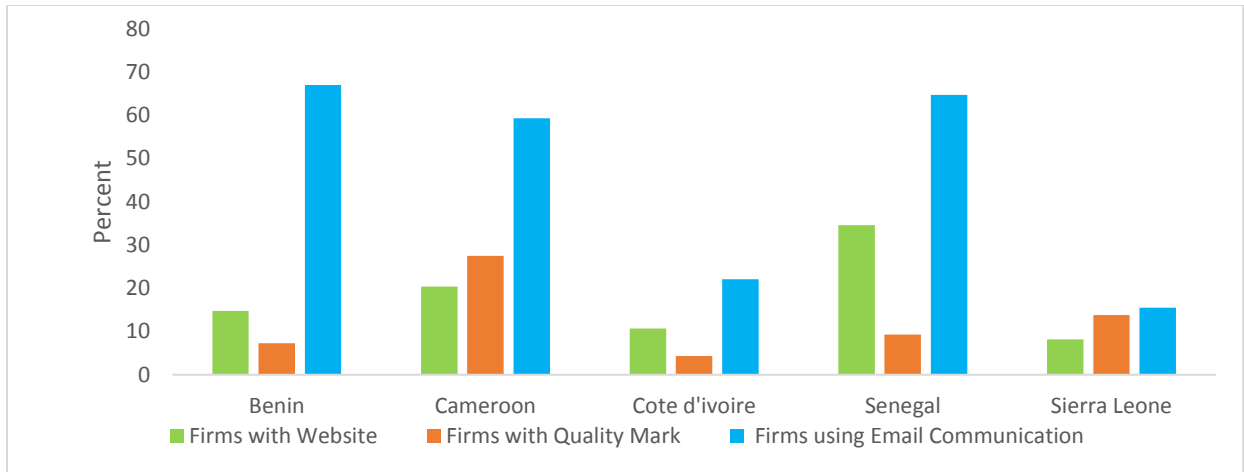
Source: WB Enterprise Surveys

An examination of productivity differences between formal and informal firms in Sierra Leone found that the median formal firm is more productive. This may be due to differences in labor cost and access to credit: Wages are bound to be lower for informal firms because they draw on the large pools of workers who have very few skills. And informal firms almost by definition do not have access to formal credit, which depresses their productivity. (Note, however, that access to credit is difficult even for formal firms in Sierra Leone and is a primary obstacle to better firm performance.)

Technology and Innovation

Sierra Leone also performs below comparators on such technology indicators as website, quality mark, and email communication. As Figure 8 shows, there are more firms with websites and email communication in Benin, Cameroon, Côte d'Ivoire, and Senegal than in Sierra Leone. Only 8.2 percent of Sierra Leonean firms have a website; comparators average 15.1 percent. Similarly, only 15.5 percent of Sierra Leonean firms use email; the comparator average is 48 percent. Since technology is a critical determinant of productivity, the low usage by Sierra Leone firms may partly explain why productivity is lower.

Figure 8: Innovation and Technology Indicators



Source: WB Enterprise Surveys

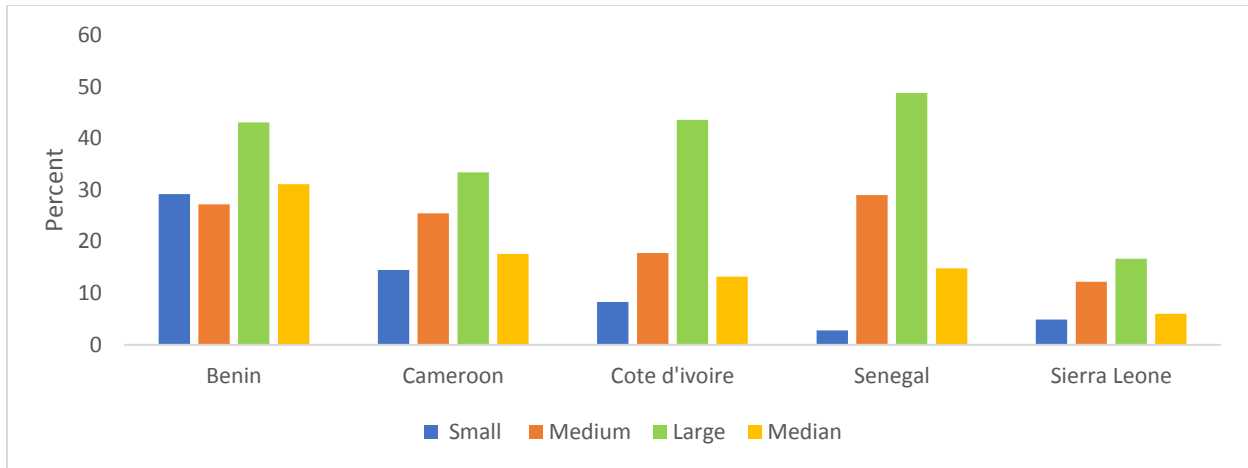
Learning-by-doing (Export Status)

In most developing countries, exporters are typically more productive than non-exporters (Chen and Tang 1987, Bernard and Jensen 1999). It is therefore believed that an industry with a higher percentage of exporting firms is likely to be more productive, because the most productive firms can afford the fixed costs of exporting and entering international markets. Access to international markets creates learning-by-doing effects that allow firms to absorb knowledge spillovers, which helps them to become more efficient and competitive.

Sierra Leone has the fewest exporting firms among comparator countries (Figure 9); only 6 percent of its firms directly or indirectly export their products, far less than in Senegal, Côte d’Ivoire, Benin, and Cameroon. Also, there are far more medium and large exporting firms in all comparator countries than in Sierra Leone. This minimal export activity suggests that firms in Sierra Leone are probably less competitive. Barriers to exporting, such as regulatory challenges, problems with infrastructure, especially for energy, and the high costs of doing business, could be deterring firms in Sierra Leone from taking advantage of export opportunities like those offered by the African Growth and Opportunity Act (AGOA), which offers preferential access to U.S. markets,⁸ or preferential access to the EU under the Economic Partnership Agreements of the Everything-but-Arms scheme.

Figure 9: Share of Exporter Firms Compared, Percent

⁸ The Trade Preferences Extension Act of 2015, P.L. 114-27, extended AGOA’s authorization for 10 years to September 2025.



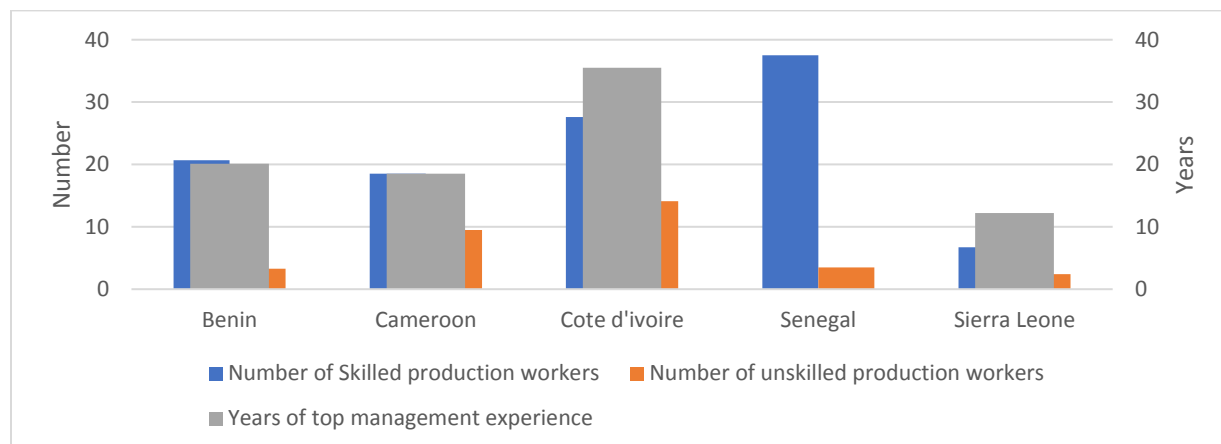
Source: WB Enterprise Surveys

Management

The quality of management and the talent of managers are believed to have a differential impact on firm productivity (see Bloom and Van Reenen 2007) because managers oversee how labor and capital are allocated, which deeply affects firm performance.

Firms in Sierra Leone have the lowest performance on three indicators of management quality: skilled production workers, unskilled production workers, and the experience of top management (Figure 10). Senegal and Côte d'Ivoire have the most skilled production workers, followed by Benin and Cameroon. Côte d'Ivoire also leads in terms of the experience of top management and the number of unskilled workers. Thus, the poor performance of Sierra Leonean firms on these management quality indicators partly explains why their productivity is less than firms in comparator countries.

Figure 10: Indicators of Management Quality



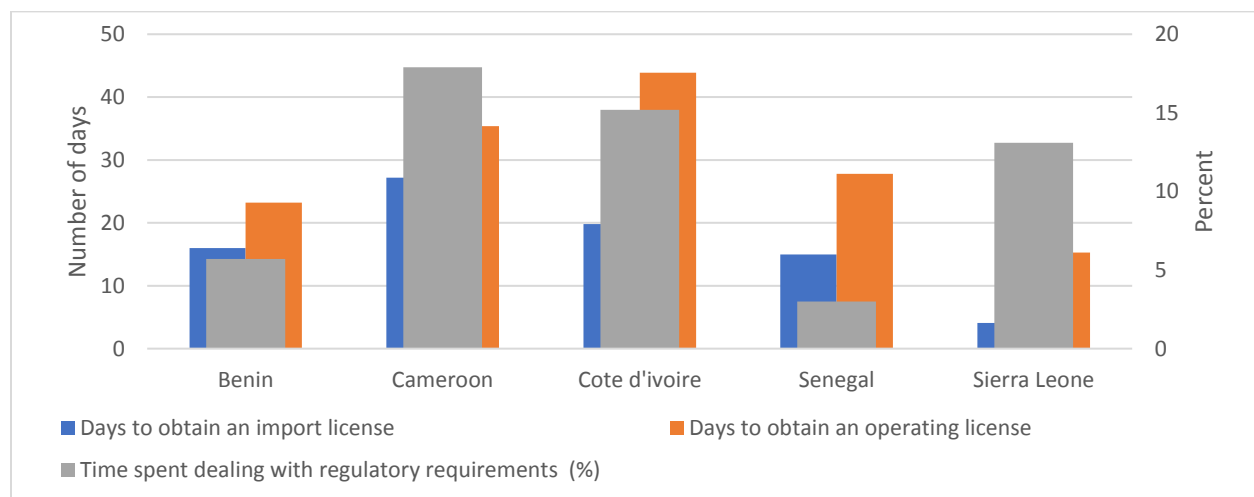
Source: WB Enterprise Surveys

2.1.2 External Determinants of Productivity

Regulation

Regulation is a vital external determinant of firm productivity. There is overwhelming evidence that poorly regulated markets create disincentives that hinder if not reduce productivity (Syverson 2004a). Figure 11 shows three indicators—days to obtain an import license, days to obtain an operating license, and senior management time spent in dealing with regulatory requirements—for the comparator countries.

Figure 11: Indicators of the Regulatory Environment Compared



Source: WB Enterprise Surveys

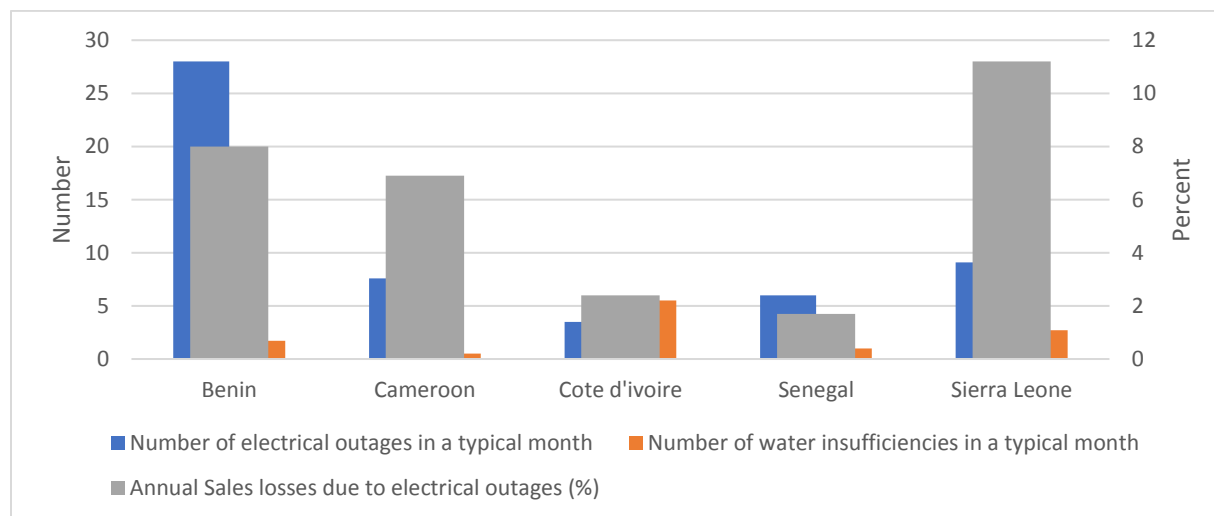
Despite its low productivity, Sierra Leone fares better on two indicators, the time it takes to obtain an import and a construction license, recording the fewest days among the comparators. However, this apparent speed in obtaining importing and operating (very different from the 182

days it takes to get construction permits according to the 2018 Ease of Doing Business, page 11) raises additional concerns about regulation in Sierra Leone in terms of whether firms influence license awards through bribery and corruption. (Figure 5 shows that corruption is the third major obstacle to firms.) It takes longest to obtain both import and construction licenses in Cameroon and Côte d'Ivoire, and senior managers in both countries spend more time dealing with regulatory requirements; managers in Senegal need the least time (3 percent of management time), followed by Benin (5.7 percent), and Sierra Leone (13.1 percent). Clearly, regulation is a challenge for firms in all the comparator countries.

Infrastructure

Firms operating in countries with reliable power and water supplies are generally more productive because they spend less time and resources on these necessities themselves. Figure 12 shows infrastructure indicators: number of electrical outages in a typical month, number of water shortages in a typical month, and annual sales losses due to electrical outages.

Figure 12: Infrastructure Indicators



Source: WB Enterprise Surveys

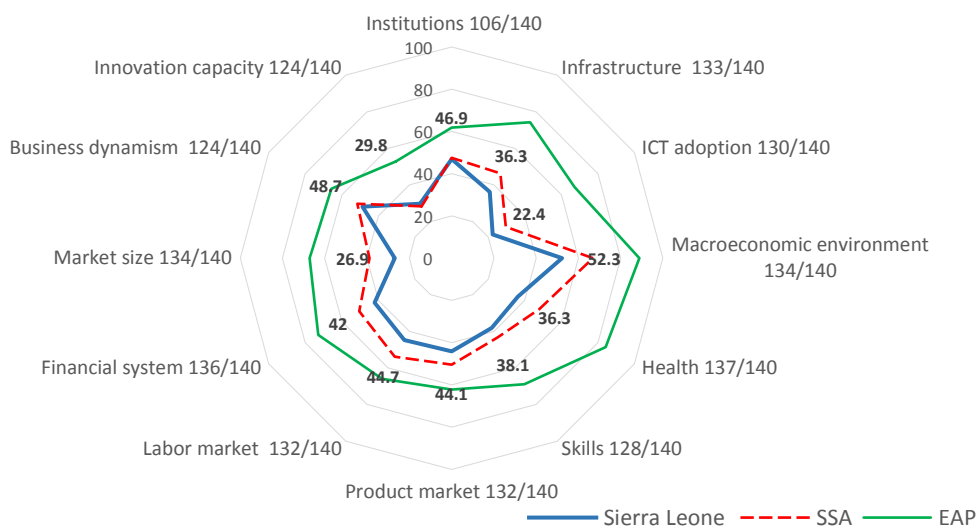
Power outages and the related losses are critical impediments to the operation of firms in Sierra Leone and Benin. The most power outages in a typical month were in Benin (28), followed by Sierra Leone (9.1), Cameroon (7.6), Senegal (6.0), and Côte d'Ivoire (3.5). In terms of annual sales lost to power outages, Sierra Leone's were the highest (11.2 percent), followed by Benin (8.0 percent) and Cameroon (6.9 percent). Côte d'Ivoire and Senegal had the lowest annual sales losses (less than 3 percent). Access to reliable water supply is also a concern for firms in Sierra Leone.

2.2 Lessons from Comparators on Global Competitiveness

While productivity is the main determinant of long-term growth and income, ease of doing business and reforms to enhance economic competitiveness are critical for both productivity and diversifying the economy. Sierra Leone ranks low on both the 2018 Global Competitiveness Index⁹ and on the 12 main drivers of competitiveness (Figure 13). Compared to SSA and the East Asia and Pacific (EAP) region, Sierra Leone, like neighboring Liberia, stands out for particularly low rankings on most of the 12 drivers.

On all indicators, Sierra Leone ranks 124th to 138th of 140 countries and its frontier score¹⁰ is below 50 for most of the competitiveness factors measured. For instance, on *Product markets*, defined as the capacity of a country to provide an even playing field for all firms, Sierra Leone is ranked 132nd with a frontier score of 44.1; on *Business dynamism*, the ability of firms to adopt new ways to operate and the ease of firm entry into and exit from markets, it is 124th and scores 48.7; and on *Innovation capacity*, it is 124th and scores 29.8. On *ICT adoption* it scores 22.4 and on *Infrastructure* 36.3—both are critical to competitiveness. Sierra Leone also has striking deficiencies in such sub-indicators as fixed broadband subscriptions, airport connectivity, and electrification, in all of which it is either last or next-to-last.

Figure 13: Global Competitiveness Rankings and Scores (0–100),



Source: World Economic Forum 2018.

⁹ A country's global competitiveness is based on four pillars: an enabling environment, markets that work properly, human capital, and innovation. Figure 13 shows Individual rankings near each of the 12 pillars while indices scores are depicted in the radar chart.

[[Assuming that the radar chart is the numbers in the middle, can you just say "in the center?]]

¹⁰ Frontier scores on the WEF Competitiveness Report range from 0–100 with 100 signifying the most desirable state of progress to the "competitiveness frontier,"

Box 1: Côte d'Ivoire: Growth and Productivity Reforms for Economic Diversification

With estimated average GDP growth of 9.2 percent for 2012–16, Côte d'Ivoire's economy is one of the fastest-growing in the world; it also averaged robust 8.5 percent growth in 2017 and 2018, supported by private and public investment and consumption; supported in turn by favorable demographics, private consumption represented 65 percent of internal demand. The country has an ambitious investment agenda designed to promote economic diversification through a high-value-added secondary sector. Côte d'Ivoire's National Development Plan (NDP) for 2016–20 harnesses the country's competitive advantages and promotes industrialization; the goal is to become a middle-income economy by 2020 and substantially reduce poverty. The main growth drivers identified in the NDP are agriculture and agri-business; mining, oil, gas, and electricity; transportation and commerce; and telecommunications.

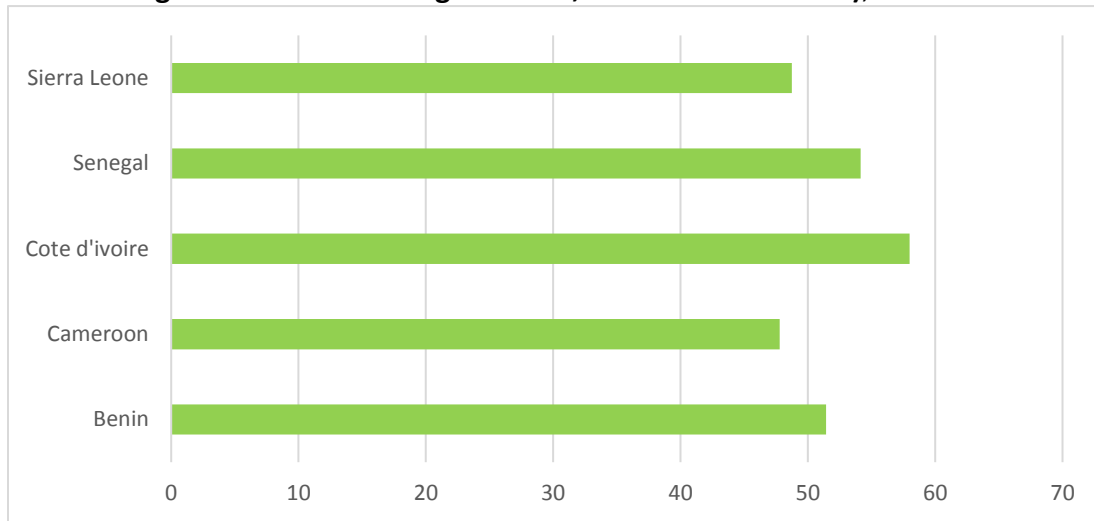
A member of the West African Economic and Monetary Union (WAEMU), Côte d'Ivoire represents 40 percent of WAEMU's GDP and benefits from a stable exchange rate and low inflation. It capitalizes on its strategic geographic position by implementing infrastructure projects designed to unlock constraints to growth, supported by private-sector-led investment. The government pursues a tight fiscal policy—the total budget deficit is less than 4 percent—directed to mobilizing enough revenue to create fiscal space for investments. Public debt is less than 43 percent of GDP, one of the lowest among regional peers. Côte d'Ivoire's export base is highly diversified, with increasing value-added contributions from agriculture and mining; the world's largest producer of cocoa, it accounts for one-third of global production. It also records a large trade surplus with a current account deficit of only about 1 percent of GDP. A new mining code is helping to drive foreign direct investment toward the country's vast oil, gas, metals, and minerals reserves. The World Bank (2015, 2016 *[[add both to refs]]*) has recognized Côte d'Ivoire as one of the top-reforming countries globally based on notable improvement in macroeconomic performance and moves to improve the business environment and enable private investment to become an engine of growth. The country is the 11th most competitive economy in Sub-Saharan Africa (World Economic Forum Global Competitiveness Survey 2018) and among the top 10 reformers on the 2019 Ease of Doing Business list. Among structural measures it has undertaken to boost private investment and productivity, it has:

- Enacted a new Investment Code to encourage the flow of foreign capital, which lowers investment caps and provides longer-term guarantees.
- Enacted a new Competition Law to prevent cartels and abuse of dominant position.
- Reformed the legal system by recognizing arbitration judgments and creating commercial courts, which must issue decisions within 90 days.
- Reduced the corporate tax rate from 35 to 25 percent.
- Reduced the costs for creating a company by 72 percent and the time it takes from 32 days to 24 hours.
- Established a single portal for investor services.
- Established an on-line portal for the payment of taxes and duties.

Source: Republic of Côte d'Ivoire 2018, IMF 2018.

Close examination of the recent Doing Business rankings of comparator countries makes it clear that countries with relatively higher firm productivity have better Doing Business rankings than Sierra Leone and a shorter distance to the frontier (Figure 14): firms in Côte d'Ivoire, Benin, and Senegal, whose distance to the frontier is between 50 and 60, are more productive than those in Cameroon and Sierra Leone, whose distance is less than 49.

Figure 14: Ease of Doing Business, Distance to Frontier), Percent



Source: World Bank Ease of Doing Business 2018.

Appendix B summarizes recent reforms by comparator countries to improve the business environment and firm performance. Benin, Cameroon, Côte d'Ivoire, and Senegal all adopted at least two doing-business reforms. Senegal and Côte d'Ivoire topped the list with four, among them improving registration of business or property, access to credit, revising the insolvency regime, tax payments, and enforcement of contracts. Côte d'Ivoire also speeded up issuance of construction permits. Benin improved business and property registration, the insolvency regime, and labor market regulations related to fixed-term contracts. Sierra Leone's only reform was making business registration easier. Firm productivity in Senegal, Côte d'Ivoire, and Benin is over five times the median for firms in Sierra Leone.

2.3 Paths to Economic Diversification

Box 2: Rwanda: Growth and Productivity Reforms for Economic Diversification

Following the devastating Rwandan genocide in 1994, the government embarked on an extensive reconstruction program based on sound economic policies, peace, and stability. Rwanda has since recorded over two decades of uninterrupted economic growth and social progress, underpinned by a robust national strategy for economic growth and employment creation, with full commitment to good governance and the principles of openness and a market economy, coupled with deep structural reforms that attracted a surge in domestic and foreign investments. The country's vision is to build a knowledge-based economy and to become a private sector-led middle-income country by 2020. Its Economic Development and Poverty Reduction Strategy (EDPRS) set out medium-term goals related to the long-term development agenda. The EDPRS has three pillars: (1) sustainable growth for jobs and exports, (2) private sector development, and (3) pro-poor rural development and social protection. All are designed to accelerate economic growth and promote human development.

Rwanda's economy grew at an average of 8 percent in the 10 years between 2005 and 2015; and between 1994 and 2017, per capita income rose from US\$150 to US\$720. In 2016 and 2017, as growth slowed to about 6 percent, it became necessary to intensify macroeconomic reforms and address growing external imbalances through fiscal consolidation and greater exchange rate flexibility. A salient feature of Rwanda's economic growth is structural transformation based on inter-sectoral movement of labor from subsistence agriculture to services. The shift within agriculture was from low-productivity subsistence farming to a greater market orientation and more use of soil-enriching and yield-enhancing cash inputs. The services sector contributed to the national growth in productivity by absorbing both labor from agriculture and most new entrants into the job market. Development of the nonagricultural sectors of the economy with the proliferation of small-scale enterprises is a clear sign of Rwanda's economic transformation.

The country adopted several policies to shape its economic transformation agenda, which continues to evolve to respond to emerging constraints on the economy. Promotion of private investment was anchored in good governance, supportive laws that promoted savings and the banking sector, and investment in infrastructure, health, and education, particularly vocational training. The government set out an ambitious program to improve the investment climate in order to accelerate progress toward achieving its development goals. The tax code was revised in 2015 and doing-business reforms were introduced. A central part of the government strategy was to diversify and increase exports. Areas for export growth were identified beyond the strategic exports of tea, coffee, horticulture, hides and skins, and minerals.

Rwanda has emerged as one of the best-performing countries in Africa and an example of success in post-conflict reconstruction. It was cited as one of the top 10 reformers on the 2019 Ease of Doing Business list and as 8th most competitive economy in Sub-Saharan Africa (World Economic Forum Global Competitiveness Survey 2018).

Source: World Bank Group 2017.

This section analyzes possible paths to economic diversification using economic fitness analysis. The section first presents product and sector analyses with potential for development-based economic fitness. Economic *fitness*,¹¹ a measure of a country's capabilities, is computed as the

¹¹ Economic fitness is based on the concept of hidden capabilities (Tacchella et al. 2012). Productive structures are ever-changing interactions of economic, political, social, technological, and other less definable indicators. Some are measurable, such as human capital, resource endowments, and governance. Others are more difficult to define

complexity-weighted diversification of a country's exports relative to 180 countries. Economic *complexity* stems from a new line of research that sees economic growth as the evolution of an ecosystem of technologies and capabilities. Analytical approaches offer new opportunities to empirically map ecosystems within countries and industries to understand their dynamics and measure their fitness. These are important because they resemble the direct approach for diversification and promise quick wins to expand the production base. This section then analyzes options for policy reforms to broaden the country's resource endowment. Broadening endowments requires institutions and time. The economic fitness analysis complements at the country level the previous work on the productivity of a single sector. It is an analysis at the level of the goods Sierra Leone trades.

2.3.1 Product and Sector Opportunities: Economic Fitness Analysis

Economic fitness predicts long-term growth in GDP per capita (GDP PC). It characterizes the diversification of an economy and its ability to produce more complex products based on rigorous quantitative analysis to support formulation of strategies for growth. The World Bank Country Opportunity Spotlight (COS) uses economic fitness to assess current capabilities and identifies industries whose capabilities reveal upgrade and diversification potential. Since country endowments shed light on what is within reach, economic fitness predicts a feasibility score for new industries—the likelihood that a country will become competitive in an industry over the medium to long term. COS results are a starting point for policymakers to shape and validate priorities, compare countries, assess the capabilities needed in specific industries, and begin identifying impediments to growth in order to, e.g., formulate policies to allow expansion of the production base.

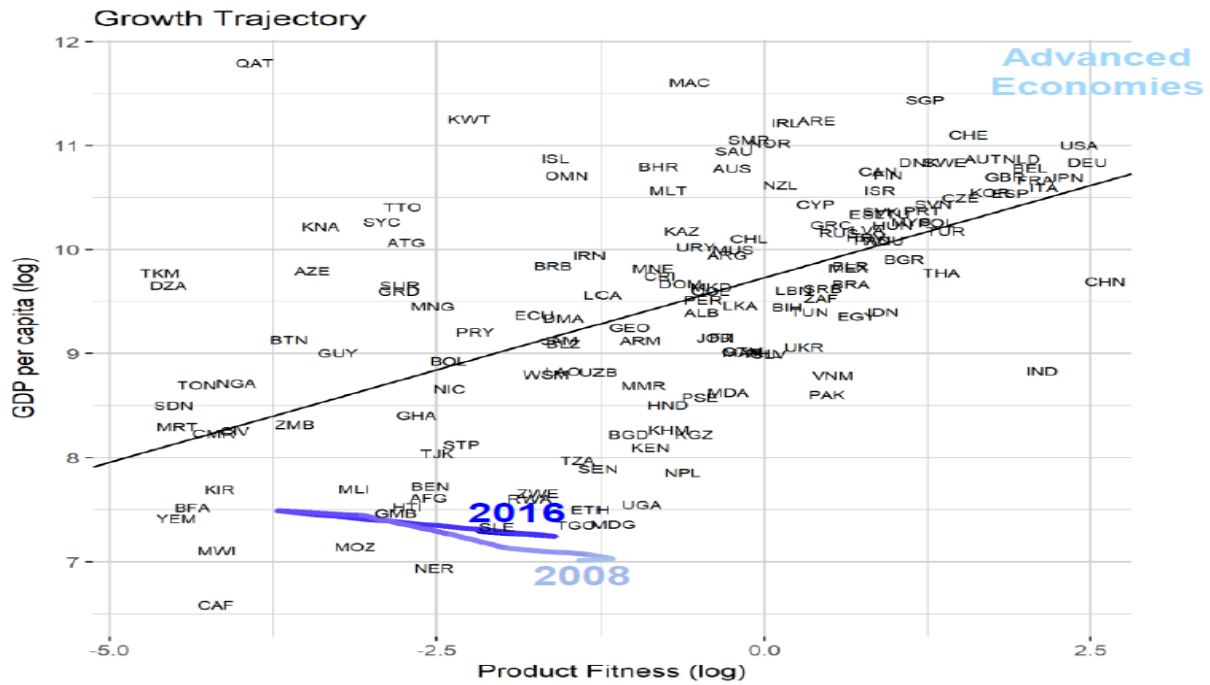
Between 2008 and 2014, though GDP per capita increased, Sierra Leone's fitness declined (Figure 15). The trend has since been reversed, and Sierra Leone is on a trajectory to return to its position in 2008. While this suggests that its capabilities are improving, it also means that per capita income is falling. Sierra Leone occupies the "poverty trap region" of the fitness–GDP PC plane. This region is characterized by erratic trajectories with unstable growth in both dimensions. Sierra Leone is already close to the boundary, and other countries have succeeded in escaping from the region via fitness development and consequent GDP PC gains.

Rwanda and Burkina Faso once occupied a position similar to Sierra Leone's in the fitness–GDP PC plane (Figure 16), though Rwanda's economic fitness has recently improved. By fits and starts, it has stabilized its path, increased GDP per capita, and pushed itself out of the poverty trap. Burkina Faso raised GDP PC, but lost fitness. Its trajectory is much more unstable, and the country remains in the poverty trap region. In recent years, most African economies have increased fitness by better leveraging their capabilities and engaging competitively in more diversified

even conceptually. Instead of trying to estimate each factor that influences competitiveness and productivity, economic fitness uses economic output as a proxy for a country's capability set. If a country can compete globally, it has the skills and inputs to make a given product. By understanding the combination of goods and services a country can produce competitively, it is possible to learn how developed its capability stock is without having to measure or define explicitly all the abilities present within an economy. The analysis here is based on 2008–16 trade data.

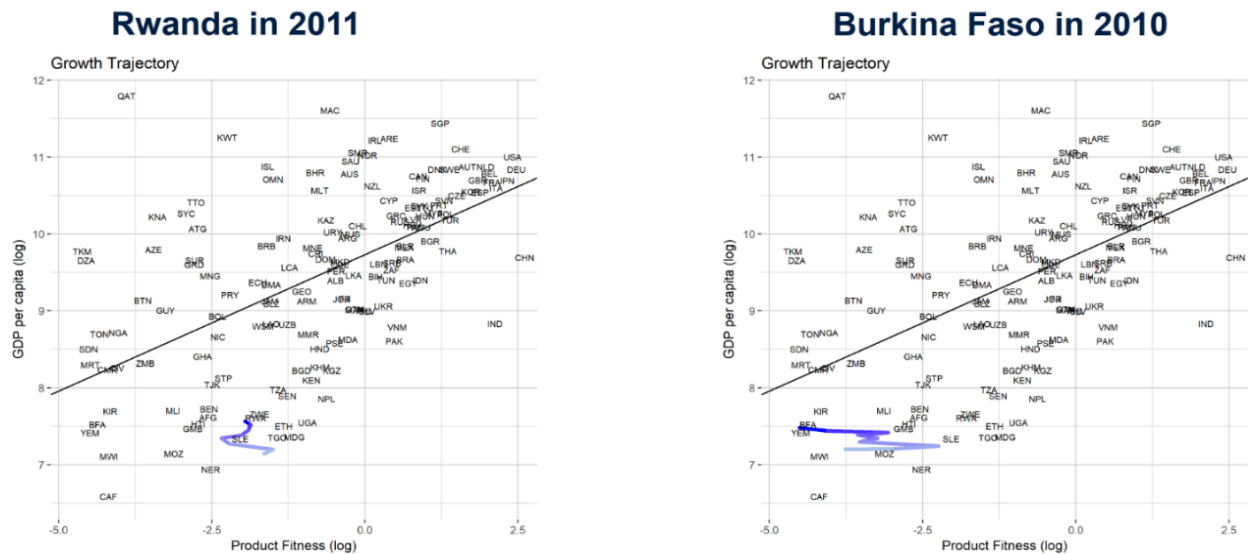
sectors. Among countries that have shown the most improvement are Uganda, Benin, Rwanda, Ethiopia, and Senegal.

Figure 15: Sierra Leone Sector Fitness, 2008–16



Source: Tacchella and Cader 2018, Roster 2019, WDI database, and IFC Global Macro & Market Research.

Figure 16: Fitness in Rwanda, 2011, and Burkina Faso, 2010

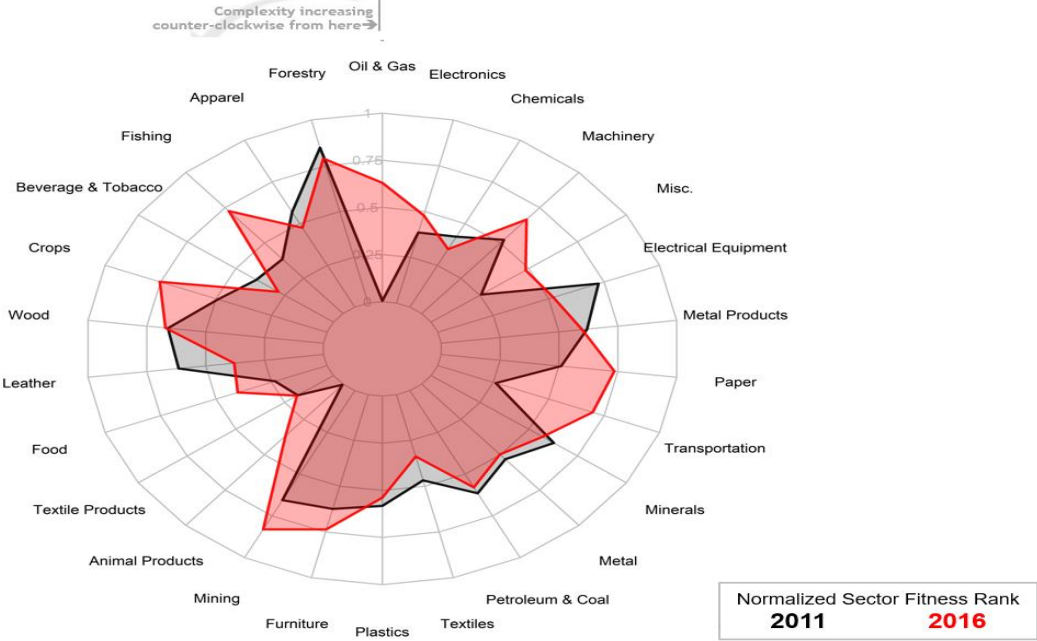


Source: Tacchella and Cader 2018, Roster 2019, WDI dataset and IFC Global Macro & Market Research.

Sierra Leone has capabilities within a relatively broad range of sectors that are both commodity- and processing-based (Figure 17). In the past five years, following reforms and donor-funded

projects to boost agricultural productivity, its fitness has improved in crops, fishing, mining, and paper manufacturing. However, fitness declined in leather, forestry, apparel, and textiles, especially during the Ebola epidemic in 2014–16.

Figure 17: Sierra Leone Sector Fitness



Source: Tacchella and Cader 2018, Roster 2019, WDI database and IFC Global Macro & Market Research.

Note: Sector fitness measures both within-sector diversification and a balance of more sophisticated product competitiveness relative to all other countries; the top decile (0.9–1) denotes world class and diversified. Two snapshots are provided: 2016 (red) and 2011 (black). The sectors are organized from least complex, oil & gas extraction (at 12 noon) counter-clockwise in increasing complexity to electronics, the most complex (at 1 pm).

In Sierra Leone, agriculture has substantial potential for economic diversification due to its fitness capability and capacity for job creation. The World Bank SCD (April 2018) identified raising agricultural productivity as a major path to long-term sustainable growth and poverty reduction. Agriculture employs nearly half the national workforce, formal and informal, and accounts for about half of GDP. With nearly 60 percent of the working population (ages 15–64) self-employed in agriculture, it is the most direct channel for the population to harness the benefits of the country’s natural resources (2014 Labour Force Survey). Higher agricultural productivity and output would offer poor households greater food security and higher incomes.

2.3.2 Options for Economic Diversification: Economic Complexity Analysis

The concept of economic fitness can also be used to map potential opportunities through either upgrading or diversification in agriculture and beyond, based on the factors that drive economic fitness: the diversity and complexity of production and consequently exports (Figure 18). Complexity and economic fitness analysis functions as a filter for goods and services that are (1) feasible, because the country already has many of the necessary capabilities, and (2) likely to

upgrade current capabilities. These industries have the potential to contribute to a country's future fitness and consequently raise GDP PC.

The analysis draws on metrics for industry complexity, feasibility of progression, growth rates, industry size, revealed comparative advantage, the product progression network, and sector fitness. This produces a segmentation of future opportunities for economic diversification (Figure 18). Thus, *diversification potential* refers to the likelihood that a country will become competitive as an exporter in a new industry or product group. "Green shoots," for instance, are industries that have high diversification potential but not necessarily much upgrade potential, since they signify a move to a new industry or product group that may or may not require new, more complex capabilities.

Upgrade potential refers to the likelihood that more sophisticated capabilities can be developed by moving into more complex industries or product groups. Complex established industries or product groups have high upgrade potential, since they strengthen more complex capabilities; but since those industries are already established, they do not contribute to diversification. The simplest form of upgrading is to add production steps, which heightens complexity. Since upgrading is the most feasible short-run direct approach, the remainder of this section identifies industries or product groups with upgrade potential.

Figure 18 illustrates different types of opportunities. The two axes mirror the two dimensions of economic fitness: diversification and the complexity of exports. Opportunities with high progression probability (x-axis) promote diversity of production. High complexity upgrade potential (y-axis) captures industries that upgrade productive capabilities. The distinction is between *established* (revealed comparative advantage > 1) and *green shoot industries* and results in four types of opportunities, with different outcomes.

Figure 18: Mapping Opportunities

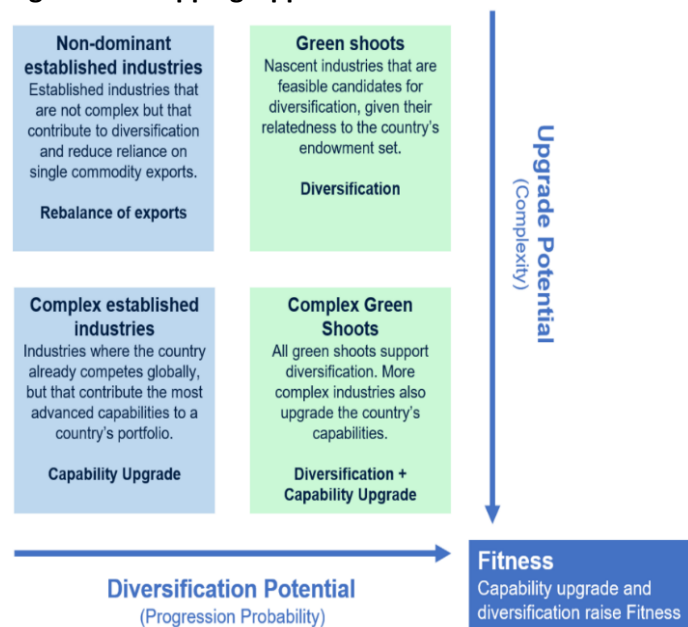


Figure 18 presents Sierra Leone's opportunities in agriculture and agribusiness, extractives and processed resources, chemicals, plastics and rubber, textiles, wood products, miscellaneous manufacturing, and machinery and transportation equipment. In light of the country's fitness capacity, capability in agriculture and agribusiness, and their potential for job creation, these sectors should be given top priority. Agribusiness could be a viable platform for accelerated diversification in the medium to longer term. Extractives and processed resources, chemicals,

plastic and rubber, and textiles have much more upgrade, rather than diversification, potential. There are a few diversification possibilities for fish fillets and unwrought gold (Figure 19). Although extractives and processed products have upgrade potential, maximizing job opportunities in these sectors would be more difficult, given their high capital intensity

Figure 19: Opportunities for Sierra Leone

	Upgrade potential	Diversification potential
Agribusiness	Fish (frozen, smoked salmon, salted), Edible nuts mixes, Decaffeinated coffee, Bouquet foliage	Salted/ dried fish fillets
Extractives and processed resources	Ores (titanium, zirconium), Articles of iron/steel incl. wire, Granite powder, Blades for leather industries, Glassware	Unwrought gold
Chemicals	Perfumes, Sodium phosphates	
Plastics and rubber	Plastic packaging, Natural rubber	
Textiles	Apparel incl. swimwear (of cotton, silk, wool)	
Wood products	Logs and lumber, Paper	
Misc. manufacturing	Parts of seats and furniture	
Machinery and Transportation equipment	Centrifuge parts, Machinery (lawn mowers, metal working drills, wine crushers, weighing machinery), Metal magnets, Distributors and ignition coils, Lamps, Transportation equipment (diesel trucks, trailer parts, signals)	

Source: Roster 2019, WDI dataset and IFC Global Macro & Market Research.

Box 3: Mexico: Growth and Productivity Reforms for Economic Diversification

Between 2012 and 2014 Mexico undertook extraordinary structural reforms that stimulated economic growth and development. The reform agenda had three main objectives: (1) boost economic growth through labor and multifactor productivity; (2) guarantee the rule of law and the rights of Mexican citizens; and (3) shield the roots of the democratic regime. The overarching call for change and the enthusiasm with which the new government of President Enrique Peña Nieto was received led to a broad political consensus on the reform agenda. The 11 reforms—heightening productivity, improving the performance of markets, and promoting energy sufficiency and efficiency, fiscal governance, financial sector, education, labor, and competition policy—were approved by a coalition of the three main parties. The program addressed many of the structural problems analysts of the Mexican economy had identified and was directed to modernizing the economy and opening it further, a process that had begun in the 1980s and 1990s.

Mexico's National Development Plan (NDP) for 2013–18 made productivity the center of the policy agenda. The cross-cutting NDP productivity strategy required that every federal government unit be dedicated to increasing productivity in a specific sector, region, or population group. An Economic Productivity Unit was established within the Ministry of Finance and Public Credit to monitor evolution of productivity indicators and oversee how the federal government's productivity strategy was progressing. The unit facilitated creation of a public-private association in May 2013 to promote labor and multifactor productivity-enhancing policies; this was the National Productivity Commission, which advised the executive and the business sector on matters related to economic growth and productivity. The unit also devised and implemented a cross-cutting democratizing productivity strategy based on six indicators with specific targets: (1) the informality rate—the share of informal workers in total employment; (2) labor productivity nationally; (3) investment in research and development as a percentage of GDP; (4) days it takes to start a business; (5) labor productivity in the south-southeastern region; and (6) multifactor productivity.

Although the results of the structural reforms and productivity-enhancing policies could only be fully visible in the long term, the reforms began to yield positive results quickly. For instance, the 2014 fiscal reform pushed up tax revenues by 4.6 percent of GDP and the number of taxpayers rose by 10.2 million. Increased competition in telecommunications has lowered telecom costs and opened up more opportunities for investment in advanced technologies. The major shift in energy policy led to a 3 percent drop in gasoline and diesel prices—the first price decline in Mexico for this category since 1991. The energy reform has also allowed private oil and electricity companies, domestic and foreign, to participate in different stages of the production process.

The reforms allowed Mexico to transition from recurring economic crisis, debt repayment problems, and a closed economy primarily directed by the government to an open economy with a flexible exchange rate, inflation control, and solid management of public finances. This new environment has allowed Mexico to become the 15th largest economy in the world measured by GDP. Based on the World Economic Forum 2018 Global Competitiveness Survey, Mexico is the 2nd most competitive economy in Latin America and the Caribbean. The country also ranks 54th of 190 on the 2019 World Bank's ease of doing business ratings.

Source: Mexico Institute, Wilson Center 2016

2.4 Summary of Findings and Policy Implications

The analysis in this section, and the lessons drawn from the experiences of other countries on ease of doing business, firm competitiveness, and pathways to economic diversification lead to four main conclusions for Sierra Leone:

1. Sierra Leonean firms rank low on within-firm determinants of productivity, which helps explain why their productivity is lower than regional peers:
 - *Structure*: (1) The size of firms increases with age in all countries except Sierra Leone, where medium-size firms are younger than small firms, which suggests that small firms face difficulties in growing to medium size. Large firms in Sierra Leone tend to produce more value-added per worker than small or medium-sized firms. (2) Comparator countries face similar competition from the large number of informal firms.
 - *Technology*: Low usage of technology by Sierra Leonean firms may explain why their productivity is below that of regional peers.
 - *Learning-by-doing (Export status)*: (1) Sierra Leone has fewer exporting firms than regional peers, suggesting that its firms may be less competitive and face barriers to exporting. (2) Exporting firms in Sierra Leone are more productive than non-exporters, suggesting that exporting firms enjoy efficiency gains through access to international markets that allows for knowledge spillovers.
 - *Management*: Sierra Leonean firms perform poorly on management quality indicators, which partly explains why their productivity is lower than firms in comparator countries.

2. The indicators on the external environment for firms show that infrastructure and the regulatory environment are inadequate in Sierra Leone, but this is also true for comparators:
 - *Regulation*: (1) Despite the low productivity of Sierra Leonean firms they fared better than firms in comparator countries in terms of how long it takes to obtain both import and construction licenses—but this raises other concerns about how firms are regulated. (2) Top management in Sierra Leonean firms nonetheless devote a significant amount of time to dealing with regulatory requirements, as do firms in Cameroon and Côte d’Ivoire.
 - *Infrastructure*: (1) Power outages and the resultant losses are a severe impediment to productivity growth for firms in Sierra Leone. (2) Access to a reliable water supply is also a critical concern.

3. Compared to countries in SSA and EAP, Sierra Leone has much lower competitiveness rankings on the majority of the 12 drivers of competitiveness. Moreover, comparator countries with relatively higher firm productivity have better Doing Business rankings.

4. Sierra Leone is resident in the poverty trap in the fitness–GDP PC plane. This region is characterized by erratic trajectories with unstable growth in GDP per capita and poor product fitness. However, the country is close enough to the boundary that it could break out of the trap by harnessing capabilities in a number of sectors, especially commodity- and agro-processing-based industries. Among areas where Sierra Leone could build complexity over the next few years are agribusiness, extractives and processed natural resources, chemicals, plastics and rubber, textiles, wood products, miscellaneous manufacturing, and machinery and transportation equipment.

3.0 Conclusion and Policy Recommendations

Sierra Leone should employ a mix of policy approaches to address its development challenges and diversify its economy by accelerating productivity-driven growth and job creation. This will require expanding the productivity of the agricultural base and supporting agribusinesses; value addition to promote manufacturing; investing in physical and human capital through health, education, and social protection measures; improving firm competitiveness and the regulation of business and strengthening governance and institutions to support private sector-led growth and diversify exports; and reducing macroeconomic volatility by reinforcing fiscal policy management and providing a better and more predictable environment for economic activities to flourish.

The analysis, through the economic fitness lens, suggests that agriculture is the most desirable sector for diversification. Given the country's vast expanses of accessible arable land, abundant rainfall, and large resources of fresh water, and with half of the population employed in agriculture, the SCD (World Bank 2018) emphasized that expanding agricultural productivity offers a direct path to job creation, sustained inclusive growth, and poverty reduction. Sierra Leone also has a valuable marine ecosystem able to support vibrant fisheries, with large populations of deep-water fish and crustaceans, and large and small stocks of coastal and ocean-water fish shared with other countries in the region. The country can expand productivity of its agriculture base by

- promoting private sector participation in the delivery of agricultural inputs,
- reforming extension services to provide skills support and training for farmers,
- promoting access to land by reforming the customary tenure system that depresses investment, and
- improving access to markets, encouraging private investment in selected value chains, and rapidly increasing production of staple and cash crops.

Current initiatives to use regulation to promote private sector participation in provision of fertilizer and seeds must be carried out in a manner that allows for smooth transition to a private sector-led input market. Such a shift to the private sector will free up public resources so that the government can give priority to quality control of imported inputs, launch a national campaign of research and development for products better tailored to Sierra Leone, and expand extension services. Given growing climate risks and the likely decline in rainfall intensity, the authorities should reduce reliance on rain-fed agriculture by developing irrigation systems and adopting policies for building up the resilience of agriculture, e.g., through climate-resistant seeds and other inputs.

To support agribusinesses, Sierra Leone could provide a more favorable environment and allow for transformational foreign direct investment in agriculture. The authorities should also adopt strategies to improve access to finance for agribusinesses and commercially oriented smallholder and subsistence farmers. Enhancing financial literacy, increasing investment in financial infrastructure, and incentivizing financial operators to expand agent networks and access points will be critical to providing finance for agribusinesses and smallholder farmers. This could be

complemented by direct support to develop a critical mass of local entrepreneurs involved in commercial agriculture and the distribution of food products.

Adding more value in manufacturing beyond reliance on the primary sectors could accelerate growth, generate more and better nonfarm jobs, and help diversify the economy. Targeted government interventions can encourage private investment in selected value chains, such as processing for rice and fish. With the country's natural comparative advantage in rice and fish production, there is a need to make them more productive and competitive and build up the regulatory framework to attract more private investment in fish processing and rice milling and trading. Promoting artisanal fishing offers an attractive path for economic development since the sector is labor-intensive and therefore able to generate much-needed jobs. Given Sierra Leone's huge endowment of mineral resources, the government could also foster economic links with mining by building or rehabilitating regional infrastructure linking the mines to markets and basic services and creating opportunities for value-added cutting, polishing, and jewelry made of semiprecious stones.

Increasing investment in physical capital is vital for developing the infrastructure, adding value in manufacturing, and dismantling bottlenecks to sustained productivity growth and poverty reduction. The country's infrastructure deficit in energy, transport, and ICT deters private investment by raising costs and preventing links between internal and external markets. Improving the quality of the electricity supply by reducing the frequency and duration of power outages could free up capacity in manufacturing (including food processing and semiprecious stones) and services sectors (formal and informal) and expand financial inclusion and mobile penetration. Investment to expand the fiberoptic network could enhance the footprint of digital financial services and mobile phone penetration and promote business use of technology. The government could also reinforce the feeder road network by scaling up investments. This will increase farmer access to all-weather rural roads and make it easier to deliver produce to processing centers or markets and help to reduce post-harvest losses.

Investing in human capital and skills will be crucial in promoting private sector-led productivity growth and reducing poverty. The government should maintain current policies to increase human capital through free quality education and health programs and promote the efficiency of public service delivery. It should also restructure TVET and tertiary education to better align job skills with market demand. In the medium term, an increase in human capital at the national level will improve the business climate, boosting private sector output and making Sierra Leone more attractive to investors. Improved health also reduces days lost to illness, making more labor available for agriculture or informal nonfarm enterprises. Moreover, quality education has been shown to stimulate adoption of modern farming practices and allow, for example, fishers and fish traders to move up the value chain.

To diversify Sierra Leone's economy and promote private sector-led investment, it will be crucial to improve both business regulation and firm competitiveness and to build up governance and institutions. Prerequisites for improving competitiveness and the business environment are easier business and property registration, increased access to credit, enhanced investor protection, expedited contract enforcement and solvency procedures, removal of impediments to obtaining electricity and water connection, streamlined tax payment processes, and simplified

processes for obtaining permits and licenses. Table 3 lists recommendations¹² and timelines for meeting them. To strengthen the governance and institutional framework for private sector-led growth, the government should intensify anticorruption measures, make its decisions more transparent through dialogue with the private sector; streamline license and permit processes and lower fees for smaller projects; improve land administration through legal reforms; automate tax and customs processes; and build the capacity of commercial court judges.

Table 3: Recommendations for Improving the Business Environment and Competitiveness

Prerequisite	Recommendations	Timelines
Easy business registration	<ol style="list-style-type: none"> 1. Make all business registration procedures available online. 2. Introduce comprehensive laws to make electronic documents and e-signatures valid. 3. Strengthen one-stop shop arrangements by deepening collaboration between tax authorities and other agencies. 4. Increase awareness through roadshows and allow for mobile registration centers. 	Short to medium term
Easy property registration	<ol style="list-style-type: none"> 1. Modernize the land administration laws. 2. Digitize land records, maps, and property deeds. 3. Make cadastre information available online and extend cadastre geographical coverage. 4. Set fixed property transfer fees, publish fee schedules online, and lower property transfer taxes. 5. Expedite procedures for addressing complaints. 6. Set up an electronic database for recording all land transactions. 	Medium to long term
Improved access to credit	<ol style="list-style-type: none"> 1. Maintain a unified credit registry and expand coverage to 5 percent of the population. 2. Allow online access to borrowers' credit information. 3. Amend the Credit Reference Act 2011 to allow creation of private credit bureaus. 4. Make it legally possible to collect and distribute credit information data from retailers and government. 5. Reduce government borrowing to minimize crowding-out of private credit. 6. Curb high inflation to help lower interest rates and reduce the cost of borrowing 	Short to medium term
Enhanced investor protection	<ol style="list-style-type: none"> 1. Require detail disclosure of beneficial owners and related parties. 	Short to medium term

¹² Recommendations are based on the Sierra Leone Doing Reform Roadmap (World Bank, 2019) could with the findings from the analysis.

	<ol style="list-style-type: none"> 2. Allow access to corporate documents before and during trials. 3. Avoid unilateral and arbitrary sanctions by requiring use of the courts. 4. Put in place sound grievance redress and mediation mechanisms. 5. Tighten up regulation of related-party transactions by requiring external reviews. 	
Strengthened contract enforcement	<ol style="list-style-type: none"> 1. Make public all judgments in commercial courts of first instance. 2. Limit the time allowed for contract trials and judgments to 60 days. 3. Allow for electronic filing of complaints. 	Short term
Easier insolvency resolution	<ol style="list-style-type: none"> 1. Modernize the laws for out-of-court settlements. 2. Require professional or academic qualifications for insolvency administrators. 3. Specify time limits for insolvency procedures. 	Short term
Enhanced firm use of technology and easier access to electricity and water connections	<ol style="list-style-type: none"> 1. Invest in digital broadband connectivity and deepen penetration of the fiberoptic network. 2. Create space for increased investment in energy and water. 3. Improve the governance and financial sustainability of power and water utilities. 4. Map all steps to connect with power and water and streamline approval processes. 5. Publish all fees associated with connection processes 6. Ensure the safety of internal wiring by approving regulations for the electrical engineering profession. 	Medium to long term
Streamlined tax payment processes	<ol style="list-style-type: none"> 1. Establish electronic filing and payment of taxes online. 2. Improve taxpayer education and simplify tax reporting forms to facilitate assessments and improve compliance. 3. Require electronic cash registers to improve compliance with the domestic goods and services tax 	Short to medium term
Simplified processes for obtaining permits and licenses	<ol style="list-style-type: none"> 1. Pass comprehensive building codes and make laws publicly available at no charge. 2. Establish a one-stop shop for all permits and licenses to streamline the process and improve coordination among governmental agencies. 3. Update master plans and zoning regulations for towns. 4. Reduce fees for small projects with no risk to health and safety. 	Medium to long-term

	5. Set up a professional system for verifying construction plans and supervising construction work.	
Strengthened governance and institutions	<ol style="list-style-type: none"> 1. Increase transparency in the public sector and intensify anti-corruption efforts. 2. Remove the distortions in land markets by updating the laws to allow for more secure land titling and tenure. 3. Streamline the licensing and permit processes, especially at the Environmental Protection Agency 4. Establish and promote dialogue with the private sector. 5. Create the environment for developing special economic zones using public-private partnerships. 	
Enhanced cross-border trade	<ol style="list-style-type: none"> 1. Streamline, map, and publish all fee schedules to help reduce the administrative cost of importing and exporting. 2. Roll out the automated system of customs data (ASYCUDA) to all ports and border crossing points to encourage electronic filing. 3. Improve inter-agency coordination for border management and customs clearance. 4. Establish a single window system. 5. Speed up adoption and coverage of risk-based inspection. 	Short, medium, and long term

Finally, to limit growth volatility and vulnerability to external shocks and create an environment for economic diversification, Sierra Leone needs to stabilize its macroeconomy. The authorities should therefore maintain their fiscal consolidation efforts to strengthen macroeconomic stability and economic growth by ensuring that fiscal targets are met consistently. The continuation of vigorous efforts to mobilize revenue and of structural reforms to improve tax efficiency should be complemented with stringent policies for justifying expenditures. Recommended are such measures as efficient wage control through payroll automation and biometric registration of all civil servants. The government should also push for more cost-conscious public procurement by limiting the use of sole-sourcing and implementing e-procurement. It is also crucial that it strictly prioritize capital spending to ensure spending on essential infrastructure and social programs addresses obstructions to growth while protecting the poorest and that recognizes the limited fiscal envelope. Given the recent spike in public debt, the government also needs a debt management strategy that discourages non-concessional borrowing and accumulation of arrears and also builds the capacity of the Debt Management Unit to enhance debt recording and reporting. The BSL should continue to tighten monetary policy to reduce inflation to single digits and limit its intervention in the foreign exchange market to allow the economy to adjust to external shocks and maintain export competitiveness. It should

also supervise and regulate banks rigorously to safeguard financial stability and continue its efforts to restructure the two state-owned banks.

References

- Chen and Tang. 1987. "Productivity and the Export Market: A Firm-level Analysis."
- Bernard, A. B., and J. B. Jensen. 1997. "Exporters, Skill-Upgrading, and the Wage Gap." *Journal of International Economics* 42: 3–31.
- . 1999. "Exceptional Exporter Performance: Cause, Effect, or Both?" *Journal of International Economics* 47: 1–25,
- Bloom, N., and J. Van Reenen. 2007, "Measuring and Explaining Management Practices across Firms and Countries" *Quarterly Journal of Economics* 122 (4): 1351–1408.
- Bloom, N., R. Sadun, and J. Van Reenen. 2007. "Americans Do I.T. Better: US Multinationals and the Productivity Miracle. " CEP Discussion Paper No 788, Centre for Economic Performance, LSE, London.
- Clarke, G. 2018. "Comparing Firm Performance in Ghana, Liberia, and Sierra Leone." World Bank Group, Washington, DC.
- Cusolito, A., and A. Cirera. 2010. *A Firm-Level Productivity Diagnostic for Kenya's Manufacturing and Services Sector*. Washington, DC: World Bank Group.
- Dabla-Norris, E., M. Gradstein, and G. Inchauste. 2005. "What Causes Firms to Hide Output? The Determinants of Informality.", IMF Working Paper No. 05/160, International Monetary Fund, Washington DC.
- IMF. 2018. "Côte d'Ivoire Country Report No. 18/182." International Monetary Fund, Washington, DC.
- LSE (London School of Economics) and IGC (International Growth Center). 2018. "The Underlying Causes of Fragility and Instability in Sierra Leone." The LSE-Oxford Commission on State Fragility, Growth and Development, United Kingdom.
- McMillan, M., and D. Rodrik. 2011. "Globalization, Structural Change and Productivity Growth." NBER Working Paper 17143, National Bureau of Economic Research, Cambridge, MA.
- Parham, D., and S. Zheng. 2006. "Aggregate and Industry Productivity Estimates for Australia." *Australian Economic Review* 39 (2): 216–26.
- Perry, G. E., W. F. Maloney, O. S. Arias, R. Fajnzylber, A. D. Mason, and J. Saavedra-Chanduvi. 2007. *Informality: Exit and Exclusion*. Washington, DC: World Bank.
- Republic of Côte d'Ivoire (2018). *Accelerating 2030 Agenda*. Abidjan, Côte d'Ivoire
- Syverson, Chad. 2004. "Market Structure and Productivity: A Concrete Example." *Journal of Political Economy* 112(6): 1181–1222.
- . 2004. "Product Substitutability and Productivity Dispersion." *Review of Economics and Statistics* 86 (2): 534–50.

- Tacchella, A., M. Cristelli, G. Caldarelli, A. Gabrielli, and L. Pietronero. 2012. "A New Metric for Countries' Fitness and Products' Complexity." *Scientific Reports* 2:723.
- . 2013. "Economic Complexity: Conceptual Grounding of a New metrics for Global Competitiveness." *Journal of Economic Dynamics and Control* 37(8), 1683–91.
- Valenzuela, P. 2016. "Mexico's Reforms and the Prospects for Growth." Mexico Institute, Wilson Center, Washington, DC.
- World Bank. 2012. *World Development Report 2013: Jobs*. Washington, DC: International Bank for Reconstruction and Development.
- . 2017. "Rwandan Economic Update – Tenth Edition: Sustaining Growth by Building on Emerging Export Opportunities." World Bank Group, Washington, DC
- . 2018. *Republic of Sierra Leone: Priorities for Sustainable Growth and Poverty Reduction, Systematic Country Diagnostic*. World Bank Group, Washington, DC.

Appendix A

Data Description

The data used in this note are from the World Bank Enterprise Surveys (WBES), which cover 152 firms in Sierra Leone’s nonagricultural private sector. This information, collected between July and September 2017, is about firm operations and firm perceptions of the quality of the business climate in Sierra Leone. A similar survey was conducted between September 2008 and February 2009.¹³ The sample is stratified by industry, firm size, and region. The survey covers both manufactures (food; garments; wood; publishing, printing, and recorded media; chemicals; plastics and rubber; nonmetallic mineral products; basic metals; fabricated metal products; and furniture) and services (construction, service of motor vehicles, wholesale, retail, hotels and restaurants, transport, post and telecommunications, and IT).

Table A1: Distribution of Firms in 2017, by Region, Size, Industry, and Formality

		Manufacturing		Services		Total
		Formal	Informal	Formal	Informal	
Bo	Small	10	1	3	0	14
	Medium	2	0	4	0	6
	Large	0	0	0	0	0
Western Urban	Small	18	2	20	4	44
	Medium	12	4	12	1	28
	Large	7	0	11	0	19
Kenema	Small	13	0	4	0	17
	Medium	1	0	2	0	3
	Large	0	0	0	0	0
Bombali	Small	8	1	9	1	19
	Medium	0	0	2	0	2
	Large	0	0	0	0	0
Total		71	8	67	6	152

Notes: The manufacturing sector consists of the following industries: food; garments; wood; publishing, printing, and recorded media; chemicals; plastics and rubber; nonmetallic mineral products; basic metals; fabricated metal products; and furniture. The services sector consists of retail, construction (Section F), wholesale, service of motor vehicles, hotels and restaurants (section H), transport (Section I), and IT and other services.

Most sampled firms (52%) are manufacturers. Their size is defined by the number of permanent full-time workers: small, 5–19 employees; medium, 20–99; and large, more than 99. Sierra Leonean firms are mostly small (61.8%) and medium (25.7%). The geographic regions chosen were those with the most firms: Bo, Western Urban, Kenema, and Bombali. Most firms (60%) are in Western Urban (Freetown in particular), with far fewer in Bombali (14%), Bo (13%), and Kenema (13%). The survey covers both formal (registered) and informal firms; 90.8% were formal—they have a tax identification card. Sampled firms can also be grouped into different “age” groups by years of operation: 1–9, 10–19, 20–29, 30–39, and 50+.

¹³ The data from both are combined to get a panel dataset in some empirical observations below.

Since the WBES collects productivity information for manufacturing firms only, this study is based on that sector. The information used related to employment, production costs (wages and raw material), capital stock, and output measured in terms of value added. Monetary values are expressed in local currency units (LCU), though for cross-country comparison, we convert LCU to U.S. dollars at official exchange rates and then apply the U.S. GDP deflator. Because the WBES collects information for the last complete fiscal year, we use the exchange rate and deflator of the year preceding the survey year to make this adjustment. For instance, for Sierra Leone’s 2017 survey, the 2016 official exchange rate and deflator are used to adjust the production function.

Figure A1: Value-Added (VA) per Worker, by Export Status

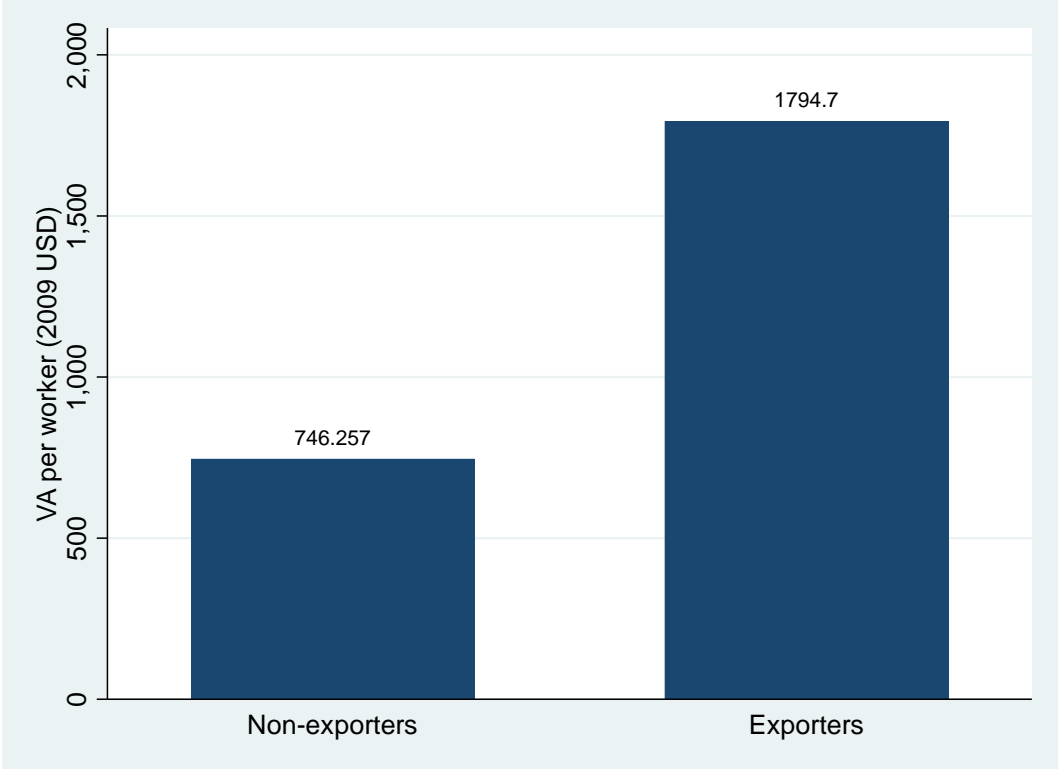


Figure A2: VA per Worker, by Age Group

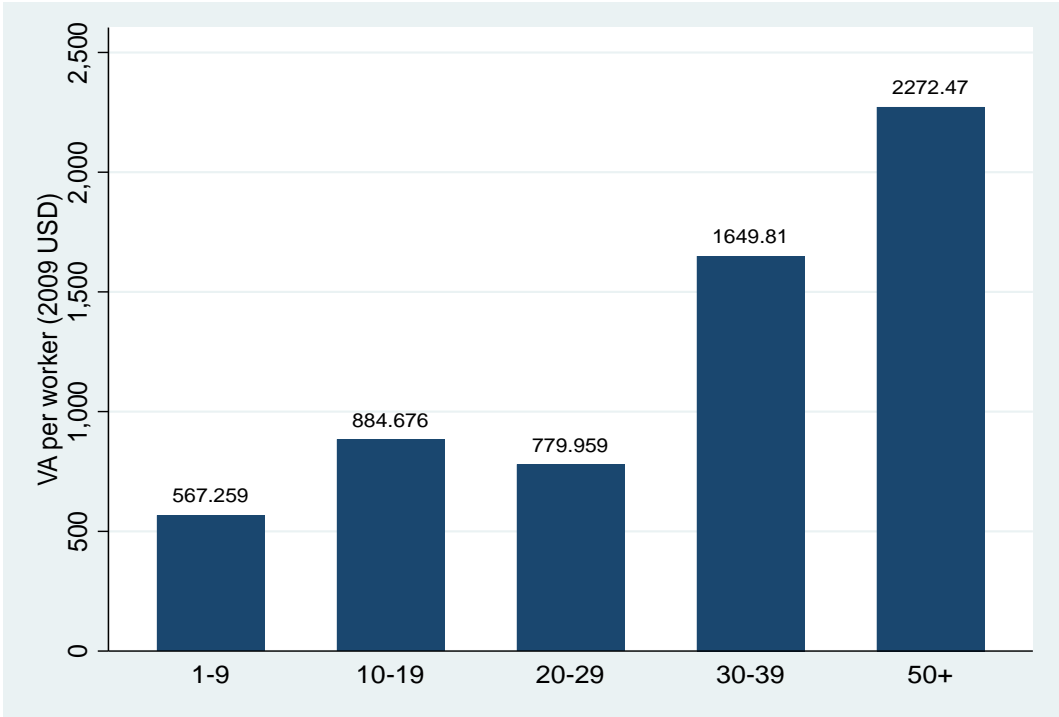


Figure A3: VA per Worker, Formal and Informal

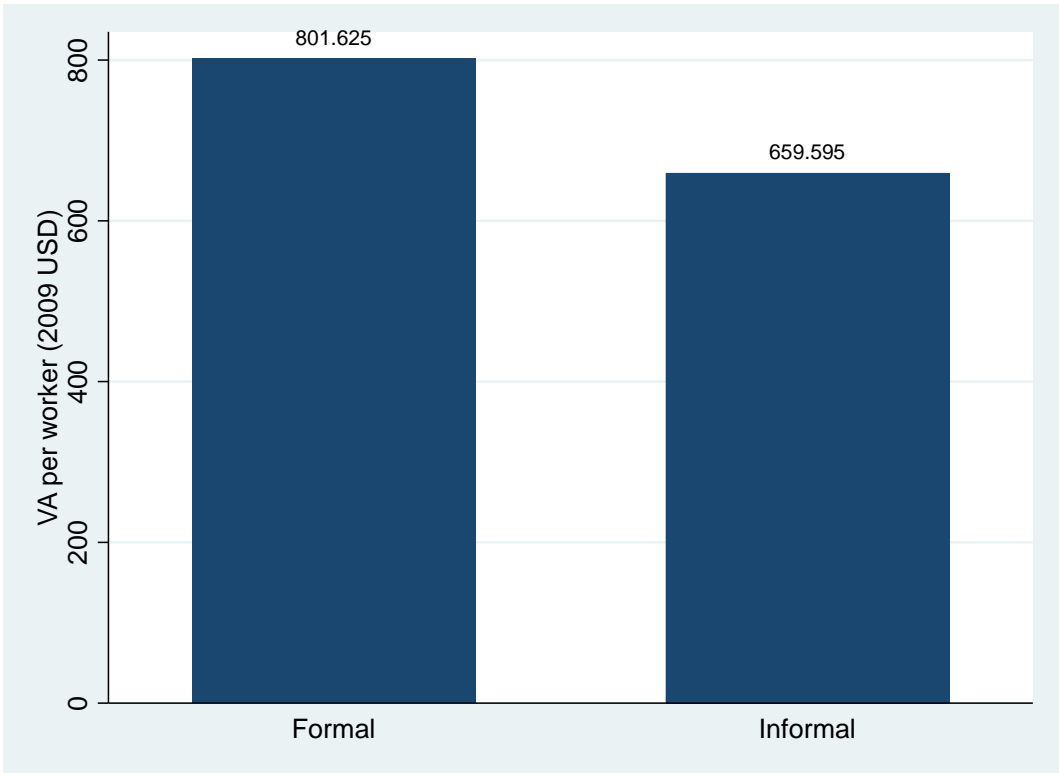


Figure A4: VA per Worker, by Region

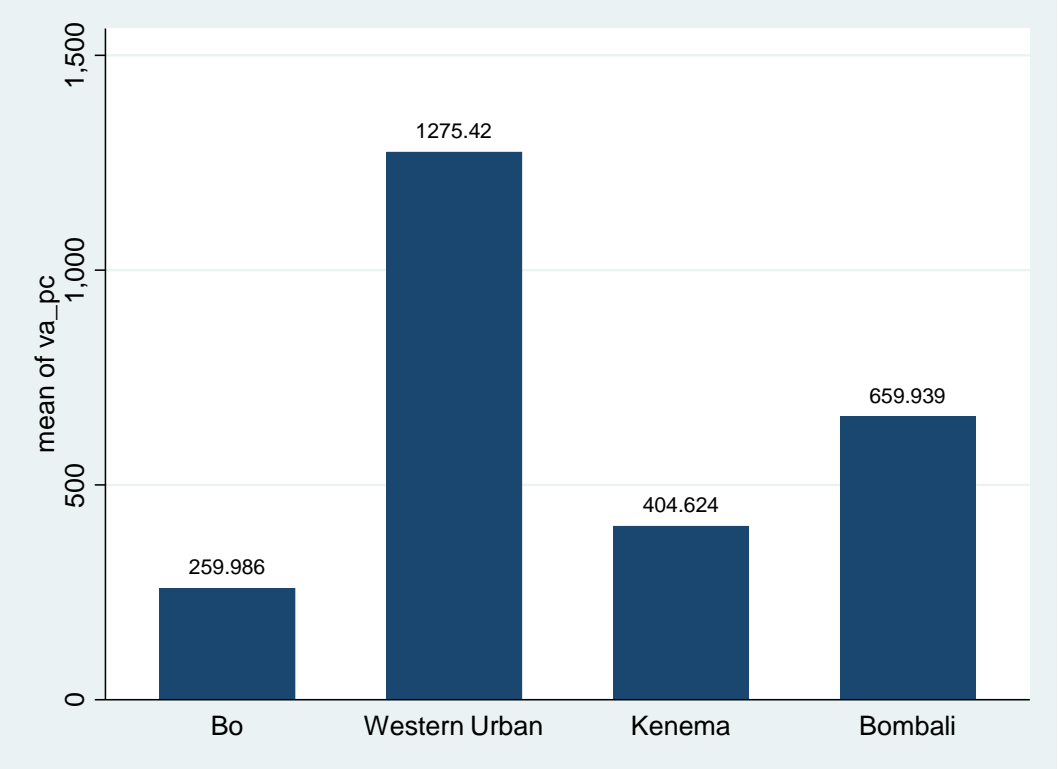


Figure A5: VA per Worker, by Firm Size

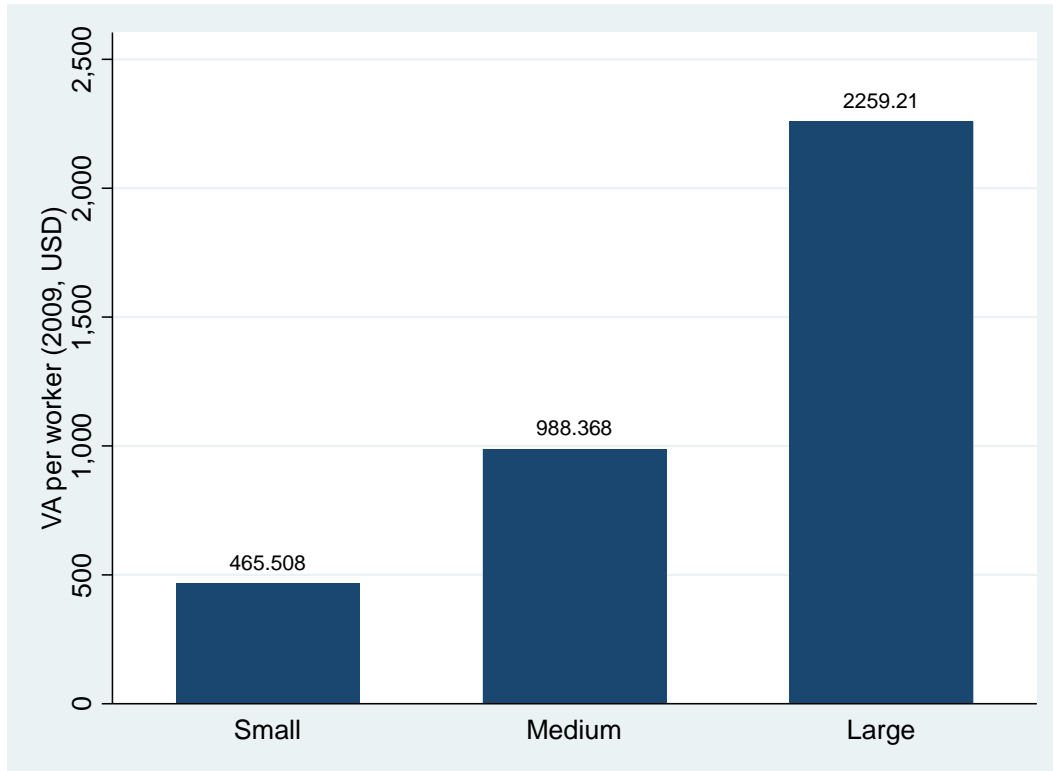


Figure A5.1: VA per worker in Ghana, Liberia, and Sierra Leone, by Firm Size

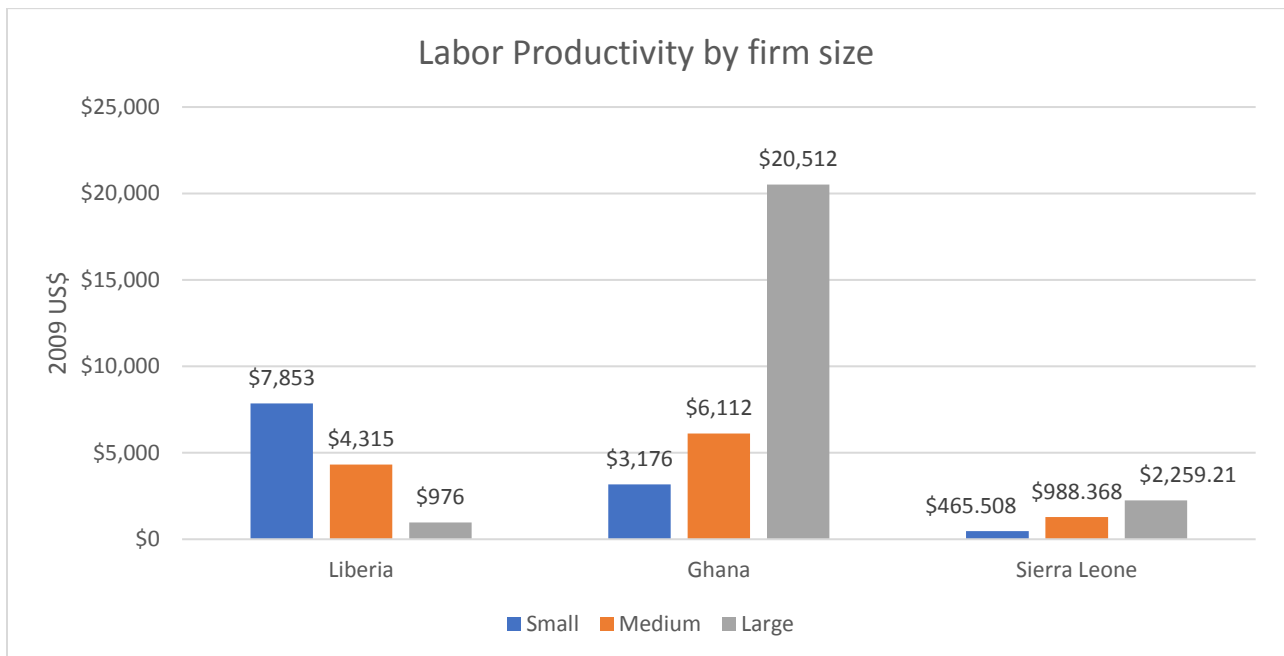


Table A2: Business Environment and Firm Productivity in Sierra Leone

Variable	Log of capital per worker	Log of employment	Log of VA per worker
Access to finance	-4.650*** (1.355)	-0.579 (0.430)	-1.792*** (0.540)
Access to electricity	-2.174 (1.490)	-0.709 (0.436)	-0.364 (0.407)
Corruption	-4.016* (2.027)	-0.297 (0.433)	-1.466*** (0.434)
Access to land	-2.417 (1.599)	-0.869* (0.446)	-1.966*** (0.677)
Tax rates	-4.325*** (1.425)	-0.671 (0.443)	0.089 (0.805)
Informal competition	-5.312*** (1.692)	-0.798 (0.527)	-1.217*** (0.584)
Crime	Omitted	-0.538 (0.462)	Omitted
Business licensing & permits	-5.381*** (1.483)	-0.350 (0.481)	-0.710 (0.442)
Transport	-2.093 (1.903)	-1.120** (0.545)	-0.174 (0.547)
Customs & trade regulations	-1.941 (1.431)	-0.492** (0.463)	-1.723** (0.814)
Inadequately educated workforce	-7.070*** (1.985)	-1.023** (0.463)	-0.833 (0.837)
Political instability	-2.119 (1.279)	Omitted	-2.072*** (0.444)
Tax administration	Omitted	-0.616 (0.453)	Omitted
Aged 10–19	0.474 (0.781)	0.238*** (0.086)	0.337 (0.343)
Aged 20–29	-1.112 (1.307)	0.307** (0.137)	-0.039 (0.379)
Aged 30–39	0.143 (0.726)	0.355** (0.167)	0.396 (0.590)
Aged 50+	Omitted	0.162 (0.224)	0.391 (0.593)
Medium firm	1.029 (1.351)	0.867*** (0.129)	0.787** (0.383)
Large firm	0.216 (1.006)	2.036*** (0.180)	0.127 (0.444)
Western Urban region	-0.845 (1.199)	0.139 (0.118)	0.773 (0.505)
Kenema region	-0.262 (1.396)	0.180 (0.115)	-0.149 (0.559)
Bombali region	-2.336 (1.558)	-0.097 (0.154)	0.213 (0.494)
Manufacturing sector	-0.262 (1.139)	-0.241 (0.151)	0.021 (0.370)
Shareholding, shares trade	Omitted	Omitted	Omitted
Shareholding, nontraded share	-3.775* (1.844)	-0.178 (0.376)	-0.816 (0.869)
Sole proprietorship	-2.502 (1.490)	-0.340 (0.225)	0.431 (0.607)
Partnership	-1.639 (1.738)	-0.246 (0.243)	0.059 (0.697)
Limited partnership	-5.127** (1.974)	0.333 (0.337)	-1.236* (0.661)
Constant	7.782*** (2.075)	3.205*** (0.508)	6.801*** (0.968)
Observations	66	149	76
R-squared	0.634	0.874	0.604

Notes: The dependent variable is Log of capital per worker in Column 2, Log of employment in Column 3 and Log of VA per worker in Column 4. For the categorical variables, the reference categories are “aged 1-9” for the age group, “Small firm” for the size category, “Bo region” for the region category, “Services” for the industry group, and “Don't know” for the legal status. Sector fixed effects are included in all regressions. Asterisks denote significance levels as follows: *** p<0.01, ** p<0.05, * p<0.1.

Table A3: Within-sector Productivity Growth and Structural Change, Sierra Leone, 2002–17

Productivity changes (%)	Within Sectors				Between Sectors			
	Agriculture	Industry	Services	Total	Agriculture	Industry	Services	Total
2002	17.98	0.67	2.44	21.11	-10.26	4.64	6.80	1.18
2003	3.10	0.96	0.12	4.19	-1.57	1.11	0.65	0.18
2004	0.72	0.13	-0.52	0.33	1.29	0.74	-2.17	-0.14
2005	2.80	0.23	-0.83	2.20	-2.07	-2.74	4.99	0.17
2006	2.96	0.52	-0.95	2.54	-2.88	-2.18	5.26	0.19
2007	8.10	0.17	-0.76	7.51	-5.38	-1.04	6.73	0.30
2008	4.31	-0.52	0.78	4.57	-5.78	-1.32	7.42	0.31
2009	2.68	-0.11	0.09	2.66	-4.23	-1.51	5.94	0.19
2010	2.34	0.61	0.13	3.10	-8.25	-0.66	9.29	0.37
2011	3.35	0.44	0.69	4.49	-7.78	-0.03	8.16	0.35
2012	3.63	3.99	0.02	7.65	-12.8	2.11	11.49	0.73
2013	4.37	3.24	-0.03	7.58	-15.53	4.03	12.65	1.15
2014	1.19	0.54	-1.11	0.62	-10.38	1.24	9.56	0.42
2015	-2.11	-7.95	0.88	-9.18	14.73	-4.85	-10.56	-0.68
2016	0.59	1.14	0.36	2.10	-1.39	0.65	0.83	0.09
2017	1.60	-1.14	1.54	2.00	-2.08	0.67	1.50	0.09

Appendix B: Recent Business Environment Reforms

Reforms	Benin	Côte d'Ivoire	Cameroon	Senegal	Sierra Leone
Registering a business or property	Benin eliminated the need to notarize company by-laws to activate a bank account after incorporation (2016).	Côte d'Ivoire eliminated the requirement to notarize company deeds (2019)/	Cameroon began publishing notices of company incorporation online through the one-stop shop (2019).	Senegal (1) increased transparency at its land registry and cadaster (2016); and (2) decreased the time needed to transfer and register property (2019).	Sierra Leone reduced business registration fees (2016).

Securing construction permits		Côte d'Ivoire (1) made building regulations accessible online (2016); and (2) strengthened quality control of construction by appointing an independent architect to the commission tasked with reviewing building permit applications (2019).			X
Getting credit	Benin launched a new credit bureau (2019).	Côte d'Ivoire expanded its credit bureau's coverage of borrowers and began to distribute data from utility companies (2019).		Senegal established a new credit bureau (2016).	X

Enforcing contracts	Benin passed a law that regulates all aspects of mediation as an alternative dispute resolution mechanism (2019).	Côte d'Ivoire passed a law that regulates all aspects of mediation as an alternative dispute resolution mechanism (2019).	Cameroon passed a law that regulates all aspects of mediation as an alternative dispute resolution mechanism (2019).	Senegal passed a law that regulates all aspects of mediation as an alternative dispute resolution mechanism (2019).	X
Resolving insolvency		Côte d'Ivoire introduced a new conciliation procedure for companies in financial difficulties and a simplified preventive settlement procedure for small companies.		Senegal introduced a new conciliation procedure for companies in financial difficulties and a simplified preventive settlement procedure for small companies (2016).	X
Paying taxes		Côte d'Ivoire introduced an online platform for filing corporate income tax and value-added tax returns (2019).		Senegal lowered the maximum cap for corporate income tax and implemented more efficient accounting systems and software (2019).	X

Labor market regulations	Benin amended its regulations pertaining to fixed-term contracts (2019).				
---------------------------------	--	--	--	--	--