

Africa's Pulse

OCTOBER 2020 | VOLUME 22

AN ANALYSIS OF ISSUES SHAPING AFRICA'S ECONOMIC FUTURE

Advance Copy



CHARTING THE ROAD TO RECOVERY

ACKNOWLEDGMENTS

This report was produced by the Office of the Chief Economist for the Africa Region under the overall guidance of Hafez Ghanem and Ousmane Diagana. The team for this edition of Africa's Pulse was led by Albert G. Zeufack and Cesar Calderon. The core team included Gerard Kambou, Megumi Kubota, Vijdan Korman, and Catalina Cantu Canales.

Valuable contributions to the report were provided by Izak Atiyas, Henry Aviomoh, John Baffes, Tania Begazo, Moussa Blimpo, Andrew Burns, Benoit Philippe Marcel Campagne, Amy Copley, Hrisyana Doytchinova, Fuda Jiang, Mark Dutz, Robert Echandi, Kaleb Girma, Aparajita Goyal, Rogelio Granguillhome Ochoa, Alexander Haider, Manuel Henriques, Niels Junker Jacobsen, Yuto Kanematsu, Woubet Kassa, Patrick Alexander Kirby, Samantha Lach, Somik V. Lall, Maryla Maliszewska, Israel Osorio-Rodarte, Ipek Ceylan Oymak, Carlos Rodríguez Castelán, Michele Ruta, and Jinxin Wu.

Comments were received from: Amit Dar, Simeon K. Ehui, Franziska Ohnsorge, Dena Ringold, Abdoulaye Seck, and Deborah L. Wetzel. And also from: Judy Baker, William G. Battaile, Moussa Blimpo, Armel Castets, Paulo Guilherme Correa, Martin Elias de Simone, Paavo Eliste, Wolfgang Fengler, Justin Damien Guenette, Eno Isong, Jeehye Kim, Holger Kray, Jorge Munos, Cedric Okou, Vijay Pillai, Clelia Rontoyanni, Nenette V. Santero, Parmesh Shah, Marc Stocker, Rudi Steinbach, Jozefien van Damme, and Dorte Verner.

The report was edited by Sandra Gain. The online and print publication was produced by Bill Pragluski, and the cover design was by Rajesh Sharma.

Communications and dissemination was led by Maura K. Leary and included Aby K. Toure, Elena Lucie Queyranne, Stephanie Andrea Crockett, Dasan Bobo, Sarah Farhat, Marie Gabrielle Duffour, Alexandre Hery, Ruti Ejangué, and the External Affairs team, Africa Region. Beatrice Berman, Rose-Claire Pakabomba, and Kenneth Omondi provided production and logistical support.

Advance Copy

OCTOBER 2020 | VOLUME 22

Africa's Pulse

AN ANALYSIS OF ISSUES SHAPING
AFRICA'S ECONOMIC FUTURE

CHARTING THE ROAD TO RECOVERY

© 2020 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW, Washington DC 20433
Telephone: 202-473-1000; Internet: www.worldbank.org

Some rights reserved

1 2 3 4 23 22 21 20

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Nothing herein shall constitute or be considered to be a limitation upon or waiver of the privileges and immunities of The World Bank, all of which are specifically reserved.

Rights and Permissions



This work is available under the Creative Commons Attribution 3.0 IGO license (CC BY 3.0 IGO) <http://creativecommons.org/licenses/by/3.0/igo>. Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, under the following conditions:

Attribution—Please cite the work as follows: Zeufack, Albert G., Calderon, Cesar; Kambou, Gerard; Kubota, Megumi; Cantu Canales, Catalina; Korman, Vijdan. 2020. “Africa’s Pulse, No. 22” (October), World Bank, Washington, DC. Doi: 10.1596/978-1-4648-1568-3. License: Creative Commons Attribution CC BY 3.0 IGO

Translations—If you create a translation of this work, please add the following disclaimer along with the attribution: *This translation was not created by The World Bank and should not be considered an official World Bank translation. The World Bank shall not be liable for any content or error in this translation.*

Adaptations—If you create an adaptation of this work, please add the following disclaimer along with the attribution: *This is an adaptation of an original work by The World Bank. Responsibility for the views and opinions expressed in the adaptation rests solely with the author or authors of the adaptation and are not endorsed by The World Bank.*

Third-party content—The World Bank does not necessarily own each component of the content contained within the work. The World Bank therefore does not warrant that the use of any third-party-owned individual component or part contained in the work will not infringe on the rights of those third parties. The risk of claims resulting from such infringement rests solely with you. If you wish to re-use a component of the work, it is your responsibility to determine whether permission is needed for that re-use and to obtain permission from the copyright owner. Examples of components can include, but are not limited to, tables, figures, or images.

All queries on rights and licenses should be addressed to the Publishing and Knowledge Division, The World Bank, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.

ISBN (electronic): 978-1-4648-1568-3

DOI: 10.1596/978-1-4648-1568-3

Cover design: Rajesh Sharma

Contents

Executive Summary	1
Long Road Ahead	2
Steep Climb Ahead	2
Sound Policies Are Needed to Pave the Road to Recovery	3
African Countries Are Seizing the “Opportunity” from COVID-19	4
Role for the International Community	6
Section 1: Recent Trends and Developments	7
1.1 Global Trends	7
1.2 Recent Developments in Sub-Saharan Africa	10
Economic Impact of the COVID-19 Pandemic	16
Outlook	31
Risks	39
Policies	41
Charting the Course for Sustained Recovery in Africa	51
Section 2: COVID-19: Drivers of Cross-Country Differences in Growth Impact	55
2.1. COVID-19: An Exploratory Analysis of the Output Effects across Countries	57
Section 3: Charting the Course for a Sustained Recovery in Africa	65
3.1 Structural Change and Sectoral Reallocation	70
3.2 Technological Transformation: A Focus on Digital Upgrading in Africa	90
3.3 Urbanization and Spatial Integration	113
Appendix: Country Classifications	130
References	132

List of Boxes

Box 1.1:	Successful Health Responses to COVID-19: The Cases of Mauritius and Senegal . . .	14
Box 1.2:	How the Pandemic Impacts Human Capital in Sub-Saharan Africa	37
Box 3.1:	African Countries Should (Re)Position to Seize Opportunities That Arise from GVCs Post-COVID	78
Box 3.2:	African Tourism Sector and COVID-19: What Has Been Done? What Needs to Be Done?	80
Box 3.3:	Digital Sector Responses to COVID-19 in Sub-Saharan Africa	94
Box 3.4:	Digital Technologies and Household Welfare: The Case of Senegal	105
Box 3.5:	The Promise of Cities: Agglomeration Economies and Returns to Scale	119
Box 3.6:	Most Agroprocessing in Sub-Saharan Africa Is Small in Scale and Thus Inefficient and Relatively Unproductive	121

List of Figures

Figure 1.1:	Daily New COVID-19 Cases	7
Figure 1.2:	Stringency Index, by Region	7
Figure 1.3:	Real GDP Growth in Advanced Economies and EMDEs, 2020Q2.	8
Figure 1.4:	Consensus Forecasts of GDP Growth in 2020	8
Figure 1.5:	Capital Flows and EMBI Spreads	9
Figure 1.6:	Commodity Price Indices	9
Figure 1.7:	COVID-19 Confirmed Cases	10
Figure 1.8:	COVID-19 Deaths	10
Figure 1.9:	Daily New Cases in Sub-Saharan Africa	11
Figure 1.10:	COVID-19 Total Tests	12
Figure 1.11:	Stringency Index in Sub-Saharan Africa	12
Figure 1.12:	Community Mobility: Recreation and Retail	13
Figure 1.13:	Community Mobility: Public Transportation	13
Figure 1.14:	South Africa: GDP Growth, Production Side, 2020Q2.	16
Figure 1.15:	South Africa: GDP Growth, Expenditure Side, 2020Q2	17
Figure 1.16:	East and Southern Africa: GDP Growth in Resource-Intensive Countries, 2020Q1-Q2	17
Figure 1.17:	East and Southern Africa: GDP Growth in Non-Resource-Intensive Countries, 2020Q1-Q2	18
Figure 1.18:	Nigeria: Oil and Non-Oil GDP Growth	18
Figure 1.19:	Nigeria: GDP Growth, by Sector	19

Figure 1.20:	West and Central Africa: Oil Production in CEMAC Countries.	19
Figure 1.21:	West and Central Africa: GDP Growth in Non-Resource-Intensive Countries, 2020Q1-Q2.	19
Figure 1.22:	West and Central Africa: Nigeria and Ghana: PMI	20
Figure 1.23:	West and Central Africa: Côte d'Ivoire: Industrial Production	20
Figure 1.24:	East and Southern Africa: South Africa: Manufacturing PMI	21
Figure 1.25:	East and Southern Africa: South Africa: Business Confidence Index.	21
Figure 1.26:	East and Southern Africa: South Africa: Consumer Confidence Index	21
Figure 1.27:	East and Southern Africa: Composite PMIs.	22
Figure 1.28:	Sub-Saharan Africa: Current Account Balance	23
Figure 1.29:	East and Southern Africa: Current Account Balance	23
Figure 1.30:	West and Central Africa: Current Account Balance	23
Figure 1.31:	Eurobond Issuance	24
Figure 1.32:	Sovereign Bond Spreads	24
Figure 1.33:	Exchange Rates against the U.S. Dollar	25
Figure 1.34:	Sub-Saharan Africa: Consumer Price Inflation	26
Figure 1.35:	Fiscal Balance	27
Figure 1.36:	East and Southern Africa: Fiscal Balance	27
Figure 1.37:	West and Central Africa: Fiscal Balance	28
Figure 1.38:	Public Debt	28
Figure 1.39:	East and Southern Africa: Government Debt	29
Figure 1.40:	West and Central Africa: Government Debt	29
Figure 1.41:	External Debt Distress	30
Figure 1.42:	Contribution to GDP Growth: Expenditure.	31
Figure 1.43:	Contribution to GDP Growth: Production	31
Figure 1.44:	GDP Growth, by Resource Group.	32
Figure 1.45:	GDP Contractions in Tourism-Dependent Countries.	32
Figure 1.46:	Baseline Growth Forecast, by Subregion	32
Figure 1.47:	East and Southern Africa: Baseline Growth Projections	34
Figure 1.48:	West and Central Africa: Baseline Growth Projections	34
Figure 1.49:	Downside GDP Growth Projections	35
Figure 1.50:	Baseline GDP Growth Projections	35
Figure 1.51:	Real GDP per Capita	36

Figure 1.52:	Real GDP per Capita, 2000–21	36
Figure 1.53:	Growth Taxonomy in Sub-Saharan Africa.	40
Figure 1.54:	Fiscal Deficit Increase in Selected Regions and Countries, 2020	50
Figure 2.1:	CPIA Overall Index vs. Change in GDP Growth	59
Figure 2.2:	Trade Openness vs. Change in GDP Growth	59
Figure 2.3:	Change in the 2020 Growth Forecast, by Region	60
Figure 2.4:	Gross FDI Inflows vs. Change in GDP Growth	60
Figure 2.5:	Change in Sub-Saharan Africa’s 2020 Growth Forecast, by Country Groups.	61
Figure 2.6:	Participation in Global Value Chains, 1990–2015	62
Figure 3.1:	Jobs and Economic Transformation	66
Figure 3.2:	Structural Transformation in Africa and the World	71
Figure 3.3:	Number of Manufacturing Workers, by Age of Firms.	72
Figure 3.4:	Sectoral Employment in GVCs, Sub-Saharan Africa and Benchmark Countries ⁷⁴	
Figure 3.5:	GVC Participation and Job Growth: The Roles of Technology, Competitiveness, and Demand in Sub-Saharan Africa and Benchmark Countries, 2000–14	75
Figure 3.6:	Real Income Gains, by Country and Policy Reform	83
Figure 3.7:	Impact of the AfCFTA on Trade, by Sector	85
Figure 3.8:	AfCFTA: Effect on Wages, by Gender.	85
Figure 3.9:	AfCFTA: Effect on Wages, by Skill	85
Figure 3.10:	Extreme Poverty	86
Figure 3.11:	Moderate Poverty	86
Figure 3.12:	Coverage and Usage of 3G Networks	93
Figure 3.13:	Coverage and Usage of 4G Networks	96
Figure 3.14:	Broadband-Capable Connections: Share and Usage.	97
Figure 3.15:	Determinants of Mobile Internet Adoption in Senegal, 2018-19.	98
Figure 3.16:	Cost of 1GB Data in Developing Countries, by Region.	100
Figure 3.17:	Price of Internet-Enabled Devices in Developing Countries, by Region	100
Figure 3.18:	Total Cost for Universal Broadband in Sub-Saharan Africa	109
Figure 3.19:	Roadmap for Universal Access to Affordable and Good Quality Broadband in Africa	111
Figure 3.20:	Urbanization and Economic Transformation Have Gone Hand in Hand in Asia.	118
Figure 3.21:	Urbanization Has Been Associated with Uniform Growth in East Asia, but the Story Is a Mixed Bag for Sub-Saharan Africa	118
Figure 3.22:	High Share of Urban Farmers in Sub-Saharan Africa	120

Figure 3.23:	Almost a Third of the Urban Population Lives in Towns with Fewer Than 50,000 People	121
Figure 3.24:	Internet Use Is Low in Sparsely Populated Towns and Rural Areas in Low-Income Countries	123
Figure B1.1.1:	COVID-19 New Daily Cases and Deaths and the Stringency of Containment Measures	14
Figure B3.3.1:	Digital Sector Responses to the COVID-19 Pandemic in Sub-Saharan Africa	94
Figure B3.4.1:	Impact of 3G Coverage on Consumption and Poverty in Senegal	106
Figure B3.4.2:	Effect of the Number of Friends Who Use Messaging on the Probability of Adopting Mobile Broadband	107

List of Tables

Table 1.1:	Public Debt Reporting Heatmap	46
Table 1.2:	How DSSI Benefits Sub-Saharan African Countries	48
Table 3.1:	Employment Growth in Manufacturing Industries in Sub-Saharan Africa and Benchmark Countries	76
Table B3.2.1:	Policy Measures to Support Tourism.	80
Table A1:	Country Classification by Resource Abundance in Sub-Saharan Africa.	130
Table A2:	West and Central Africa	130
Table A3:	East and Southern Africa.	131

Executive Summary

- ▶ **The COVID-19 pandemic is not over yet: African countries must not let their guard down.** The pandemic continues to spread, with the number of cases surpassing 36 million and more than one million deaths globally. With the notable exception of South Africa, Sub-Saharan Africa appears to have so far escaped the worst of the health crisis. As of September 28, the numbers of COVID-19 confirmed cases and deaths in the region were, respectively, 3.4 and 2.5 percent of those registered worldwide. However, great uncertainty surrounds the scale and trajectory of the pandemic in the region. The occurrence of a second wave in Europe and the United States and concerns about a potential second wave in African countries are fueling further uncertainty about the persistence and spread of the virus.
- ▶ **The COVID-19 pandemic has taken a large toll on economic activity in Sub-Saharan Africa, putting a decade of hard-won economic progress at risk.** Economic activity in the region is expected to contract by 3.3 percent in 2020, confirming the prediction that Sub-Saharan Africa would suffer its first recession in a quarter-century in 2020. By the end of 2021, the region's real gross domestic product (GDP) per capita will likely regress to its level in 2007. In Africa, COVID-19 could push up to 40 million people into extreme poverty, erasing at least five years of progress in fighting poverty. Similarly, COVID-19 could set back progress in building human capital, as school closures will affect nearly 253 million students, potentially causing losses in learning.
- ▶ **The economic contraction caused by the COVID-19 pandemic will spread broadly across countries in Sub-Saharan Africa in 2020.** Due to the combination of domestic lockdowns and related spillovers from the global recession, growth is expected to slow in all countries in the region. Growth fell sharply in the second quarter of 2020 across countries, especially in Nigeria (6.1 percent year-on-year) and South Africa (17.1 percent). The decline in growth is expected to be larger in East and Southern Africa than West and Central Africa, partly because of the stronger output contractions in South Africa and Angola. Disruptions in the tourism industry and lockdowns will cause substantial slowdowns in Ethiopia, Kenya, and the island nations. In West and Central Africa, the decline in growth is projected to be driven mainly by oil exporters. Activity among non-resource-intensive countries, including Côte d'Ivoire, Ghana, and Senegal, will slow but not contract, helped by relatively more robust growth in the agriculture sector. Fragile countries in the region are expected to experience a strong decline in growth as COVID-19 exacerbates the drivers of fragility.
- ▶ **The road to recovery will be long and steep, and it must be paved with sound economic policies.** Countries need to reconstitute their fiscal space to finance programs that can stimulate recovery, improve debt management, and fight corruption. Ultimately, sustained recovery will depend on how fast African countries prioritize policy actions and investments that address the challenge of creating more, better, and inclusive jobs. These policy priorities, in turn, operate through three critical and interrelated channels: digital transformation, sectoral reallocation, and spatial integration. Several countries in the region are seizing the opportunity of the crisis to accelerate these reforms.

Long Road Ahead

- ▶ **The rebound in economic activity is expected to be modest in Sub-Saharan Africa in 2021, and the economic outlook is subject to considerable uncertainty.** Economic activity started to rebound in the third quarter of 2020 as the spread of COVID-19 began to abate and containment measures were progressively lifted. However, the recovery was modest and uneven across countries. Household spending on services remained subdued, industrial production slowed, and international trade remained weak, delaying the pickup in manufacturing production.
- ▶ **Sub-Saharan Africa's real GDP is projected to pick up to 2.1 percent in 2021, which is below the 2.4 percent rate achieved in 2019 and below population growth; per capita GDP would contract by more than 6.0 percent.** Lower domestic consumption and investment, due to the pandemic and related containment measures, pushed the regional economy into recession. On the supply side, large contractions in the service and industrial sectors supported the downturn. Baseline projections assume that new COVID-19 cases will continue to slow across the region, new outbreaks will not lead to national lockdowns, government policy responses will boost business and consumer confidence, the global economy will continue to rebound, and commodity prices will remain stable. Under these assumptions, GDP could rise to 3.2 percent in 2022. East and Southern Africa is expected to experience a slightly stronger pickup in activity, with growth projected to average 2.7 percent in 2021, compared with 1.3 percent in West and Central Africa. This partly reflects the rebound in South Africa and Angola, as strict containment measures are relaxed, and a gradual strengthening of activity among East African countries, including Kenya and Rwanda. In West and Central Africa, slower growth among oil exporters, notably Nigeria, will partially offset a rebound in the rest of the sub-region. Excluding Nigeria, growth in West and Central Africa is projected to rise to 3.0 percent in 2021, reflecting a more robust rebound among metals exporters and non-resource-intensive countries, including Côte d'Ivoire and Niger, as policy uncertainty declines. In the two sub-regions, growth is expected to remain weak among fragile countries.
- ▶ **In the downside scenario, the region's GDP is projected to expand by only 1.2 percent in 2021 and 2.1 percent in 2022.** In this scenario, heightened uncertainty related to the evolution of the pandemic constrains domestic consumption and investment, while lower commodity prices weigh on exports. Growth in West and Central Africa will rise from -2.8 percent in 2020 to just 0.5 percent in 2021, compared with 1.3 percent in the baseline scenario, as a moderate rebound among metals exporters and non-resource-intensive countries is offset by a contraction in Nigeria. In East and Southern Africa, growth is projected to rise from -3.9 percent in 2020 to 1.9 percent in 2021, compared with 2.7 percent in the baseline scenario, reflecting a weaker recovery in South Africa and Angola.

Steep Climb Ahead

- ▶ **The road to recovery will be steep: most countries in the region entered the COVID-19 crisis with weaker growth-supporting institutions.** Economic activity in countries with stronger institutional quality has suffered a lesser blow from the pandemic. However, most countries in the region entered the crisis with weaker Country Policy and Institutional Assessment scores—particularly in the structural policies and public management and institutions clusters. Strong institutions can help design and implement effective policy responses to chart the course of recovery and improve countries' resilience to shocks. As uncertainty related to the nature of the pandemic settles, institutional reforms that lead to more accountable and efficient governments, better service delivery, more civil society engagement, and less corruption will be key.

- ▶ **COVID-19 has exposed acute macroeconomic vulnerabilities across Africa.** Most countries will emerge from the COVID-19 crisis with historically large budget deficits. Fiscal deficits in the region will widen, on average, by 3.5 percentage points of GDP in 2020. Debt burdens will be heavier. The risk of debt default has started to materialize for one country in the region. Declines in export revenues, including from international tourism, have compounded the domestic impact of the COVID-19 shock. At the same time, reductions in remittance flows, the slowdown in foreign direct investment, and declining private capital flows have tightened external constraints, leaving countries in the region with daunting debt challenges.
- ▶ **Boosting the reform momentum in times of crisis is critical but not easy.** Amid weak balance sheets, governments need to implement difficult reforms to guarantee more sustainable fiscal positions in the near future. These reforms would include greater debt transparency, better debt management, and higher efficiency in public spending. For instance, publishing borrowing plans and contingent liabilities and improving recording, monitoring, and reporting systems could help reduce the opacity of countries' debt profiles and foster debt sustainability. Strengthening tax administrations, curbing illicit financial flows, and enhancing public investment management systems—particularly infrastructure governance—would boost the output effect of such investments. These reforms could have a huge pay-off but will require significant efforts.

Sound Policies Are Needed to Pave the Road to Recovery

- ▶ **A desired road to recovery is one that delivers jobs and economic transformation, which are the keys to sustained, inclusive, and resilient growth.** Creating more, better, and inclusive jobs can be achieved through digital transformation, sectoral reallocation, and spatial integration. Countries must expand digital infrastructure and make connectivity affordable, reliable and universal across Africa. Shifting resources toward nontraditional economic sectors with higher productivity, lower volatility, and greater value addition and fully leveraging the African Continental Free Trade Area (AfCFTA) will be equally critical. And fostering the reallocation of resources from less to more efficient job-creating locations through enhanced rural-urban and inland-coastal connectivity will be key to creating jobs and economic transformation.
- ▶ **Expanding digital infrastructure and making connectivity affordable, reliable, and universal across Africa hold the promise for inclusive jobs.** The use of digital business solutions is improving the productivity of Sub-Saharan African firms, creating skilled and unskilled jobs, and increasing household welfare. However, the impact of this ongoing digital revolution is curtailed by several challenges. Reforms to address digital infrastructure gaps, affordability (of devices and services), and digital literacy are critical to expand access to digital technologies and reduce the digital divide across gender, firm size, and urban-rural areas. The regulatory environment needs to provide the right incentives for fast digital technology adoption and more competition among mobile operators, including actions to attain universal affordable access to high-quality communications services, support of critical services, and high network resilience (cybersecurity). Digital skills, which rest on foundational human capital, are linked to better opportunities and will be crucial to prevent the exclusion of already marginalized segments of the population from the benefits of connectivity. And adequate analog complements are critical to reap the benefits of the digital economy. Reforms to improve the access to, reliability and uptake of electricity are crucial.

- ▶ **Creating jobs in Sub-Saharan Africa will require a decisive shift from exporting raw materials to greater value addition and intra-Africa value chains.** Reforms to foster market contestability, foreign trade, and foreign direct investment, as well as participation in global value chains, could expose African firms to greater competition. However, as global trade takes time to recover, policy makers in the region need to promote the development of regional value chains while they build the foundations and capabilities needed for a more comprehensive continental involvement. The AfCFTA has an important role to play by reducing the production costs associated with tariffs, non-tariff barriers, and trade facilitation problems. Regulatory reforms and capacity building in the institutions that enforce the treaty's obligations are critical.
- ▶ **Enhancing rural-urban and inland-coastal connectivity and investing in cities will raise agricultural productivity and reallocate resources to more efficient job-creating locations.** Well-functioning cities are the cradle of innovation and the higher productivity tradable industrial and service sectors. Boosting agricultural productivity and improving living conditions in rural areas—including food security—will play a critical role. Digital platforms offer producers and consumers greater connectivity, improve efficiency, and lead to greater transparency in the food logistics system. And investment planning across urban and rural areas requires scaling up infrastructure spending—particularly, enhancing access to basic infrastructure services.

African Countries Are Seizing the “Opportunity” from COVID-19

- ▶ **If there is a silver-lining in the global COVID-19 catastrophe, it is the increased awareness of the paramount importance of the digital economy, and many African countries are seizing this opportunity.** The pandemic has clearly established that the digital economy can enable governments, businesses, and society during times of social distancing. Evidence shows that at the height of the lockdown, 25 percent of the firms in Sub-Saharan Africa accelerated the use of digital technologies and increased investments in digital solutions in response to COVID-19. Governments have partnered with the private sector to deliver online services, such as public health information and e-learning, and ease the use of digital payments. From the onset of the health crisis, governments and mobile operators have focused on reducing the prices of devices and services, avoiding disconnections for lack of payment, and increasing bandwidth. These measures have been complemented by actions to facilitate network expansion and reduce congestion, such as adopting new technologies (for example, Google Loon in Kenya and Mozambique) and temporary release of additional spectrum to boost internet efficiency (Ghana, South Africa, and Zambia). Digital campaigns have played a role in raising awareness and mobilizing people in Namibia, South Africa, and Togo. In Ethiopia, as government and private sector moved to remote working arrangements due to Covid-19, the government fast-tracked the approval of the e-Transactions proclamation which establishes a National Digital Economy Council and provides the legal basis for use of electronic messages and documents in interaction with the government and business.
- ▶ **Digital technologies are helping to boost agricultural productivity in Africa.** By providing farmers access to information on weather, available technologies (improved seeds, fertilizers, and tractors), and how to use them efficiently, digital technologies are facilitating their adoption. In several African countries, including Kenya, Rwanda, and Nigeria, digital technologies are helping to improve farmers' access to upstream and downstream markets by facilitating price discovery, improving buyer-seller matches, and digitally enabling collective action to increase farmers' inclusion and bargaining power in agri-food value chains. Quality control and traceability throughout the food supply chain can also be enhanced by digital technologies, as evidenced by the Namibian Livestock Identification and Traceability System.

- ▶ **African countries are strengthening their public health systems.** While there remains huge uncertainty, the rates of infections and deaths in the region have not been as high as previously anticipated. As of end-September 2020, the region had one confirmed case for every 1,000 people and about 25,000 deaths. These relatively low numbers can be partly explained by governments that have acted rapidly, followed science, and incorporated innovative solutions. Drawing from the lessons of previous epidemics, African countries implemented effective communication strategies as well as a series of stringent containment measures. Still, the health crisis is not over, and governments need to continue running public health campaigns and strengthening public health systems, to avoid relapses and prevent the spread of future pandemics.
- ▶ **African countries are strengthening their social protection systems by leveraging digital technologies.** As the COVID-19 pandemic affected lives and livelihoods, governments across the region implemented unprecedented emergency relief measures to alleviate the impact on their populations. By mid-September, 46 countries had put in place 166 social protection measures—with social assistance programs representing 84 percent of these measures. Digital technologies have expanded the coverage of social safety nets and protected beneficiaries amid social distancing requirements. Countries have used different approaches to deliver scaled-up payments, including mobile money accounts in Togo’s “Novissi Program” and e-wallets in Namibia, among others. Digital payments were also spurred by lowering transaction charges, as in Rwanda and Kenya.
- ▶ **Some African countries are accelerating the structural reform agenda.** South Africa recently announced sweeping reforms to address energy shortages and reduce its dependence on the state public utility, Eskom. Private companies have been invited to submit bids to supply additional renewable energy, municipalities can directly procure electricity from private sector renewable energy producers, and businesses are allowed to produce electricity for their own use. In Nigeria, the government has taken important steps to reform its subsidy regime. It has eliminated the gasoline subsidy and established a market-based pricing mechanism with no price ceilings. The Ethiopian government continues making progress on deregulation of telecommunications. In May 2020, the government issued a call for “expressions of interest” for new telecommunications licenses.
- ▶ **In East Africa, there are signs that intraregional trade might be increasing in response to the COVID-19 pandemic.** The COVID-19 pandemic led to an unprecedented disruption in global trade as worldwide consumption and production scaled down. The World Trade Organization estimates that the volume of global merchandise trade shrank by 18.5 percent year-on-year in the second quarter of 2020 at the height of the lockdown measures. Countries in the region with higher exposure to global trade, particularly commodity exporters, suffered the biggest blow from the pandemic. Intra-African trade has been historically low, but it has been gradually rising since prior to COVID-19. Most of the intra-African trade flows typically take place within the region’s Regional Economic Communities (RECs), thanks to lower tariffs among member countries. In the East African Community, the pandemic seems to have catalyzed greater trade flows. Kenyan exports to the rest of the East African Community have recovered rapidly. Exports to Uganda and Rwanda already surpassed their pre-COVID-19 highs, and re-exports to Tanzania sharply accelerated by July. Full implementation of the AfCFTA can play a role in further expanding intraregional trade. Addressing tariffs, non-tariff barriers, and trade facilitation problems across countries in the region may help foster inter-REC trade. The AfCFTA can also help promote regional value chains and organize production across countries in the region.

Role for the International Community

- ▶ **Sub-Saharan Africa needs ample financing from the international community for investments in human capital, energy, and digital and physical infrastructure.** Countries in the region have very limited fiscal space. Fiscal deficits in the region will widen, on average, by 3.5 percentage points of GDP in 2020—a paltry figure compared to the deficit expansion in the United States (9.7) and the Euro Area (6.8). Therefore, prospects for a sustained and resilient recovery are limited without external financial assistance—including increased grants and concessional financing. Contributing to these investments in Sub-Saharan Africa would be providing a global public good. The region is the home of the largest number of countries in fragility and conflict situations, some driven by religious extremism. And COVID-19 may worsen the situation. It is crucial to address these issues before they turn into regional and global security threats. The region is also potentially a large market for global trade and investments. It has established the largest free trade area in the world in terms of membership—a market of 1.3 billion people and US\$3.4 trillion in economic activity. And by 2050, the region will account for one-third of the global labor force. Africa's youth will drive labor demand and serve as an engine of global growth in the future.
- ▶ **Greater access to concessional official finance will be needed.** The Debt Service Suspension Initiative (DSSI) to grant debt service suspension to the poorest countries, to help them manage the impact of the pandemic, has provided a welcome respite for some countries. However, so far, participation in the DSSI has led to small potential savings for African countries (US\$5.2 billion for participating countries), while fears of downgrading by rating agencies in the event of private creditor participation are engendering coordination problems. Given the nature of the COVID-19 shock, greater access to concessional official finance will be needed to help low-income countries in the region navigate a path through the crisis that protects the economically vulnerable without jeopardizing recovery and growth.

Section 1: Recent Trends and Developments

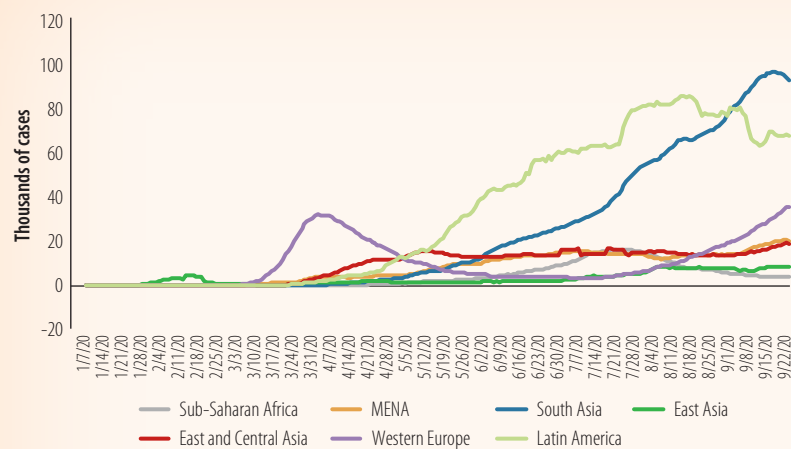
1.1 GLOBAL TRENDS

The COVID-19 pandemic continues to spread around the world, inflicting a substantial toll on economies and societies.

The number of confirmed cases of COVID-19 has surpassed 33 million globally, with more than one million deaths. New cases are accumulating at a rate of more than 300,000 per day, with particular concentrations in Latin America, India, South Africa, and the Russian Federation among emerging markets and developing economies (EMDEs) and the United States among advanced economies (figure 1.1). Government containment measures have eased modestly since April in most countries, but new waves of infections have forced some countries to reintroduce controls, while the risk of flare-ups has prevented other countries from returning to normal (figure 1.2).

In addition to the unprecedented health crisis, the world is in the midst of the deepest global recession since World War II. The World Bank's June *Global Economic Prospects* report forecasted that the global economy would shrink by 5.2 percent this year, with activity in EMDEs falling by 2.5 percent—their first contraction in at least 60 years. The global economy suffered an unprecedented and synchronized collapse in activity in the first half of the year, with many countries experiencing double digit contractions in activity, led by weakness in services consumption. In China, the first country to be affected, activity fell 6.9 percent year-on-year in the first quarter of 2020. In the second quarter, activity plummeted 9.1 percent in the United States and 14.7 percent in the euro area year-on-year, primarily reflecting declining

FIGURE 1.1: Daily New COVID-19 Cases

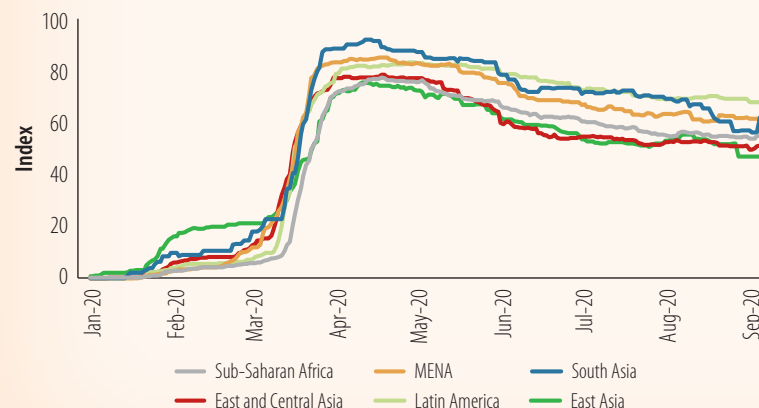


New COVID-19 cases continue to rise at a strong pace, especially in large emerging markets.

Sources: Johns Hopkins University; World Bank

Note: The figure shows the seven-day moving average of new cases. The last observation is September 23, 2020.

FIGURE 1.2: Stringency Index, by Region



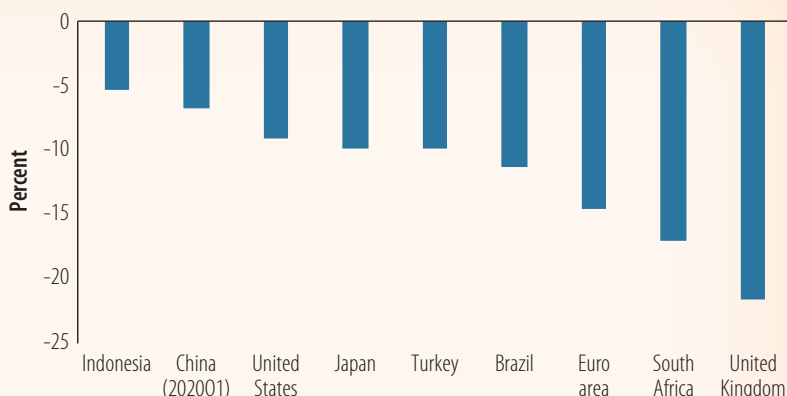
New waves of infections, or a fear of them, are preventing authorities across the globe from lifting containment measures.

Source: University of Oxford

Note: The Stringency Index ranges between 0 and 100, with 100 being most stringent.

The global economy experienced an unprecedented and synchronized collapse in activity in the second quarter of 2020, with double digit contractions in output in some countries.

FIGURE 1.3: Real GDP Growth in Advanced Economies and EMDEs, 2020Q2

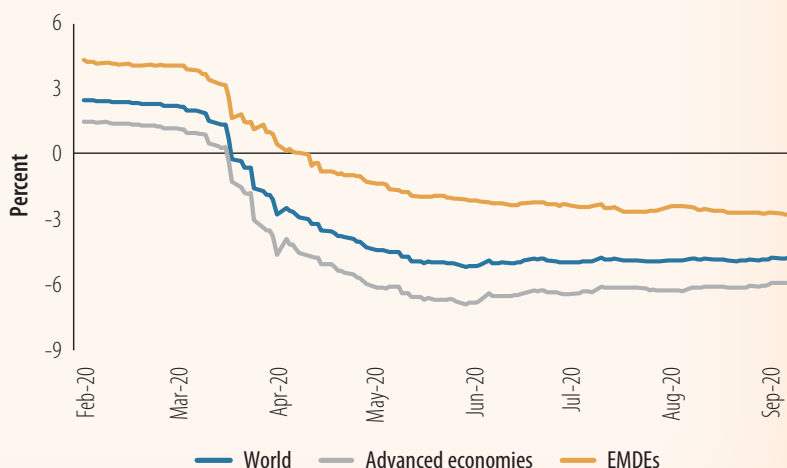


Sources: Haver Analytics; World Bank.

Note: Year-on-year growth rate for 2020Q2 for all countries except China, which is for 2020Q1. EMDEs = emerging markets and developing economies; GDP = gross domestic product.

The consensus growth forecasts reflect a marked stabilization in global activity in recent months.

FIGURE 1.4: Consensus Forecasts of GDP Growth in 2020



Sources: Consensus forecasts; World Bank.

Note: The figure shows consensus forecasts of GDP growth in 2020 for the world, advanced economies, and EMDEs. EMDEs = emerging markets and developing economies; GDP = gross domestic product.

personal consumption, but with exports and business investment also falling. Other countries have experienced similarly unprecedented declines. Gross domestic product (GDP) growth was down 11.4 percent year-on-year in Brazil, 9.9 percent in Turkey, 17.1 percent in South Africa, and 18.7 percent in Mexico (figure 1.3).

Economic data have followed a similar pattern in many countries, with a precipitous initial contraction followed by a rebound that is initially strong, but that decelerates well before regaining the pre-pandemic level. China's economy led the rebound, growing by 3.2 percent year-on-year in the second quarter, while industrial production rose 5.6 percent year-on-year in August. Activity in many other countries remains depressed. In July, industrial production was down 10.4 percent in

India, 11.3 percent in Mexico, 14.8 percent in the Philippines, and 10.6 percent in South Africa. On aggregate, there has been a marked stabilization in global activity in recent months, as is apparent in the consensus growth forecasts (figure 1.4). Global industrial production and trade rebounded in June and July, but they remain about 5 percent below their highs at the end of last year. Incoming mobility data suggest that the pace of the recovery is already slowing in many countries as COVID-19 cases rise and the impact of fiscal stimulus on growth fades. Workplace mobility is particularly constrained for many countries in the Latin America and the Caribbean and South Asia regions, with some countries remaining a third or more below normal levels.

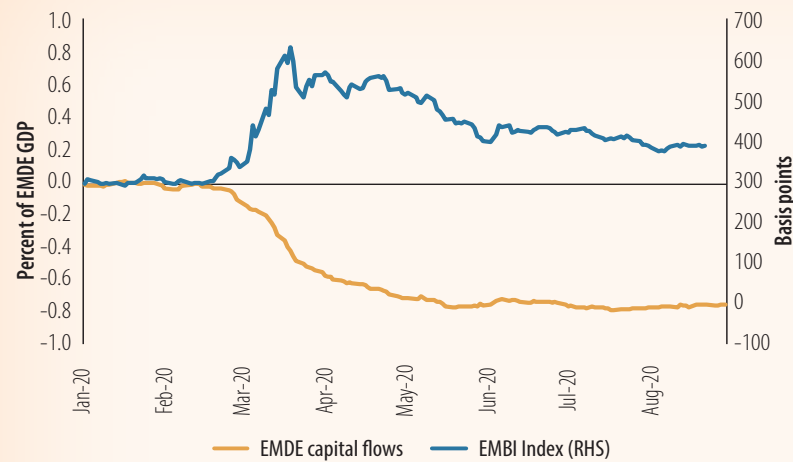
Vulnerabilities in financial markets have increased substantially as a result of the global pandemic, with central bank easing playing an important role in maintaining stability. After a sharp correction at the beginning of the year, global equity markets have generally regained their pre-pandemic levels despite lower corporate earnings. Many advanced economies' borrowing costs remain at or

near record lows, helping to finance a substantial increase in deficits. A frantic flight to safety in March led to severe capital outflows and a sharp rise in borrowing spreads for EMDEs, which was alleviated by rapid policy support from central banks. Despite this, a degree of risk aversion and sharply higher deficits and debts in EMDEs mean that spreads remain higher than at the start of the year (figure 1.5).

Most commodity prices bounced back in recent months, although the recovery has been uneven (figure 1.6). The price of Brent crude oil fell from about \$60 per barrel (bbl) at the beginning of the year to below \$20/bbl in April, before rising to \$44/bbl in August. However, oil prices have faltered in recent weeks amid uncertainty about the strength of the recovery in demand. The International Energy Agency

expects oil demand to fall by nearly nine million barrels a day (b/d) in 2020, a 0.4 million b/d downward revision compared with its August forecast. The Organization of the Petroleum Exporting Countries (OPEC) and its partners tapered cuts as expected in August, reducing their production cuts by two million b/d; however, the group aims to improve compliance with cuts and thereby limit the total impact of the taper on supply. Oil prices averaged a little above \$40/bbl during August-September and are expected to remain close to their current levels into 2021. The prices of base metals have recovered and are now above their January levels, boosted by infrastructure stimulus in China and, for copper, by COVID-19-related supply disruptions in Latin America. Metals prices are expected to rise slightly in 2021, in line with the expected rebound in global demand. Agricultural prices have been impacted the least by COVID-19. Global food commodity markets are well-supplied. However, food insecurity remains a key concern, especially for low-income countries, and localized price hikes are an ongoing risk, particularly in countries where supply chains have been severely hampered.¹

FIGURE 1.5: Capital Flows and EMBI Spreads

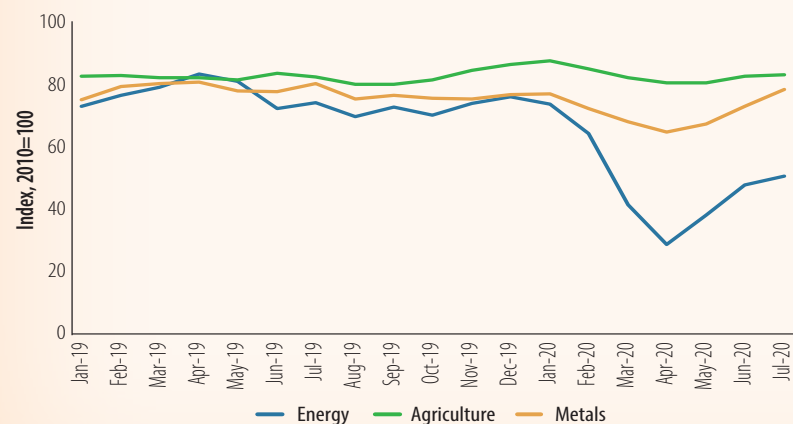


Source: World Bank.

Note: The last observation is August 28, 2020. EMBI = Emerging Markets Bond Index; EMDEs = emerging markets and developing economies; GDP = gross domestic product.

Central bank easing in advanced economies has helped stabilize financial markets, but risk aversion is weighing on the rebound in capital inflows to EMDEs.

FIGURE 1.6: Commodity Price Indices



Sources: Bloomberg; World Bank.

Note: The last observation is August 2020.

After a sharp fall in the second quarter of 2020, commodity prices have bounced back, but the recovery has been uneven.

¹ Recent developments and the outlook for the prices of the main commodities exported by Sub-Saharan African countries are reported in the online appendix.

1.2 RECENT DEVELOPMENTS IN SUB-SAHARAN AFRICA

Evolution of the COVID-19 Pandemic in Sub-Saharan Africa

Since the April 2020 *Africa's Pulse*, the number of infections in Sub-Saharan Africa has increased considerably but new COVID-19 cases have started to decline.

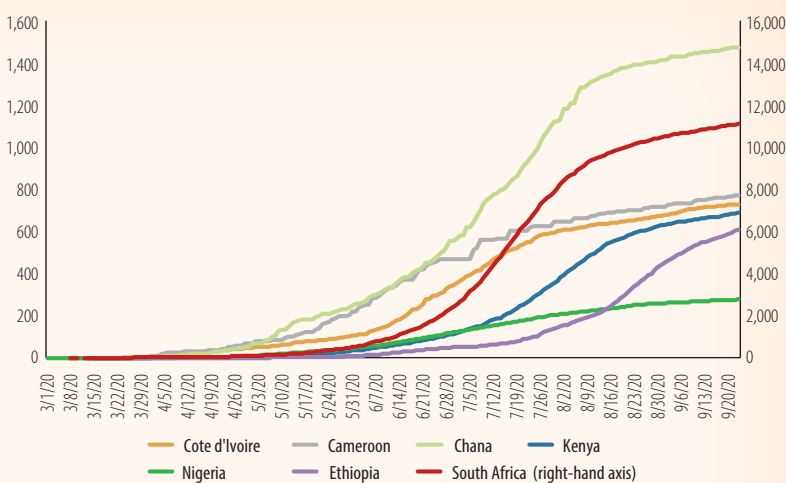
As of September 23, 2020, a cumulative total of 1,116,682 COVID-19 cases have been reported in Sub-Saharan Africa, a rapid increase from slightly more than 5,000 cases in early April.² South Africa accounts for about 60 percent of all reported confirmed cases in the region. The other countries that have reported large numbers of cases include Ethiopia (70,422), Nigeria (57,613), Ghana (46,116), Kenya (37,218), Cameroon (20,598), Côte d'Ivoire (19,343), Madagascar

(16,136), Senegal (14,759), Zambia (14,389), and Sudan (13,578) (figure 1.7). Together, South Africa and these countries account for more than 85 percent of all reported cases in the region. The total number of reported deaths was 24,026, giving an overall mortality rate of 2.2 percent. Five countries—South Africa, Nigeria, Ethiopia, Sudan, and Kenya—accounted for more than 80 percent of the total deaths reported in the region (figure 1.8). Chad (7.5 percent), Liberia (6.3 percent), Sudan (6.2 percent), Niger (5.9 percent), Mali (4.4 percent), Tanzania (4.1 percent), and Angola (3.9 percent) registered the highest country-specific case mortality ratios.

After rising rapidly through July, the number of new daily cases in the region has slowed in recent months, partly reflecting

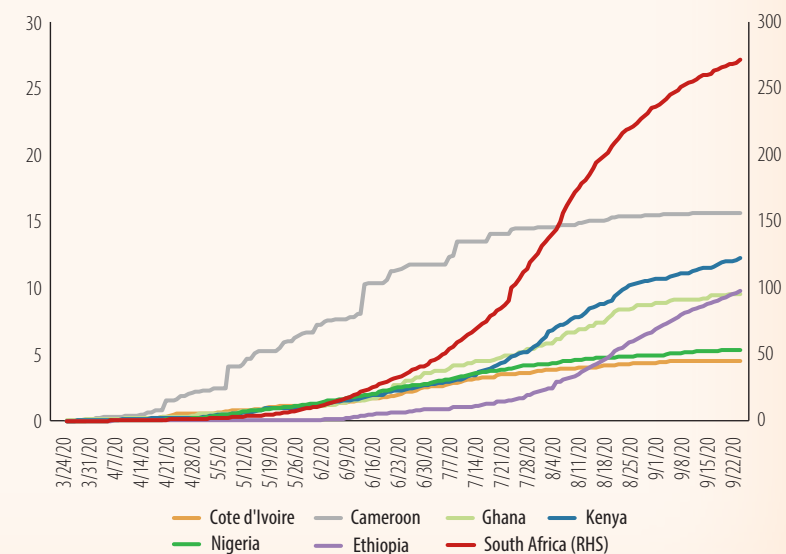
More than one million confirmed COVID-19 cases have been reported in Sub-Saharan Africa.

FIGURE 1.7: COVID-19 Confirmed Cases (per million people)



More than 20,000 COVID-19 deaths have been reported in Sub-Saharan Africa, with a few countries accounting for over 80 percent of the deaths.

FIGURE 1.8: COVID-19 Deaths (per million people)

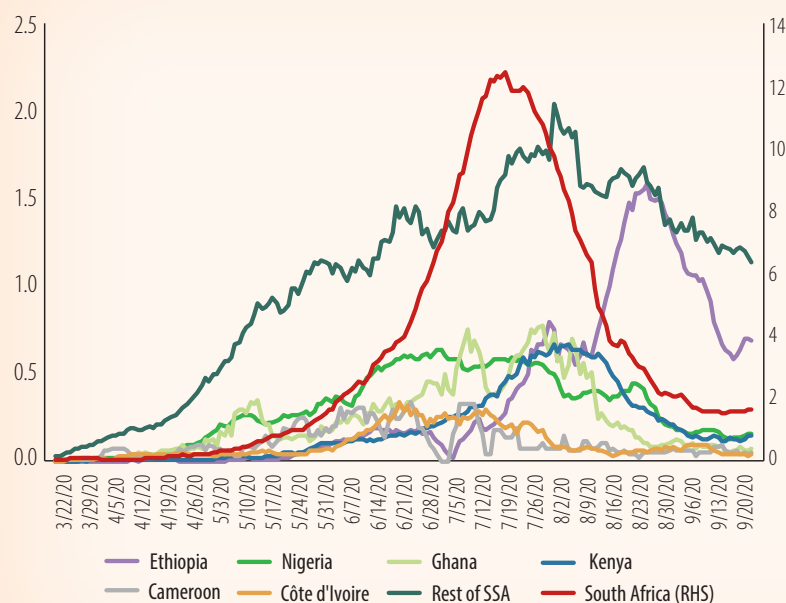


Source: <https://ourworldindata.org/coronavirus>.
Note: Data are as of September 23, 2020.

² Based on Johns Hopkins University data.

the marked decline in daily cases in South Africa, the epicenter of the pandemic in the region (figure 1.9). A total of 29,710 new confirmed COVID-19 cases and 921 new deaths were reported from 46 countries between September 9 and 15, 2020. These were decreases of 14 and 22 percent in new cases and deaths, respectively, as compared with 34,564 cases and 1,773 deaths registered during August 2 to September 8, 2020.³ Overall, despite recent gains, South Africa continues to bear the highest burden of COVID-19 in Sub-Saharan Africa, accounting for nearly half of all new cases, followed by Ethiopia, Nigeria, and Kenya.

FIGURE 1.9: Daily New Cases in Sub-Saharan Africa (thousands)



Following a surge in April, daily new COVID-19 cases dropped across countries in the region.

Source: <https://ourworldindata.org/coronavirus>.
 Note: As of September 24, 2020.

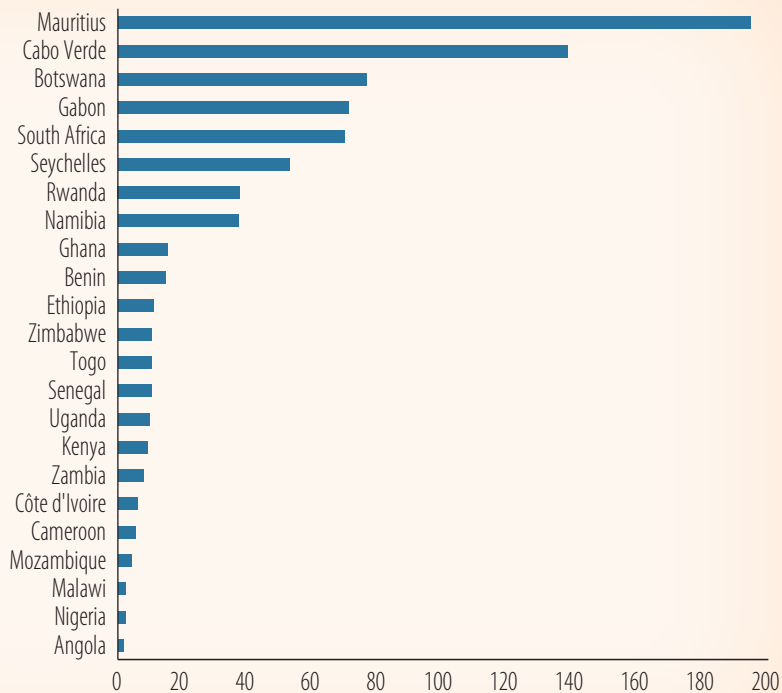
With cumulative cases per million people estimated at 1,007 as of September 15, 2020, Sub-Saharan Africa remains one of the regions least affected by the COVID-19 pandemic. The current figures in the region represent 3.5 percent of confirmed COVID-19 cases and 2.5 percent of deaths reported worldwide. South Africa is ranked eighth globally, although with relatively low numbers of deaths. So far, with the notable exception of South Africa, Sub-Saharan Africa appears to have escaped the worst of the COVID-19 pandemic, which spread quickly from Asia to the Middle East, Europe, Latin America, and the United States during the first half of 2020. Decisive containment measures taken early on may have contributed to the reported low rates of infection and death along with the younger age structure of the population, but great uncertainty surrounds the scale and trajectory of the pandemic in the region.

Although testing has increased in recent months, it is still low compared with other regions and concerns remain that transmission of the virus could be accelerating in some countries. Although testing in the region as a whole is low, there is wide variation in testing across countries (figure 1.10). Only eight Sub-Saharan African countries had conducted more than 200,000 total tests by September, with South Africa and Ethiopia conducting more than one million tests. South Africa has so far conducted about four million tests (more than 67,000 tests per million people) and Ethiopia has conducted nearly 1.2 million tests (more than 10,000 tests per million people). Nigeria's population is about 207 million people, and the country has only conducted 2,328 tests per million people. Box 1.1 briefly describes some successful health responses to COVID-19 in the region.

³ World Health Organization situation reports for Sub-Saharan Africa.

Despite a recent increase, testing for COVID-19 in the region remains low, but with wide variations across countries.

FIGURE 1.10: COVID-19 Total Tests (per 1,000 people)



Source: Worldometer's COVID-19 data.
Note: As of September 25, 2020.

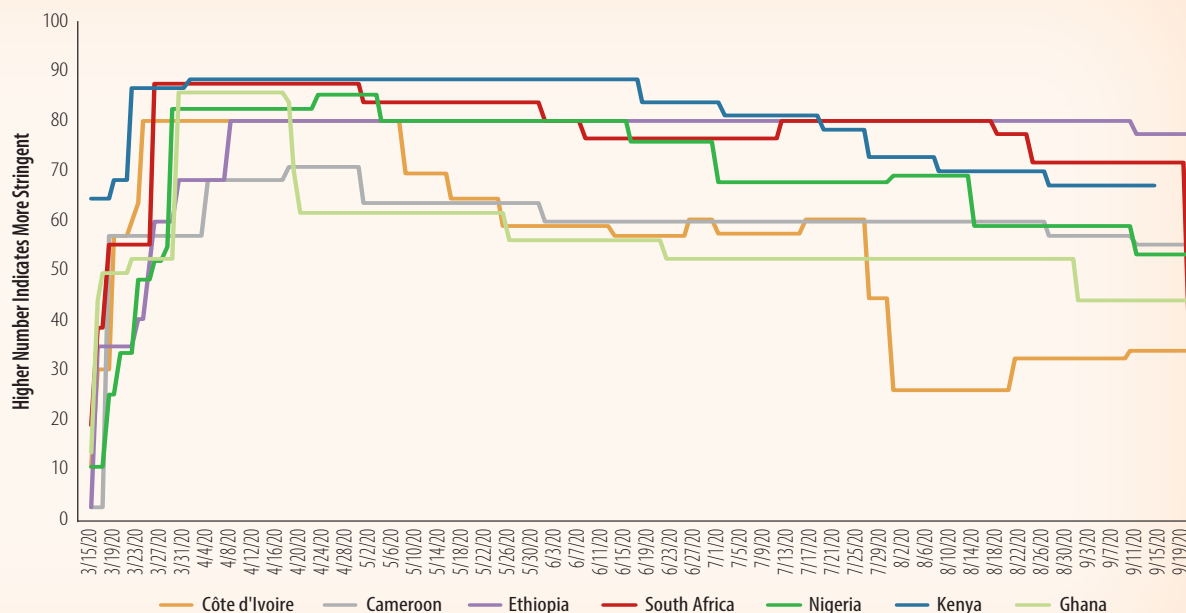
The drop in new cases has encouraged countries across the region to ease restrictions on economic activity.

Since late April, countries across the region have gradually eased the restrictions they had adopted to slow the spread of the COVID-19 virus (figure 1.11). Limited social safety nets, difficulties in reaching the most vulnerable communities, and the need to protect jobs, incomes, and small enterprises prompted the authorities in some countries to lift lockdowns and other restrictions even before infections

had peaked. In recent months, as the epidemiological situation has improved, with new cases dropping, containment measures have eased further. Lockdowns are being lifted, the state of

Countries in the region have eased containment as new COVID-19 cases dropped.

FIGURE 1.11: Stringency Index in Sub-Saharan Africa



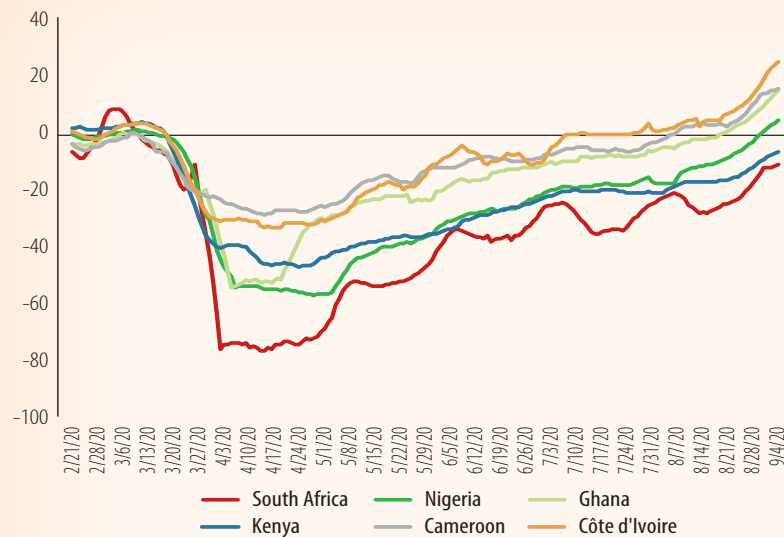
Source: <https://ourworldindata.org/coronavirus>.
Note: As of September 15, 2020.

emergency terminated, and travel restrictions relaxed. Public transportation, places of worship, and bars are resuming their activities. In some countries, the re-opening of schools and borders and resumption of domestic and international flights have been accompanied by protocols for testing and quarantine for new arrivals, continued social distancing guidelines, and mandatory use of masks, among other measures. In a few countries where the authorities are struggling to control new cases, containment measures have remained in place.

As countries started easing restrictions, community mobility recovered gradually.

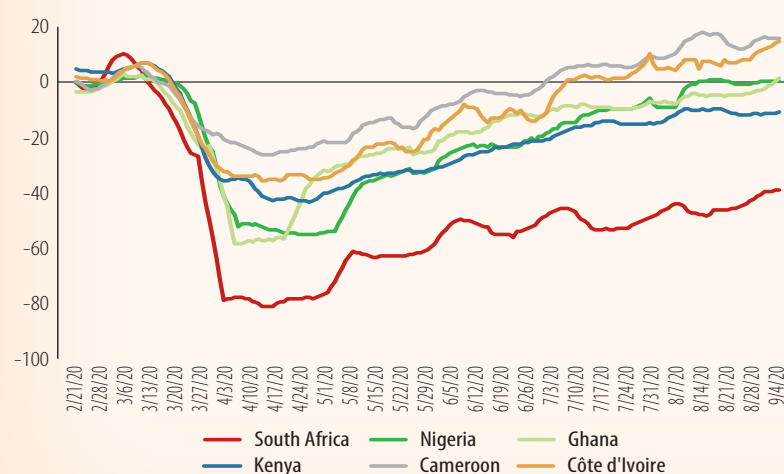
Community mobility toward retail and recreation places, as well as public transportation, declined rapidly as governments implemented containment measures and reached a trough by mid-April. Mobility towards public transportation hubs at the trough was more restricted in South Africa, with declines of 75 and 80 percent, compared with a baseline (no-COVID-19) period. In the same period, community mobility was less restricted in Cameroon and Côte d'Ivoire. Community mobility started to increase gradually even when the daily number of COVID-19 confirmed cases was growing (from May to July). In countries across Sub-Saharan Africa, community mobility continued to surge—particularly to retail and recreation locations—as the number of COVID-19 confirmed cases grew at rapidly declining daily rates since mid-August 2020. By early September, community mobility to recreation and retail places was more than 15 percent above the baseline (no-COVID-19) scenario in Cameroon and Ghana. It is still below that benchmark in Kenya and South Africa (figure 1.12). Community mobility toward public transportation has increased at a slower pace. It was about 15 percent above the baseline scenario by early September, while it is still very restricted (40 percent below the baseline) in South Africa (figure 1.13).

FIGURE 1.12: Community Mobility: Recreation and Retail



Following the relaxation of containment measures, community mobility has increased. As of early September, visits to recreation and retail outlets surpassed pre-COVID-19 levels in several countries.

FIGURE 1.13: Community Mobility: Public Transportation



Community mobility toward public transportation has increased at a slower pace, and South Africa appears to be lagging.

Source: Google COVID-19 Community Mobility Report.
 Note: Data are as of September 11, 2020.

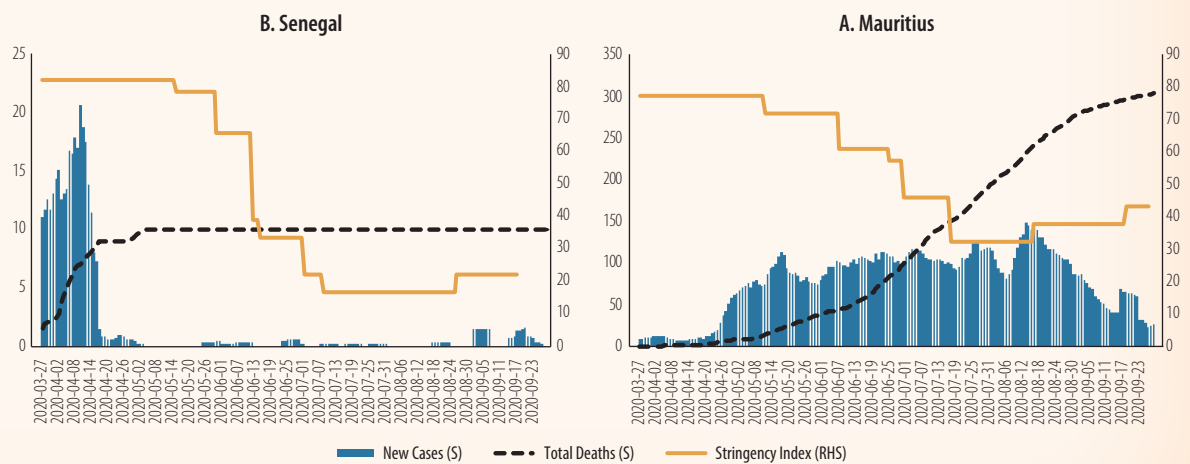
BOX 1.1:
Successful Health Responses to COVID-19: The Cases of Mauritius and Senegal

Africa appears to have held off the worst of the COVID-19 pandemic so far. Although the pandemic is still not under control in the region, there are some cases where governments have been able to reduce the spread of infections. Those governments that have acted rapidly, followed science, implemented effective communication strategies, and incorporated innovative solutions obtained positive results on containing the pandemic. However, successful containment measures come with a high economic cost, as levels of economic activity contracted at a record pace at the height of the lockdown. Experience around the world shows that leadership and citizen compliance are important elements of a successful health strategy, along with having a resource base and high levels of preparation. This box highlights two examples of successful containment measures to fight against the spread of COVID-19: Mauritius and Senegal.

Mauritius

Mauritius has successfully contained the number of infections and deaths from COVID-19, registering no fatalities for almost five months. This is due to the government’s quick response to the health pandemic. The country is still facing the severe economic costs of a sharp decline in economic activity during the second quarter of 2020. For instance, industrial production plunged 40.4 percent year-on-year in 2020Q2. The Government of Mauritius, an island with 1.3 million people, responded rapidly to curb the transmission of the pandemic. In the second half of January, it put in place a series of protocol measures for passengers arriving from abroad—including temperature checks and 14-day quarantines for travelers from high-risk countries. After registering the first three COVID-19 cases by mid-March, the country closed its borders and implemented a full lockdown on March 24. The stringency of the containment measures imposed on the island is reflected in the Oxford COVID-19 Government Response Stringency Index for April and May (figure B1.1.1).

FIGURE B1.1.1: COVID-19 New Daily Cases and Deaths and the Stringency of Containment Measures



Source: Our World in Data.
 Note: New daily cases and total deaths are seven-day averages.

Health services in Mauritius were fully functional, including hotline phone services to respond to the public's queries. Health teams were set up to provide home visit consultations and basic treatment. The mobile application *beSafeMoris*, launched on March 26, enabled citizens to obtain real-time information about health and safety measures. Rapid response teams were formed to transfer patients with COVID-19 to quarantine and treatment centers. Contact tracing teams were responsible for identifying related cases (Kowlessur et al. 2020).

COVID-19 testing also became a priority at the onset of the pandemic. Front-line health workers were regularly tested. People who were asymptomatic and those with compatible symptoms to COVID-19 were tested. The country leads Africa in testing per 1,000 people (193.6), a rate that is comparable to that of Norway and New Zealand. The rapid response from the government and public support and compliance were key to controlling the pandemic. As of September 28, 2020, 343 of 367 confirmed cases in the country had recovered, 10 had died, and 14 cases remained active. The country has not registered any deaths since the end of April.

Senegal

Senegal has successfully reduced the number of cases since the middle of August and slowed the death rate in September 2020. Despite of the country's successful containment measures, economic activity declined during the second quarter of 2020. For instance, industrial production fell by 3.7 percent year-on-year in May. Senegal's strategy to combat the health effects of the pandemic included fast action, clear communication, and learning from the 2014 Ebola lessons. The government prepared contingency plans when COVID-19 was declared an international public health emergency. When the first case was confirmed, the Health Emergency Operations Center was activated. Senegal also declared a state of emergency, enforced a curfew, and suspended domestic and international travel (Travaly and Mare 2020).

Testing capacity was ramped up with mobile labs that returned results within a day (or as fast as two hours in some cases). Innovation played a role in the country's fight against the pandemic. The Institut Pasteur in Dakar developed a diagnostic test for COVID-19 at an affordable cost (US\$1) to be used at home and producing immediate results. Senegalese researchers used 3D printers to manufacture ventilators for as low as US\$160. Hotels were transformed into quarantine units and Senegalese Red Cross volunteers distributed food to people under 14-day quarantine who had been in contact with confirmed cases.

The Ministry of Health provided regular updates on the numbers of infections, fatalities, and recoveries. Temperature checks and bottles of hand sanitizer have been available at every grocery store and restaurant, and citizen compliance has been high. As of September 28, 2020, Senegal has 40 new cases daily—down from about 150 in mid-August (figure B1.1.1). More than 80 percent of the 14,919 confirmed cases have recovered, and 309 have died. Senegal has made extraordinary progress, but the pandemic crisis is still ongoing.

ECONOMIC IMPACT OF THE COVID-19 PANDEMIC

While the COVID-19 pandemic has evolved more slowly in Sub-Saharan Africa than in other regions, it has exerted a sizable toll on economic activity.

The main channels through which the COVID-19 pandemic has impacted economies in Sub-Saharan Africa have been (1) the drop in domestic production resulting from lockdowns and other restrictions on nonessential business operations as countries implemented strict containment measures to limit the spread of the COVID-19 virus, (2) the impact on demand for goods and services as lockdowns decreased household incomes, and (3) the disruption of global trade and its effects on commodity prices and exports. The combination of domestic lockdowns and lower external demand from the global recession weighed heavily on economic activity across the region in the first half of 2020. Activity contracted sharply in many countries in the second quarter of the year, driven on the demand side by lower consumption, investment, and exports and, on the supply side, by large declines in industry and service sector output. The economic effects of the pandemic were particularly pronounced among resource-intensive countries, including South Africa and Nigeria—the region’s two largest economies. At the sub-regional level, East and Southern Africa experienced a larger decline in output as a result of the COVID-19 pandemic than West and Central Africa, due to Southern Africa’s greater dependence on fuel and mineral exports.⁴

East and Southern Africa

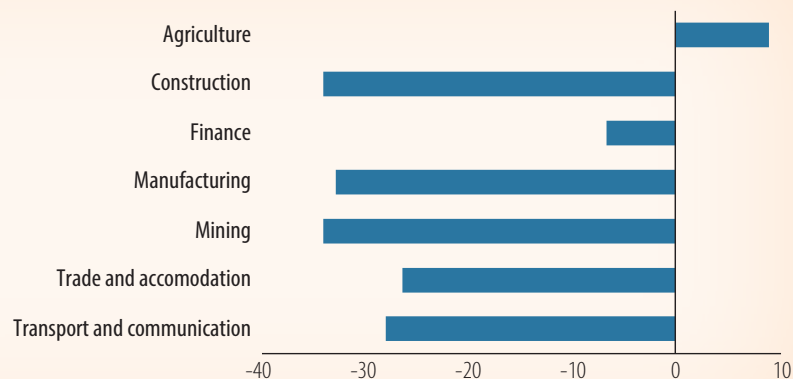
In South Africa, where containment measures were particularly severe, the economy collapsed in 2020Q2. Real GDP contracted by 17.1 percent, year-on-year, following a 0.1 percent year-on-year expansion in 2020Q1. During April-June, the South African economy operated under widespread lockdown restrictions in response to the spread of the COVID-19 virus. The lockdown caused steep output declines across all sectors except agriculture, which expanded (figure 1.14). On the expenditure side, the fall in GDP in the second quarter was driven by strong declines in household consumption, exports, and investment (figure 1.15). The 2020Q2 GDP contraction

also meant that South Africa’s GDP had fallen for four consecutive quarters, prolonging the recession that began in the second half of 2019.

Angola, Sub-Saharan Africa’s second largest oil producer after Nigeria, saw its economy contract by 1.8 percent year-on-year in 2020Q1, hit by the fallout from the COVID-19

In South Africa, lockdown measures caused steep output declines across all sectors except agriculture in the second quarter of 2020.

FIGURE 1.14: South Africa: GDP Growth, Production Side, 2020Q2



Source: Statistics South Africa.

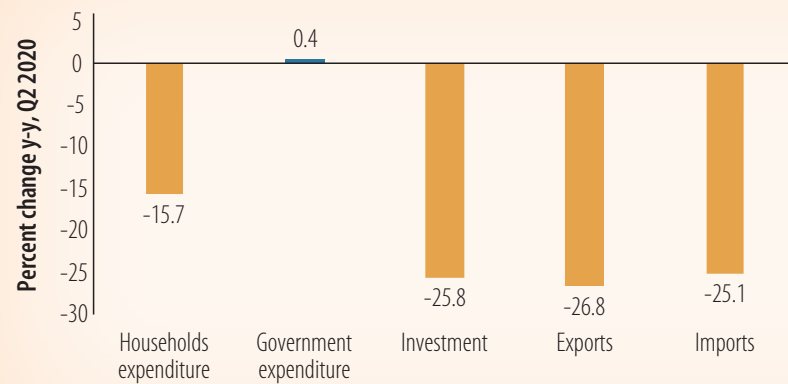
⁴ Since July 2020, for operational purposes, the World Bank Africa Region has been split into two subregions—West and Central Africa and East and Southern Africa. The analysis in this section reflects this setup.

pandemic and the decline in oil prices. Due in part to the OPEC+ quotas, oil production decreased in April and May, followed by a modest rebound in June, suggesting that the economy probably contracted further in 2020Q2. Metals exporters suffered a drop in base metals prices as the pandemic caused a sharp fall in demand from China, which accounts for half of global metals consumption.

While international commodity markets for precious metals held up better than anticipated owing in part to investors' preference for gold as a safe haven, mining production and the non-mining sector, especially transportation and services, were hit hard by the lockdowns. In Botswana, real GDP contracted by 24 percent year-on-year in 2020Q2, following a 2.6 percent year-on-year expansion in 2020Q1. In Namibia, after falling by 1.8 percent year-on-year in 2020Q1, economic activity contracted further by 11.1 percent in 2020Q2 (figure 1.16).

Among non-resource-intensive countries, performance was mixed. In some countries, including Kenya and Ethiopia, which had been growing at a robust pace, activity slowed substantially in 2020Q2 as containment measures to limit the spread of the COVID-19 virus took hold. In Kenya, large contractions in services and industrial production weighed on growth. Ethiopia, in addition to COVID-19,

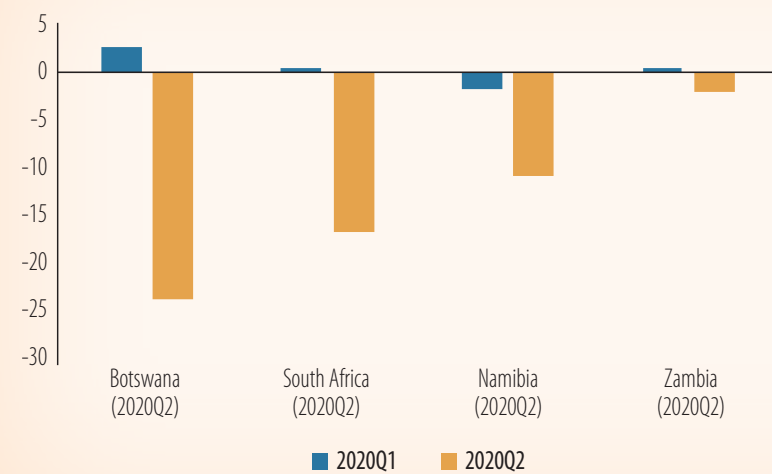
FIGURE 1.15: South Africa: GDP Growth, Expenditure Side, 2020Q2



Source: Statistics South Africa.

On the expenditure side, the GDP contraction in the second quarter of 2020 in South Africa was driven by strong declines in consumption, investment, and exports.

FIGURE 1.16: East and Southern Africa: GDP Growth in Resource-Intensive Countries, 2020Q1-Q2

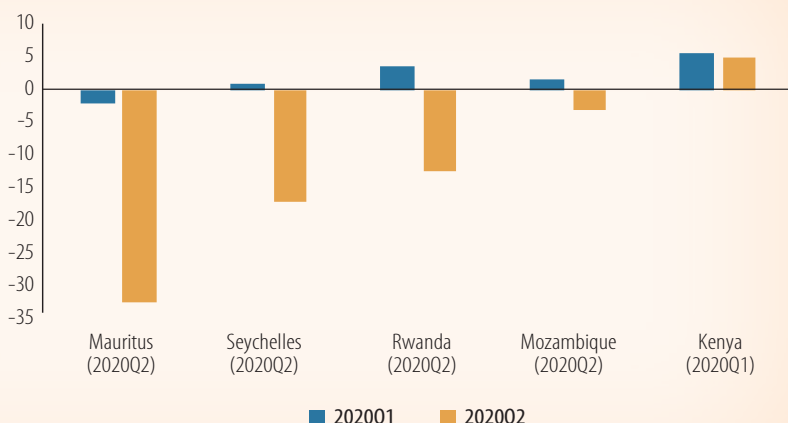


Source: Trading Economics, World Bank.

Resource-intensive countries in East and Southern Africa experienced a sharp contraction in economic activity in the second quarter of 2020.

Among non-resource-intensive countries, those that are relatively more dependent on tourism were severely impacted by the pandemic.

FIGURE 1.17: East and Southern Africa: GDP Growth in Non-Resource-Intensive Countries, 2020Q1-Q2



Source: Trading Economics, World Bank.

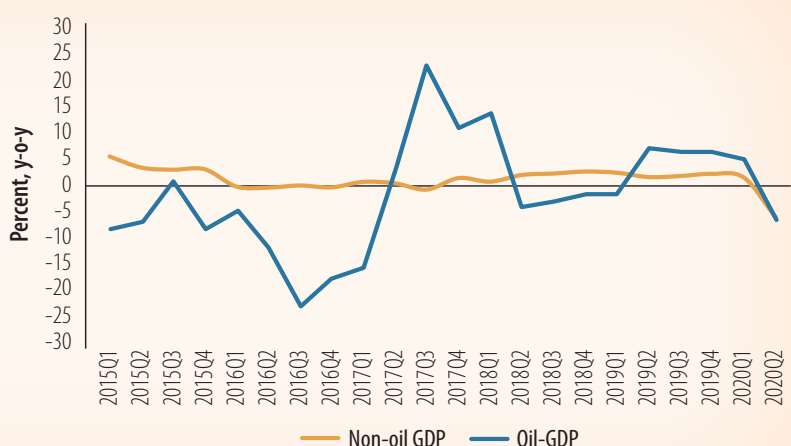
strongly impacted (figure 1.17). Tourism has been hit hard by the pandemic, with a collapse in the number of visitors.

West and Central Africa

The decline in economic activity followed a similar pattern in West and Central Africa, but it was relatively less pronounced, reflecting differences in the extent of containment measures. Nigeria's real GDP contracted by 6.1 percent year-on-year in 2020Q2—the worst result in more than a decade. The contraction, which followed growth of 1.9 percent year-on-year in 2020Q1, resulted from a decline in output in the oil and non-oil sectors (figure 1.18). The oil sector contracted by 6.6 percent year-on-year in 2020Q2, after holding up relatively well in 2020Q1, as crude oil production decreased amid OPEC+ mandated production cuts. Growth in the non-oil sector fell by 6.1 percent

Nigeria's GDP contracted in the second quarter of 2020, with output in the oil and non-oil sectors falling.

FIGURE 1.18: Nigeria: Oil and Non-Oil GDP Growth



Source: Nigeria National Bureau of Statistics

battled a locust invasion amid heightened political uncertainty. While non-resource-intensive countries benefitted from lower oil prices, the prices of their main export commodities, such as coffee and oilseeds, have been adversely affected by the crisis. Countries that are relatively more dependent on tourism, such as Mauritius and the Seychelles, were also

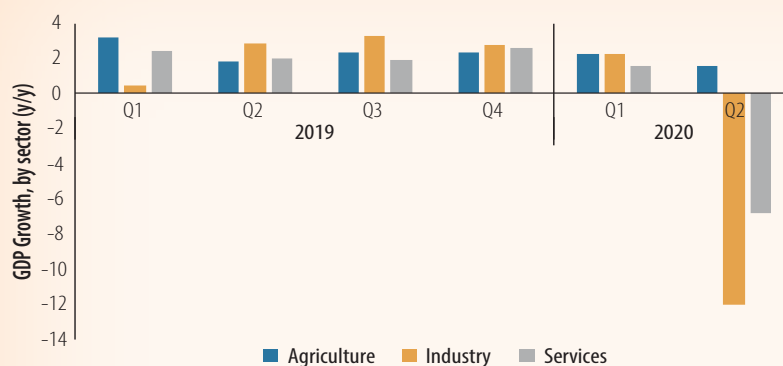
year-on-year in 2020Q2, following a modest expansion of 1.6 percent in 2020Q1, as COVID-19 containment measures hit critical activities such as transportation and storage, accommodation and food services, construction, retail trade, and manufacturing (figure 1.19).

Other resource-intensive countries in the sub-region also experienced a sizable contraction in economic

activity in the second quarter of 2020. Oil exporters—Chad, the Republic of Congo, Gabon, and Equatorial Guinea—all members of the Economic and Monetary Community of Central Africa (CEMAC)—were hit by the fall in oil prices in the first half of the year. Oil production fell and, in

addition, service sector activities were strongly affected by social distancing measures (figure 1.20). Among metals exporters, activity held up in some countries, as gold production remained robust, helping to mitigate the adverse impact of the pandemic on the service sector. However, economic activity was depressed in most metals exporters. In some cases, the effects of the pandemic were accentuated by the loss of nontraditional exports, including fishing, as in Mauritania. Non-resource-intensive countries, which include the fastest growing economies in the West African Economic and Monetary Union (WAEMU) as well as Ghana, performed relatively better in 2020Q1, but all experienced a significant slowdown in activity in 2020Q2 as containment measures were implemented. Ghana's economy shrank 3.2 percent year-on-year in 2020Q2, following a 4.9 percent expansion. Agriculture sector growth partially offset output contractions in the service and industrial sectors (figure 1.21). Among fragile and conflict-affected countries, the COVID-19 shock compounded the security crisis in the Sahel region.

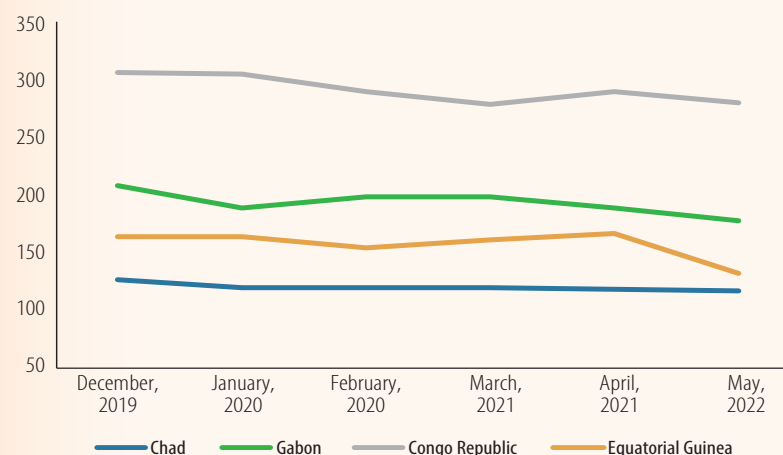
FIGURE 1.19: Nigeria: GDP Growth, by Sector



Source: Nigeria National Bureau of Statistics

In Nigeria, containment measures to limit the spread of COVID-19 hit industry hard.

FIGURE 1.20: West and Central Africa: Oil Production in CEMAC Countries

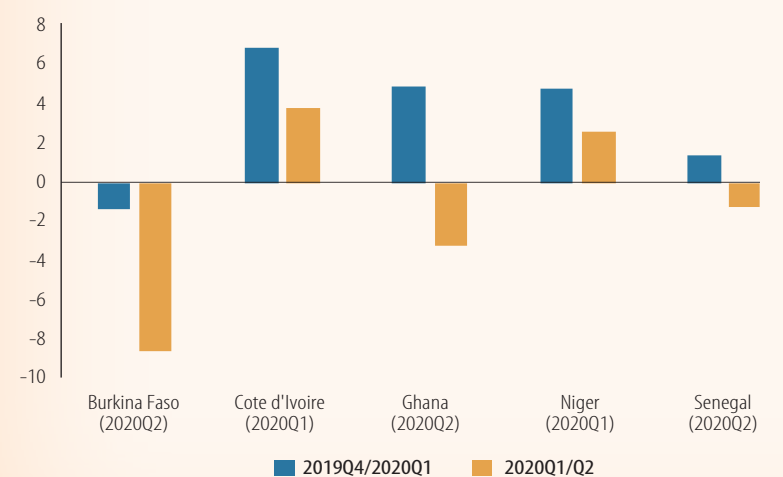


Source: Trading Economics.

Note: CEMAC = Economic and Monetary Community of Central Africa.

Oil production fell among oil exporters in the Economic and Monetary Community of Central Africa.

FIGURE 1.21: West and Central Africa: GDP Growth in Non-Resource-Intensive Countries, 2020Q1-Q2



Source: Trading Economics.

Note: GDP = gross domestic product.

The impact of COVID-19 on non-resource-intensive countries in West and Central Africa has been mixed, but activity contracted in some countries in the second quarter of 2020.

Survey data suggest that the economic contraction in the region in the first half of 2020 has been bottoming out, but the recovery remains subject to significant uncertainty.

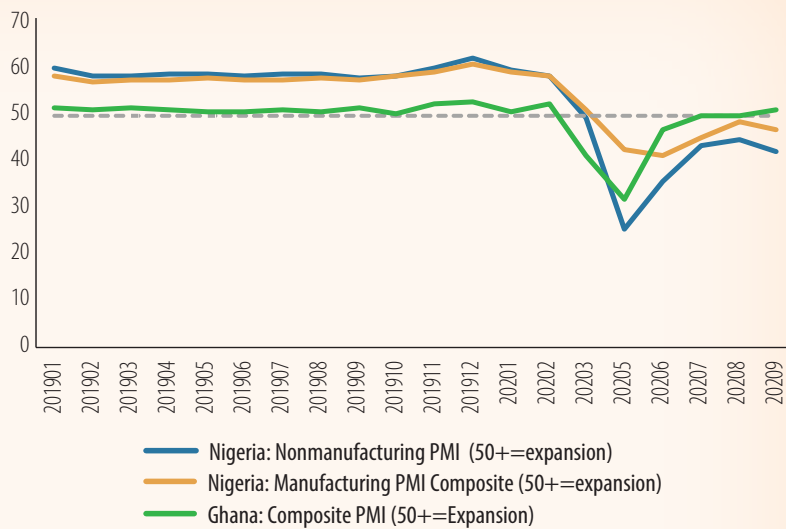
High-frequency indicators, including the Purchasing Managers Index (PMI), point to a rebound in economic activity in the region at the start of 2020Q3, as demand improved following the easing of COVID-19 containment measures in many countries. However, the rebound has been moderate and uneven. In West and Central Africa, Nigeria's PMI readings in September were still below the 50-point mark, which denotes contraction. The Central Bank of Nigeria's manufacturing and non-manufacturing PMIs for September suggest that economic activity

remained subdued at the end of 2020Q3. After rising from 44.9 in July to 48.4 in August, the manufacturing PMI decreased to 46.9 in September, while the non-manufacturing PMI was at 41.9 in September, down from 44.7 in August, as production and new orders fell. Among other countries in the subregion with survey data, Ghana's economywide PMI rose from 49.7 in July to 51.2 in August, indicating that a moderate recovery in private sector activity was underway, with growth of new orders supporting expansion in business activity and employment (figure 1.22). In Côte d'Ivoire, industrial production picked up, although the expansion in manufacturing production has been slower (figure 1.23).

In East and Southern Africa, output and confidence data signal a moderate rebound in South Africa after the large GDP contraction

The PMI points to a modest and uneven recovery among countries in West and Central Africa in the third quarter of 2020.

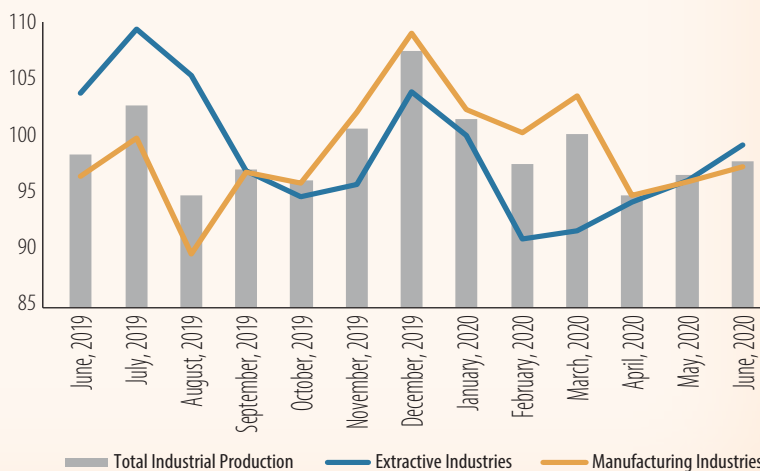
FIGURE 1.22: West and Central Africa: Nigeria and Ghana: PMI



Sources: Central Bank of Nigeria; Trading Economics.
Note: PMI = Purchasing Managers Index.

Industrial production picked in Côte d'Ivoire, but the expansion in manufacturing production has been slower.

FIGURE 1.23: West and Central Africa: Côte d'Ivoire: Industrial Production

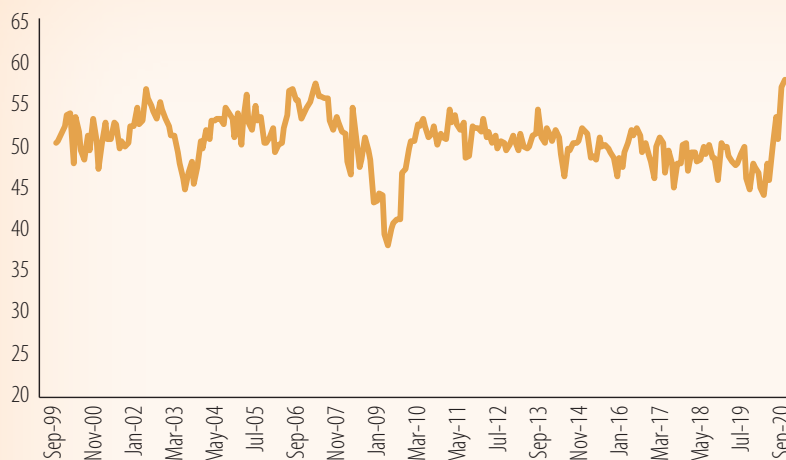


Source: Côte d'Ivoire National Institute of Statistics.

in 2020Q2. The Absa PMI registered a solid increase to 58.3 in September, up from 57.3 in August, indicating further improvement in conditions in the manufacturing sector after COVID-19 lockdown restrictions eased to level 2 in August (figure 1.24). Following a decline to an all-time low in 2020Q2, the business confidence index rebounded in 2020Q3 (figure 1.25). Similarly, the consumer confidence index recovered some lost ground in 2020Q3 as the gradual lifting of restrictions and the resumption of economic activity allowed consumers to return to work and government transfers helped bolster households' financial conditions (figure 1.26).

Although high-frequency indicators generally show a pickup in economic activity from extremely low levels in April and May, getting back to pre-pandemic output levels will likely take time. South Africa's economy remains fragile. Business and consumer confidence is still heavily depressed. Despite a third consecutive monthly increase, manufacturing production was still down by 10.6 percent year-on-year in July. Similarly, despite a solid 20 percent monthly increase, mining production

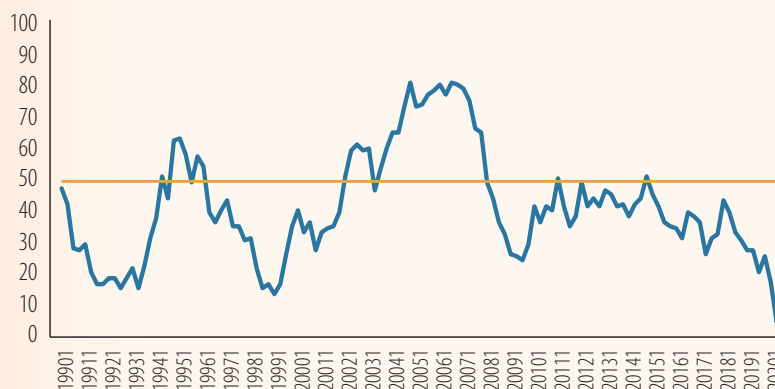
FIGURE 1.24: East and Southern Africa: South Africa: Manufacturing PMI



Source: Bureau for Economic Research, South Africa.
Note: PMI = Purchasing Managers Index.

In South Africa, the manufacturing PMI points to a rebound in economic activity in the third quarter of 2020, following the sharp GDP contraction in the second quarter.

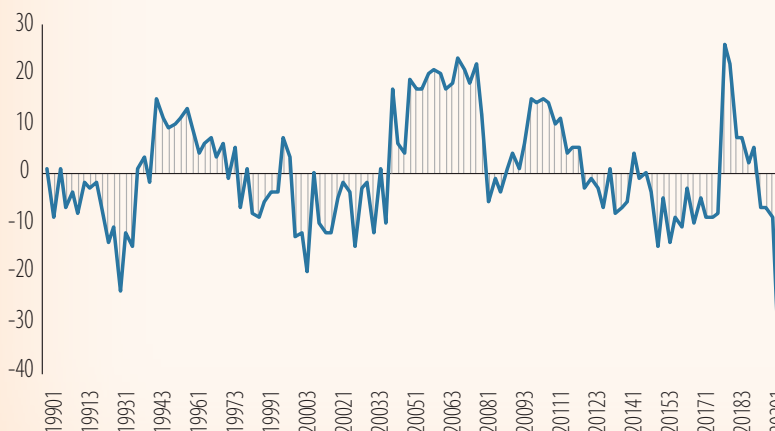
FIGURE 1.25: East and Southern Africa: South Africa: Business Confidence Index



Source: Bureau for Economic Research, South Africa.

Business confidence in South Africa rebounded in the third quarter of 2020.

FIGURE 1.26: East and Southern Africa: South Africa: Consumer Confidence Index

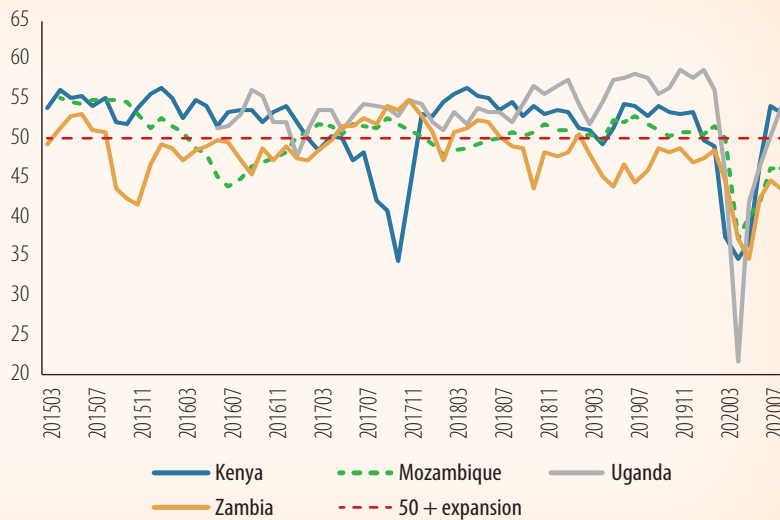


Source: Bureau for Economic Research, South Africa.

Consumer confidence in South Africa also rose in the third quarter of 2020 after a sharp drop in the second quarter.

Outside South Africa, the PMI data highlight mixed conditions in the private sector among countries in East and Southern Africa.

FIGURE 1.27: East and Southern Africa: Composite PMIs



Source: Haver Analytics.

Note: PMI = Purchasing Managers Index.

decreased by 9.1 percent year-on-year. Retail sales have been weaker than expected and new vehicle sales contracted sharply in August, suggesting that households remain under pressure as they grapple with the COVID-19 shock. With electricity production slowing, continued load shedding could dampen the nascent recovery.

Outside South Africa, the available economywide PMI data highlight mixed conditions in the private

sector (figure 1.27). In Kenya, the PMI rose from 46.6 in June to 54.2 in July before moderating to 53.0 in August. Notably, export orders picked up, as the reopening of international travel supported an uplift in tourism. However, the employment subcomponent indicated that firms are scaling back on wage costs. Weaker jobs growth highlights the underlying challenges to a sustained recovery, even as business confidence has improved in recent months. In Uganda, the headline PMI jumped from 50.3 in July to 54.6 in August, the highest reading since prior to the COVID-19 outbreak. By contrast, in Zambia, customer demand remained weak in 2020Q3, contributing to a further reduction in business activity. The PMI fell to 43.4 in August from 44.6 in July, reflecting the weakness in investment demand. In Mozambique, the headline PMI dipped from 46.2 in July to 46.1 in August, indicating continuing contraction in private sector activity.

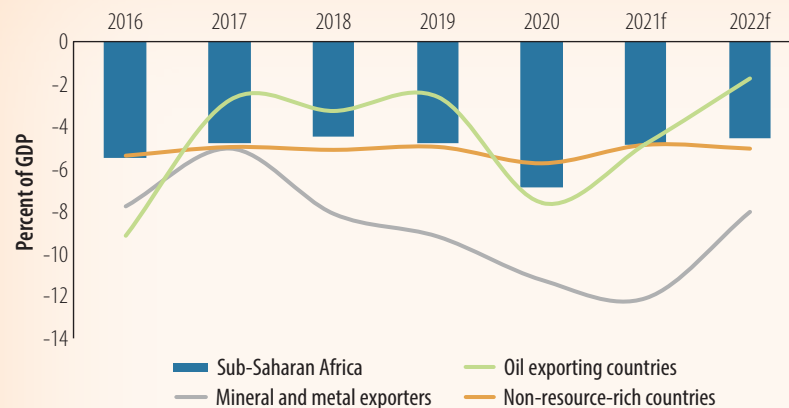
External positions are expected to improve gradually as commodity prices and exports recover slowly.

Weak external demand and low commodity prices worsened the external positions of countries across the region in the first half of 2020, giving rise to significant balance of payments financing needs. Commodity prices have been gradually recovering from their lows in the second quarter of 2020. Brent crude oil prices averaged \$42 per barrel in the first eight months of 2020 and rose notably over the past two months, supported by relatively high compliance with OPEC+ reductions and partial recovery in global demand. However, crude oil prices are subject to considerable variation due to the uncertainty about the evolution of the pandemic. Base metals prices rallied in July and August, driven in part by a robust recovery in China and the decline in output due to mine closures in Latin America following a pickup in COVID-19 outbreaks.

Sub-Saharan Africa's median current account deficit is expected to widen from -4.8 percent of GDP in 2019 to -6.9 percent of GDP in 2020, the highest since the 2014 commodity price shock, before moderating to -4.9 percent of GDP in 2021 as commodity prices firm and a recovery in external demand helps boost exports (figure 1.28). However, the extent of the improvement will vary across country groups.

Across the subregions, oil exporters are expected to see a significant fall in their current account deficits (figure 1.29), as exports recover from their sharp contraction in 2020, supported by higher crude oil production and stable prices. However, although improving, current account deficits among oil exporters in the CEMAC region are expected to remain well above their 2019 levels, suggesting that these countries will continue to face significant balance of payments constraints in 2021. Among metals exporters, the current account deficit is expected to widen in 2021 before narrowing in 2022. Current account deficits among metals exporters in West and Central Africa are projected to remain particularly elevated, partly due to the resumption of import-intensive mining projects that had been postponed in response to the COVID-19 pandemic and also because of the slower recovery of exports (figure 1.30). Among non-resource-intensive countries, the current account deficit is expected to narrow on the back of a robust rebound in exports. This improvement will be led by countries in the West and Central Africa subregion as they see exports pick up following a sharp contraction in 2020.

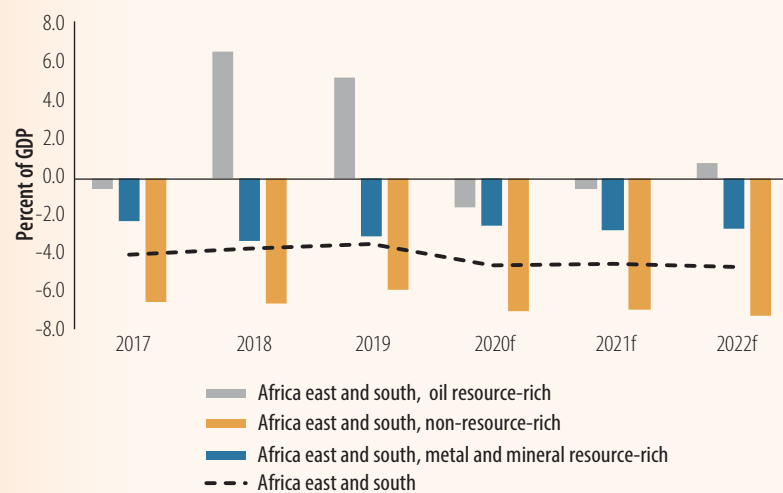
FIGURE 1.28: Sub-Saharan Africa: Current Account Balance (% of GDP)



Source: World Bank.

Sub-Saharan Africa's median current account deficit is projected to rise to close to 7 percent of GDP in 2020, the highest level since the 2014 commodity price shock

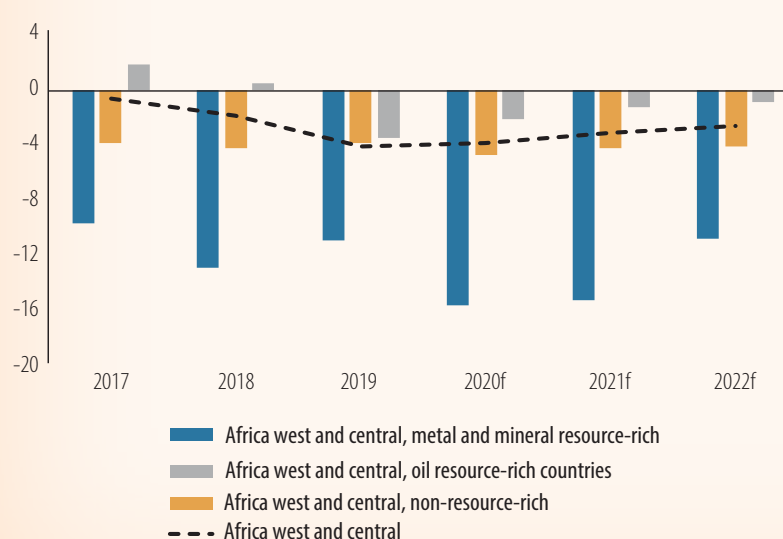
FIGURE 1.29: East and Southern Africa: Current Account Balance (% of GDP)



Source: World Bank.

Oil exporters are expected to see a significant improvement in their current account balances in 2021 as crude oil prices stabilize and oil production increases.

FIGURE 1.30: West and Central Africa: Current Account Balance (% of GDP)



Source: World Bank.

Current account deficits are expected to remain elevated among metals exporters in West and Central Africa partly due to the resumption of import-intensive mining projects.

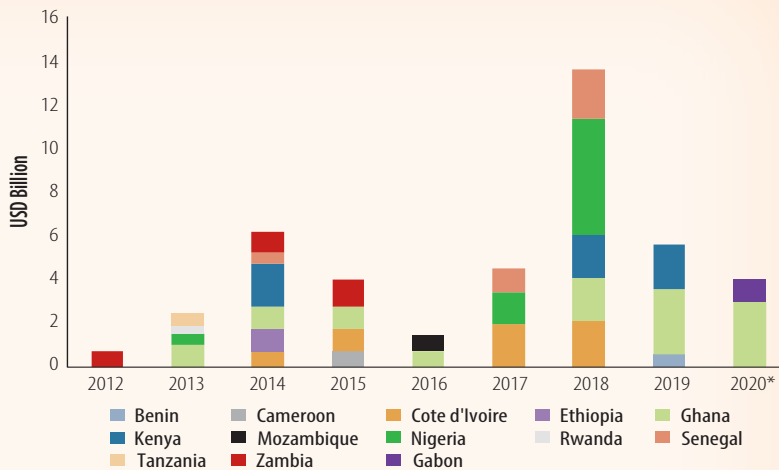
External financing conditions remain difficult.

Countries in the region continue to see private capital inflows slow (figure 1.31). In the first half of 2020, Eurobonds issued in the region, mainly by Gabon and Ghana, totaled US\$4 billion. In February, Gabon issued a US\$1.0 billion, 11-year maturity Eurobond with a 6.6 percent coupon rate. Ghana issued three Eurobonds totaling US\$3.0 billion in February-March. First, on February 11, it issued two Eurobonds of 7 and 15 years, respectively. The 7-year portion of the issue (US\$1,250) was priced at 6.4 percent, while the 15-year tranche (US\$1.0 billion) was priced at 7.9 percent. On March 11, Ghana issued a 41-year Eurobond, Sub-Saharan Africa's longest-

ever selling Eurobond, amounting to US\$750 million, with a coupon rate of 8.8 percent. During February-May, as the pandemic took hold, risk sentiment deteriorated sharply, and the region experienced large capital outflows. Following massive support from central banks in advanced economies, global liquidity conditions improved, and private capital outflows moderated. Yet, although capital flows to EMDEs have generally picked up, access to capital markets remains difficult for countries in the region. In 2020Q3, no Eurobonds were issued in the region and none have been issued so far at the start of 2020Q4. A pronounced degree of risk aversion and sharply higher deficits and debts in the region have kept sovereign bond spreads higher than at the start of the year, prompting many countries to delay their planned return to the market (figure 1.32).

Eurobond issuance activity has slowed in the region.

FIGURE 1.31: Eurobond Issuance (US\$, billions)

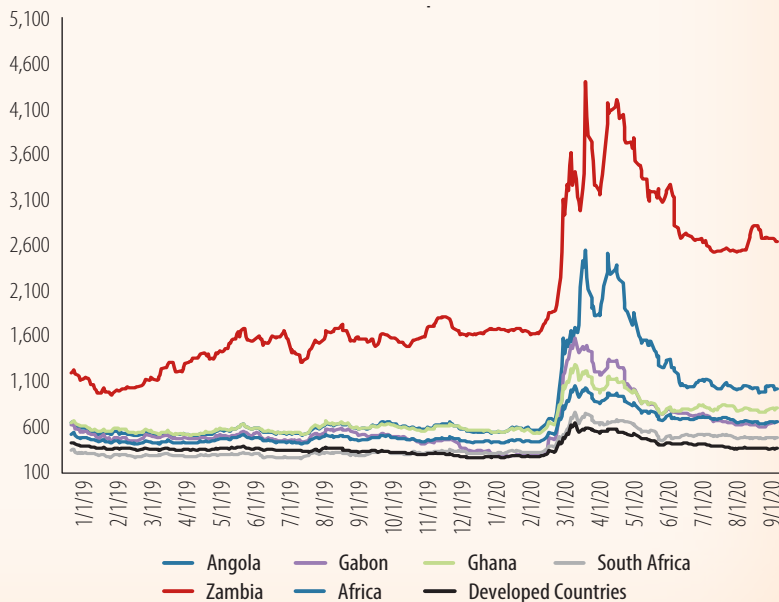


Source: Cytonn Report.

* Data as of September 2020.

High deficits and debt levels in the region have kept sovereign bond spreads elevated.

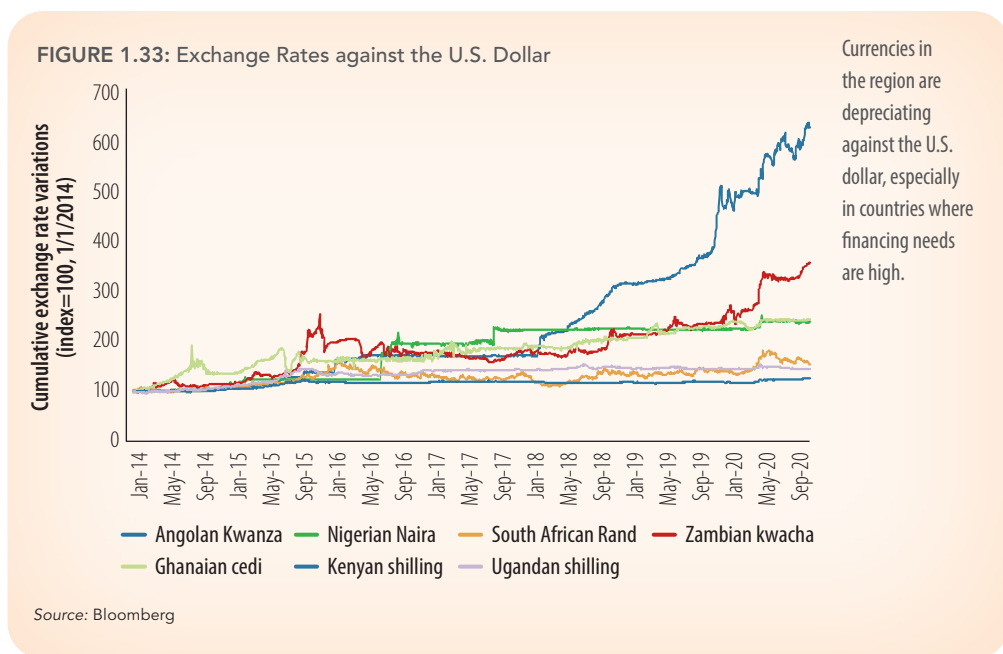
FIGURE 1.32: Sovereign Bond Spreads (basis points)



Sources: Bloomberg; World Bank.

In addition to the low private capital inflows, remittances—a key source of financing for a large number of countries in Sub-Saharan Africa and an important contributor to the balance of payments—are expected to decrease by 23 percent this year before rebounding moderately in 2021.⁵ Recession and the rise in unemployment in countries with large numbers of migrants from Sub-Saharan Africa, particularly the European Union (France, Italy, and Spain), the United States, the Middle East, and South Africa, are expected to translate into substantially lower remittances. The impact on individual countries will vary. Countries in which remittances account for a large proportion of GDP (South Sudan, Lesotho, and The Gambia) are the most vulnerable, while remittances are expected to hold steady in countries with diverse remittance sources, such as Kenya.⁶ In addition to tourism losses and the downturn in remittances, foreign direct investment (FDI) flows are also expected to remain weak as low commodity prices and uncertainty weigh on investment.

With access to international capital for sovereign borrowing limited and remittance and FDI flows slowing, the external financing needs associated with the large current account deficits are being covered mostly through official financing, including exceptional budget support from international financial institutions. This has helped support foreign reserves while exchange rates are depreciating against the U.S. dollar, especially in countries where financing needs are elevated (figure 1.33).



Inflation has picked up.

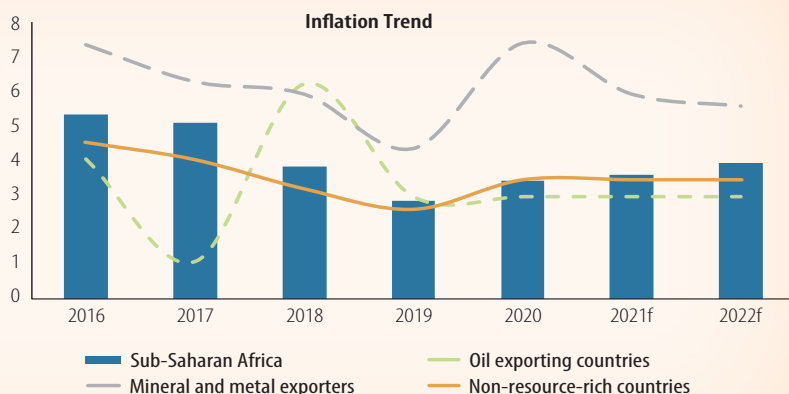
The region’s median inflation rate is estimated to have increased from 2.3 percent in 2019 to 3.5 percent in 2020, and it is expected to continue to rise into 2021 (figure 1.34). However, these aggregates mask significant variation among countries. In 2020, the inflation rate was in double digits in 12 countries, compared with nine countries in 2019. Sudan and Zimbabwe continued to experience annual inflation rates of over 100 percent. At the sub-regional level, in East and Southern Africa, inflation rose most rapidly among non-resource-intensive countries, reflecting deteriorating conditions in Sudan and Zimbabwe. Metals exporters followed, with the Democratic Republic of Congo and Zambia seeing their inflation rates rise rapidly into double-digits. In the Democratic Republic of Congo, inflation jumped above 30 percent year-on-year in July before easing slightly in August. Among oil exporters, inflation rates rose continuously in Angola, exceeding 23 percent year-on-year in August.

⁵ World Bank (2020d).

⁶ Economist Intelligence Unit (2020).

Consumer price inflation picked up in most countries in the region in 2020.

FIGURE 1.34: Sub-Saharan Africa: Consumer Price Inflation



Source: World Bank.

In West and Central Africa, inflation remained relatively low among oil exporters in CEMAC and non-resource-intensive countries in the WAEMU, owing to the stable peg of their currency—the CFA franc—to the euro. Elsewhere, inflation rose steadily in Nigeria, reaching 13.2 percent year-on-year in August from 12.8 percent in July. Inflation eased in Ghana

but remained above 10 percent year-on-year in August. Finally, among metals exporters, inflation remained in high double-digits in Liberia and Sierra Leone.

Most countries in the region experienced a broad-based rise in price pressures in 2020. Food inflation increased across the region as lockdowns put pressure on food prices. Inflation picked up in other categories, including housing and utilities. Policy makers' measures to deregulate fuel prices contributed to an increase in transport inflation. In some countries, notably Angola and Zambia, pass-through from currency depreciation added to price pressures.

Monetary authorities in the region took action to ease monetary policy to mitigate the adverse effects of the pandemic. Most countries in the region had high interest rates before the COVID-19 crisis, prompting central banks, particularly those where inflation is well-anchored, to loosen monetary policy by cutting their policy rates early during the crisis to support economic activity, in line with conventional policy.⁷ The regional central banks for West African states (the Central Bank of West African States) and Central African states (the Bank of Central African States), as well as central banks in more than 30 countries, lowered interest rates, with rate cuts ranging from 25 to 500 basis points. In addition, central banks reduced reserve requirements on banks, purchased government securities, and provided regulatory capital relief to sustain lending by financial institutions to households and firms. It remains to be seen, however, whether and to what extent these measures have been effective in supporting economic activity in the region.

Fiscal positions have deteriorated, and debt levels have increased.

In response to the COVID-19 crisis, countries across the region implemented measures to address the humanitarian and economic impacts of the pandemic, using fiscal policy tools. These measures included investments to strengthen the health system; implementation of social emergency plans to support vulnerable households, notably with unconditional cash transfer programs; and support to the private sector, including through tax relief and central bank guarantees. Country authorities adopted a more accommodative fiscal stance to address

⁷ Benmelech and Tzur-Ilan (2020).

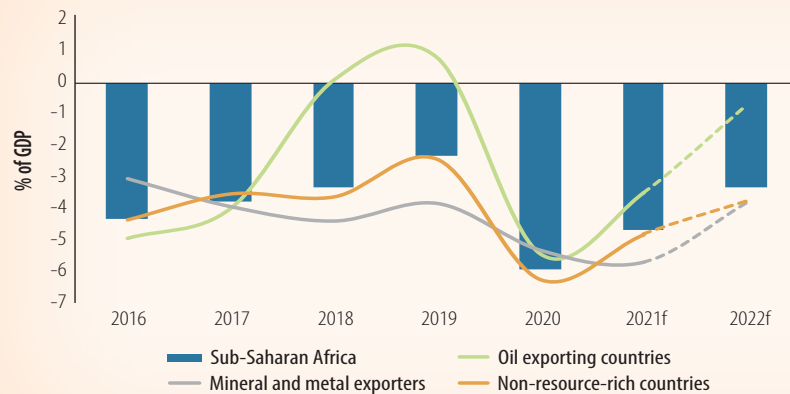
these priorities. Entering the COVID-19 crisis, countries in the region had inadequate fiscal space and were constrained in their ability to finance the increased level of spending. The fall in GDP growth as a result of the pandemic, low revenue administration capacity, tax exemptions, and other relief measures provided to support the private sector further weakened government revenue.

Increased fiscal spending and low revenue combined to worsen fiscal balances.

The region's median fiscal deficit is projected to increase from -2.3 percent of GDP in 2019 to -5.9 percent of GDP in 2020 before declining to -5.4 percent of GDP in 2021 (figure 1.35). In East and Southern Africa, the fiscal deficit is projected to widen on average from -4.9 percent of GDP in 2019 to -9.0 percent of GDP in 2020, mainly due to a deterioration in the fiscal balances of Angola and South Africa—the subregion's two largest economies (figure 1.36). Angola entered the COVID-19 crisis with a small fiscal surplus that is expected to turn into a deficit of nearly 3 percent of GDP due to the loss of oil revenues. South Africa's fiscal performance, in particular, is expected to weaken significantly, with the fiscal deficit projected to rise from -6.4 percent of GDP in 2019 to -16.2 percent of GDP in 2020.

Among other resource-intensive countries, the fiscal situation is expected to worsen in Zambia and Namibia. Among non-resource-intensive countries, the loss of tourism revenues has weighed heavily on fiscal balances in tourism-dependent economies, including Mauritius and the Seychelles. These economies are expected to experience a double-digit increase in their fiscal deficits in 2020.

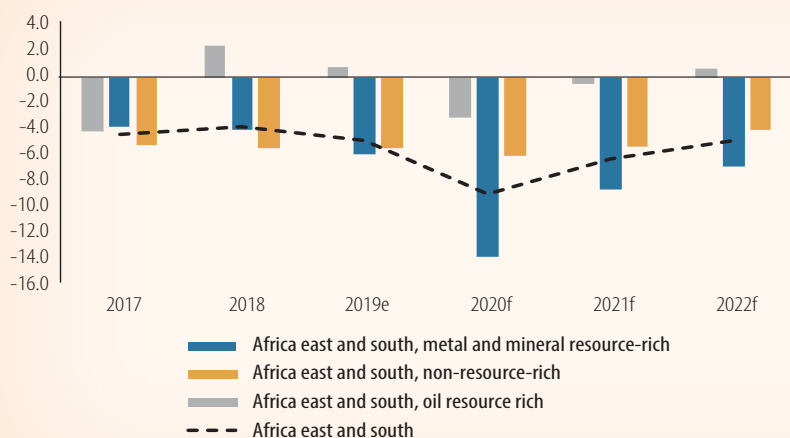
FIGURE 1.35: Fiscal Balance (% of GDP)



Source: World Bank.

The region's median fiscal deficit is expected to widen to close to 6 percent of GDP in 2020 before narrowing in 2021.

FIGURE 1.36: East and Southern Africa: Fiscal Balance (% of GDP)

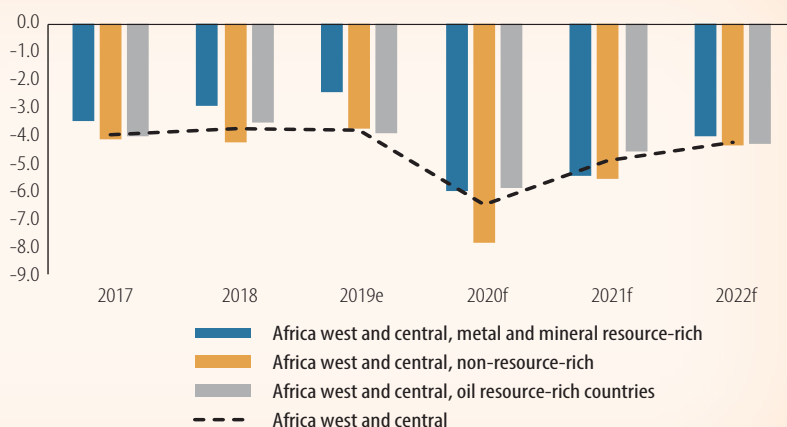


Source: World Bank.

In East and Southern Africa, the fiscal deficit is projected to widen significantly in 2020 due to deterioration of the fiscal balances of the subregion's two largest economies.

In West and Central Africa, the increase in the fiscal deficit is expected to reflect the significant loss of revenue and increased fiscal spending among non-resource-intensive countries as a result of COVID-19.

FIGURE 1.37: West and Central Africa: Fiscal Balance (% of GDP)



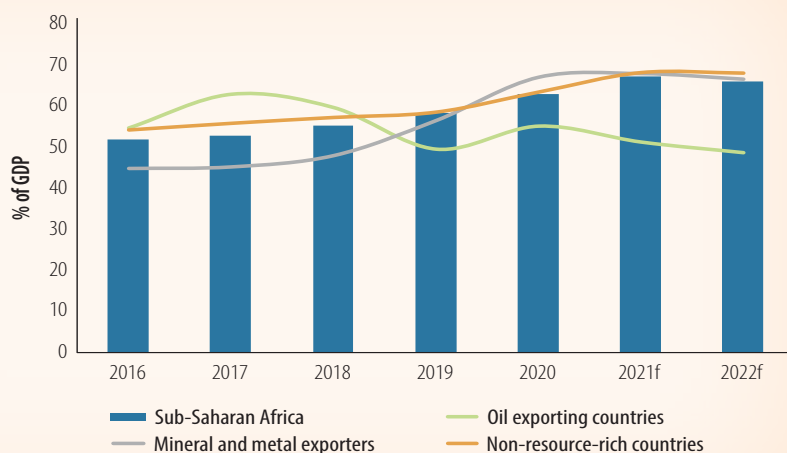
Source: World Bank.

In West and Central Africa, the fiscal deficit is projected to widen, on average, from 3.8 percent of GDP in 2019 to 6.4 percent of GDP in 2020 (figure 1.37). This average masks significant variation across countries in the subregion. In particular, non-resource-intensive countries are expected to see their fiscal deficit increase significantly. This is notably the case for Ghana and Cabo Verde,

where the loss of revenue and increased fiscal spending are expected to result in double-digit fiscal deficits in 2020. Non-resource-intensive countries in the WAEMU, where convergence criteria have been temporarily suspended to allow greater flexibility in policy response, will also experience a deterioration in their fiscal balances. Among oil exporters, Nigeria is expected to see its fiscal deficit widen further to nearly 6.0 percent of GDP in 2020. The fiscal deficits of oil exporters in CEMAC are also projected to increase substantially, particularly in the Republic of Congo, as reduced oil production and weaker oil prices cause revenue to fall. Among metals exporters, fiscal deficits are expected to more than double as mining revenue stagnates.

The large fiscal deficits are expected to push government debt higher across countries in the region.

FIGURE 1.38: Public Debt (% of GDP)

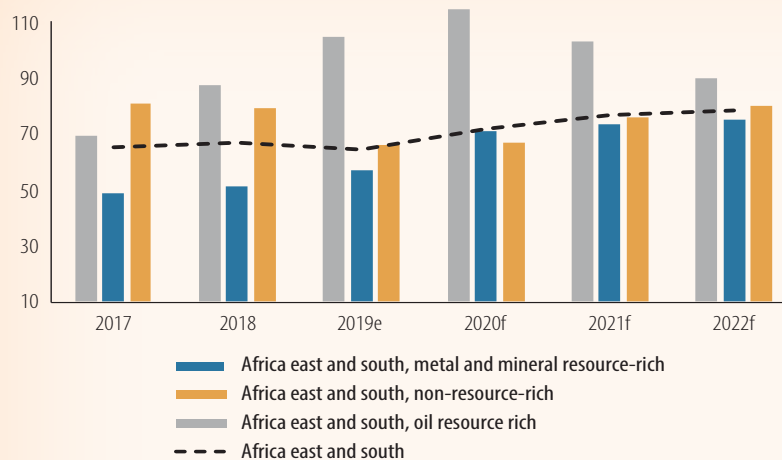


Source: World Bank.

The large fiscal deficits have pushed public debt levels higher. The region's level of public debt is projected to increase from 58.5 percent of GDP in 2019 to 63.1 percent of GDP in 2020, rising further to 67.4 percent of GDP in 2021 (figure 1.38). In addition to the large fiscal deficits, low growth and exchange rate depreciation have contributed to the increase in debt levels. On average, public debt

levels are higher in East and Southern Africa. In 2019, about 10 countries in this subregion had a debt level of over 60 percent of GDP. In 2020, this number is expected to rise to 15, slightly more than half of the countries. While figure 1.39 suggests that the high debt levels in the subregion are driven by oil exporters, this mainly reflects Angola's debt, which is expected to rise significantly in 2020 and remain elevated through the forecasting period. Debt levels in the subregion are also expected to rise strongly among metals exporters, including Zambia and South Africa, due to their high financing needs. Among non-resource-intensive countries, debt levels are expected to worsen significantly in Mozambique, São Tomé and Príncipe and Sudan, which entered the COVID-19 crisis already at high risk of debt distress.

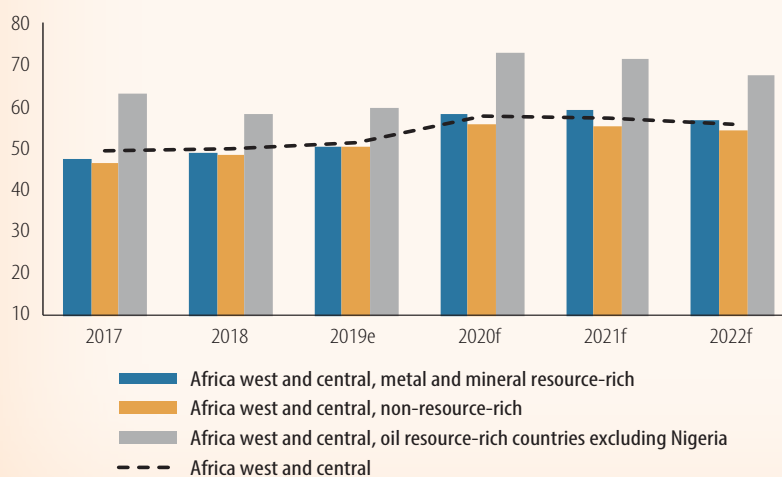
FIGURE 1.39: East and Southern Africa: Government Debt (% of GDP)



In East and Southern Africa, debt levels are expected to rise across countries, partly due to low growth and exchange rate depreciation.

Source: World Bank.

FIGURE 1.40: West and Central Africa: Government Debt (% of GDP)



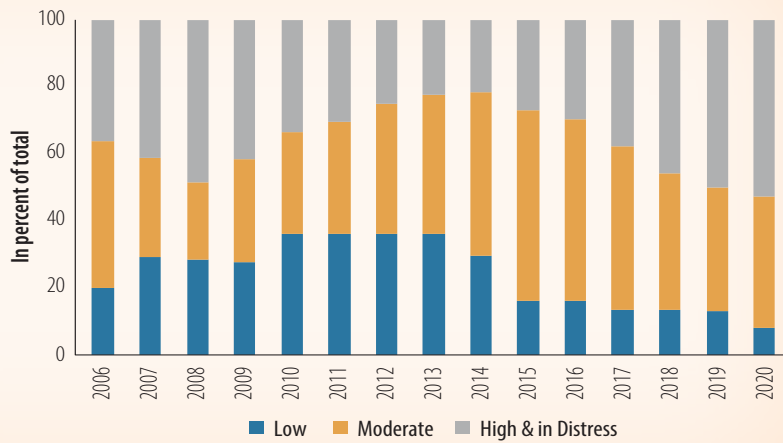
In West and Central Africa, debt levels are projected to rise noticeably among oil exporters excluding Nigeria.

Source: World Bank.

In West and Central Africa, debt levels are projected to rise noticeably among oil exporters excluding Nigeria (figure 1.40). Although Nigeria's public debt level is projected to rise, it is expected to remain below 30 percent of GDP in 2020. Instead, public debt is expected to rise sharply in the Republic of Congo as well as Gabon among oil producers in CEMAC. Among metals exporters, Liberia, Sierra Leone, and Mauritania are expected to see their debt level rise, partly due to large fiscal deficits and exchange rate depreciation. Among non-resource-intensive countries, Ghana, tourism-dependent economies, and countries in WAEMU, which saw

The COVID-19 pandemic has increased debt vulnerabilities across the region, with more countries at high risk of debt distress or in debt distress as a result of the pandemic

FIGURE 1.41: External Debt Distress (percent of total)



Source: World Bank.

their fiscal deficits widen in 2020, will experience a significant rise in public debt.

The COVID-19 pandemic has amplified debt vulnerabilities in the region. Prior to the crisis, the proportion of low-income countries in Sub-Saharan Africa assessed to be at high risk of external debt distress or in debt distress had increased to half. Amid heightened

uncertainty in the global economy, an expansionary fiscal policy stance to respond to the crisis has diminished fiscal buffers, and an increase in risk aversion in financial markets has raised borrowing costs and financing risks. As a result, more countries in the region have been assessed at high risk of debt distress (figure 1.41). As the COVID-19 pandemic continues to impact the regional economy, it is likely to lead to a further deterioration in the region's debt sustainability outlook.

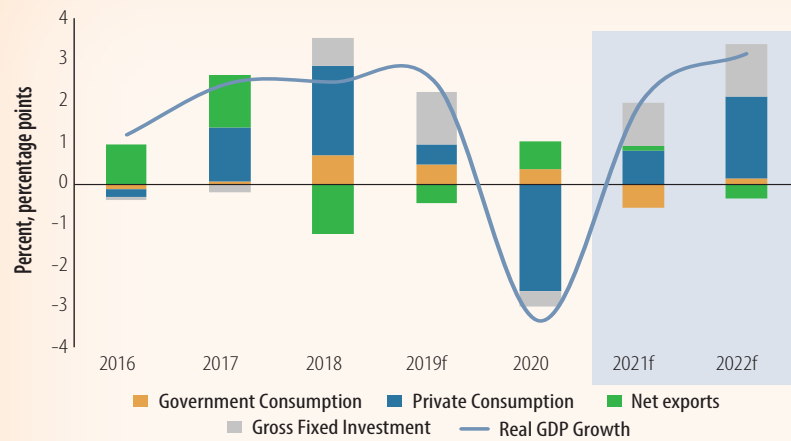
OUTLOOK

A severe economic downturn is expected in the region in 2020, followed by subdued growth in 2021 amid persisting global uncertainty about the evolution of the pandemic.

Outlook for 2020. The region's real GDP is projected to contract by -3.3 percent in 2020, after expanding by 2.4 percent in 2019. While net exports will increase, mainly because of a faster decline in imports, lower domestic consumption and investment due to the COVID-19 pandemic and the related containment measures will push the regional economy into its first-ever recession over the past 25 years (figure 1.42). Sharp contractions in industry and services will drive the downturn from the supply side (figure 1.43). Despite its severity, the decline in regional growth in 2020 will be within the range of -2.1 to -5.1 percent, as projected in the April 2020 *Africa's Pulse*.

The contraction caused by the pandemic was spread broadly across countries in the region. However, the decline in growth has been stronger among metals exporters, where real GDP is expected to contract by 6.0 percent, partly reflecting the large drop in output in South Africa (figure 1.44). Among oil exporters, after expanding by 1.5 percent in 2019, real GDP is projected to fall by more than 4.0 percent in 2020, owing to contractions in Angola and Nigeria. In contrast, for non-resource-intensive countries, the decline in growth in 2020 is expected to be moderate, on average. In several non-resource-intensive countries, including Côte d'Ivoire, Ethiopia, and Kenya, growth is expected to slow substantially but remain positive, owing to their more diversified economies. Meanwhile, the tourism-

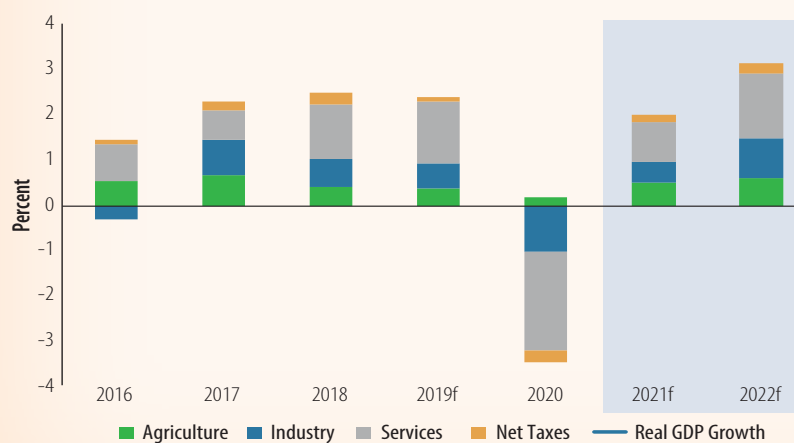
FIGURE 1.42: Contribution to GDP Growth: Expenditure



A sharp decline in domestic consumption and investment spending due to the COVID-19 pandemic is expected to push the region into recession in 2020.

Source: World Bank.

FIGURE 1.43: Contribution to GDP Growth: Production

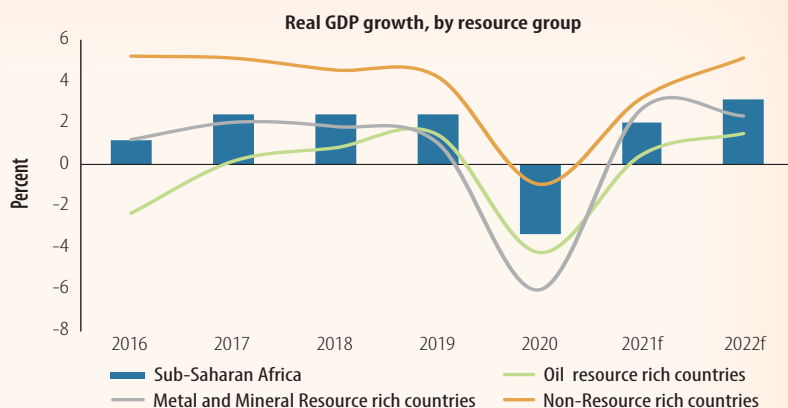


Sharp contractions in the industrial and service sectors are expected to drive the downturn in economic activity in the region from the supply side.

Source: World Bank.

Although the decline in growth in the region will affect most countries, it is expected to be much stronger among metals exporters, partly reflecting the large drop in output in South Africa.

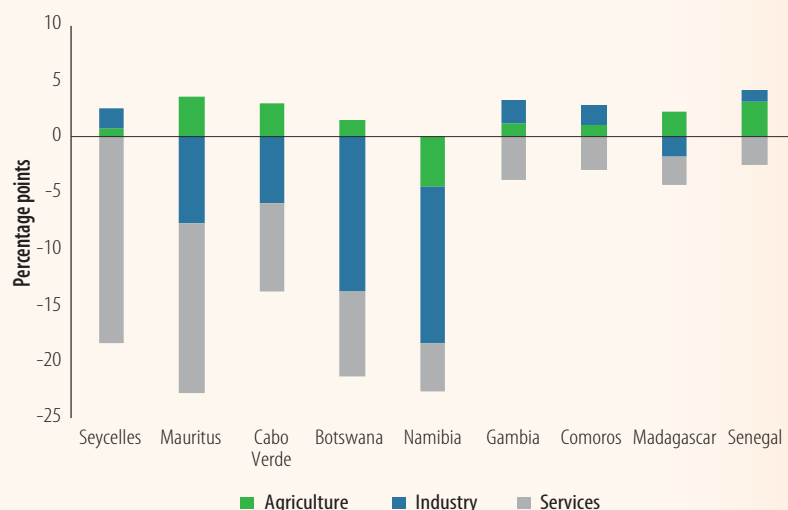
FIGURE 1.44: GDP Growth, by Resource Group



Source: World Bank.

Tourism-dependent economies are expected to experience a sharp contraction in 2020 as disruptions in the tourism industry hit the service sector hard.

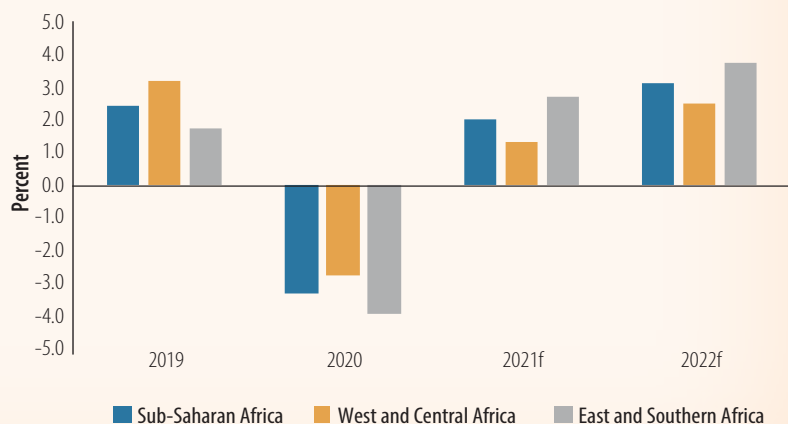
FIGURE 1.45: GDP Contractions in Tourism-Dependent Countries



Source: World Bank.

The decline in growth in 2020 is expected to be larger in East and Southern Africa than in West and Southern Africa, as Southern Africa's largest economies have experienced sharp recessions.

FIGURE 1.46: Baseline Growth Forecast, by Subregion



Source: World Bank.

dependent economies, especially those of Cabo Verde, Mauritius, and the Seychelles, experienced a sharp contraction as exceptionally weak international tourism severely impacted the service sector (figure 1.45).

The decline in growth in 2020 is expected to be larger in East and Southern Africa than in West and Central Africa (figure 1.46). This is partly due to the stronger output contraction in Southern Africa. South Africa and Angola—Southern Africa's largest economies—are expected to experience sharp recessions in 2020 as the COVID-19 pandemic exacerbates existing macroeconomic weaknesses. The decline in growth in South Africa will constrain expansion in other members of the Southern African Customs Union,⁸ while the oil sector continues to act as a drag on Angolan growth.

Outlook for 2021-22, baseline scenario.

Uncertainty around the spread and duration of the COVID-19 pandemic persists and continues to impact household consumption and private investment. Against this

⁸ Members of the Southern African Customs Union include Eswatini, Botswana, Lesotho, Namibia, and South Africa.

background, two scenarios have been prepared. The baseline scenario assumes that the first COVID-19 vaccine would successfully complete phase 3 trials by early 2021, with additional vaccines approved shortly after. In advanced economies and major EMDEs, approved vaccines would be rolled out starting in 2021Q1, gradually reaching their peak coverage in the second half of 2022. The rollout process in most other EMDEs and low-income countries, including in Sub-Saharan Africa, would be slower and lag that in advanced economies and major EMDEs by about two to three quarters, respectively. The advent of a vaccine underpins the continued recovery in consumer and business confidence amid buoyant financial markets. Accordingly, consumption, particularly of services such as tourism, would continue to strengthen and investment would recover as growth prospects improve and policy uncertainty declines. Commodity prices would gradually improve.

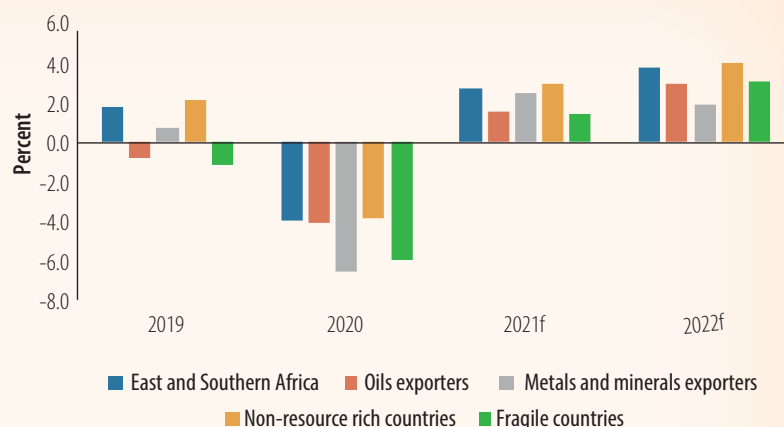
On this basis, regional GDP is projected to expand by 2.1 percent in 2021, below its level in 2019, before rising to 3.2 percent in 2022, fueled by a robust recovery of investment and domestic consumption. However, the projections mask considerable heterogeneity in prospects across countries. The strength of the recovery will vary significantly across economies and subregions. Among the region's largest economies, Nigeria and South Africa are expected to experience particularly weak recoveries.

- In Nigeria, after expanding 1.9 percent year-on-year in 2020Q1, real GDP contracted by 6.1 year-on-year in 2020Q2, with growth in the oil and non-oil sectors falling. The near-term outlook is subject to considerable uncertainty as the economy continues to grapple with the effects of the pandemic. Activity data suggest that the rebound in activity that started in 2020Q3 may have stalled. Investment remains weak amid high uncertainty. Growth is projected to fall by 4.1 percent in 2020 and remain subdued at 0.3 percent in 2021.
- In South Africa, the strict national lockdown is expected to lead to a significant economic downturn in 2020. While the sharp contraction in 2020Q2 is likely to mark the low point of growth this year, output levels will remain constrained by strict health and safety rules to stem viral transmission, while renewed local lockdowns present a further potential headwind to economic expansion. Real GDP is expected to shrink by 7.2 percent in 2020, before recovering to 2.6 percent in 2021, supported by progress in tackling COVID-19 and domestic reform to spur investment.
- In Angola, the COVID-19 crisis has pushed the economy into a fifth year of recession, with GDP projected to contract by 4 percent in 2020. A partial recovery is expected in 2021, with GDP projected to grow by 3.2 percent. The recovery is predicated on a stronger oil sector, especially an end to OPEC+ production cuts, and resumption of investments to halt the structural decline in production.

Overall, the East and Southern Africa subregion is expected to see a slightly stronger pickup in activity, with growth projected to reach 2.7 percent in 2021 (figure 1.47) compared with 1.4 percent in West and Central Africa (figure 1.48). This partly reflects the rebound in Angola and South Africa, as containment measures are relaxed, and a gradual firming of activity among East African countries, including Kenya and Rwanda. In West and Central Africa, slower growth among oil exporters, notably Nigeria, will partially offset a more robust rebound among metals exporters

East and Southern Africa is expected to see a relatively stronger pickup in activity, helped by the rebound in South Africa and Angola.

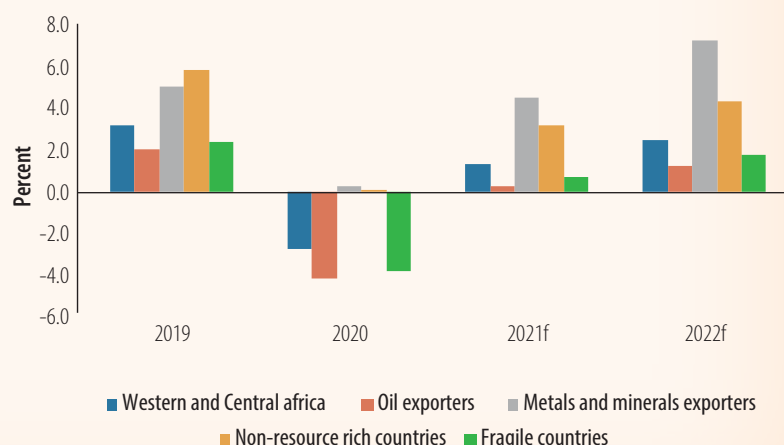
FIGURE 1.47: East and Southern Africa: Baseline Growth Projections



Source: World Bank.

West and Central Africa is expected to experience a relatively more moderate rebound, due to the weaker recovery among oil exporters.

FIGURE 1.48: West and Central Africa: Baseline Growth Projections



Source: World Bank.

and non-resource-intensive countries.

Excluding Nigeria, growth in West and Central Africa is projected to rise to 3.0 percent in 2021, above that in East and Southern Africa. In both subregions, growth in fragile countries is expected to remain weak.

Outlook for 2021-22, downside scenario.

In the downside scenario, a vaccine would successfully pass phase 3 trials only toward the end of 2021 after a longer-than-expected trial period. In advanced economies and major EMDEs, the approved vaccine would be rolled out shortly thereafter—first to vulnerable groups and subsequently to the general population—reaching its peak coverage by the end of 2023. The rollout process in most other EMDEs and low-

income countries would be slower and lag that in advanced economies and major EMDEs by about two and three quarters, respectively. These vaccine developments would appreciably disappoint financial markets, and a lasting seasonal upsurge in cases across many countries would halt the nascent recovery in consumer and business confidence. Private consumption would be depressed for several quarters and investment would soften as growth prospects are downgraded. Activity in sectors sensitive to public interactions would be hardest hit, with any recovery in domestic and foreign tourism held off until 2022. Central banks would stave off financial market stress with renewed liquidity injections, and further fiscal support would be implemented. Commodity prices would fall.

In the downside scenario, regional GDP is projected to expand by 1.2 percent in 2021 and 2.1 percent in 2022, remaining below the 2019 growth of 2.4 percent by the end of the forecasting period, as domestic consumption and investment remain weak across the region. Weaker growth in the region's three largest economies—Nigeria, South Africa, and Angola—would

slow the recovery in the region. Growth in West and Central Africa will rise from -2.8 percent in 2020 to just 0.5 percent in 2021, compared with 1.4 percent in the baseline scenario, as the rebound among metals exporters and non-resource-intensive countries is offset by a contraction in Nigeria (figure 1.49). In East and Southern Africa, growth will rise from -3.9 percent in 2020 to 1.9 percent in 2021, compared with 2.7 percent in the baseline scenario, reflecting a weaker recovery in Angola and South Africa (figure 1.50).

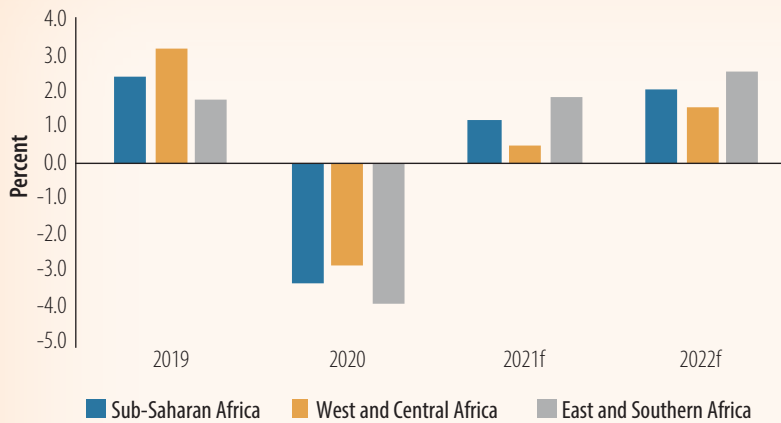
The pandemic could reverse the economic and development gains the region has made over the past decade.

Real per capita GDP is projected to contract sharply in 2020, falling by about 6.0 percent, the largest decrease over the past two decades (figure 1.51). With the tepid 2.1 percent growth projected for 2021, per capita GDP

growth will rebound but remain negative. If this low growth materializes, at the end of 2021, the region’s real GDP per capita would be back to its level in 2008 (figure 1.52). This underscores the concern that the COVID-19 pandemic may wipe out the economic and development gains the region has achieved over the past 15 years.

Although the decline in GDP per capita is expected to be broad-based, it would be relatively more pronounced among oil and metals and minerals exporters. These include Nigeria, South Africa, and the Democratic Republic of Congo, where large numbers of the poor live. The World Bank has estimated that in 2020 COVID-19 will push 26 million people in Sub-Saharan Africa into extreme poverty, measured at the international poverty line of \$1.90 a day, and up to 40 million

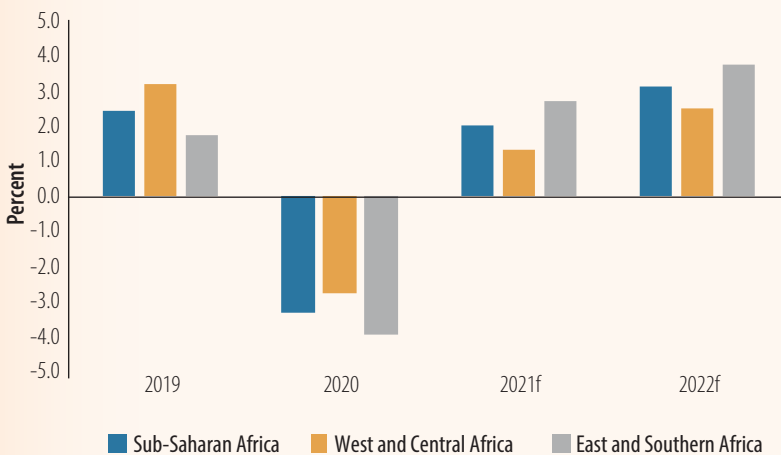
FIGURE 1.49: Downside GDP Growth Projections



Source: World Bank.

In the downside scenario, regional GDP is expected to remain subdued. In West and Central Africa, a rebound among metals exporters and non-resource-intensive countries will be offset by a contraction in Nigeria.

FIGURE 1.50: Baseline GDP Growth Projections



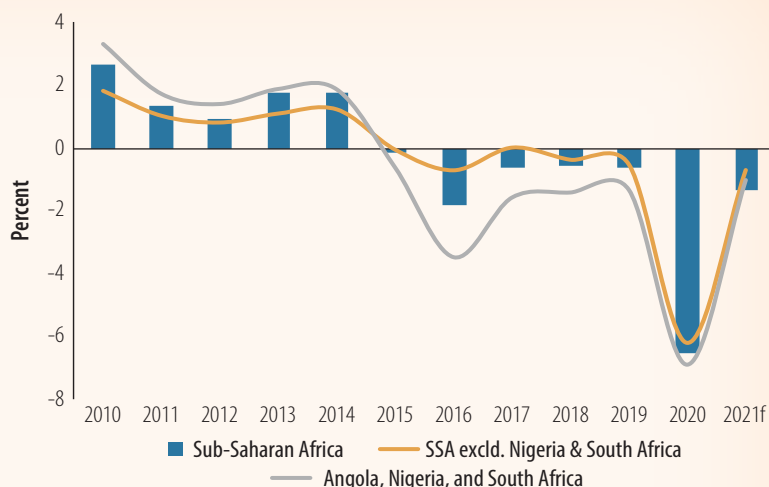
Source: World Bank.

Note: The baseline scenario corresponds to the central forecast of the Macro-Poverty Outlook of October 2020. The downside scenario was generated using the World Bank’s Macro Fiscal Model MFMOD. Numbers for this scenario were generated on the basis of specific assumptions about the inherently uncertain progress of COVID-19 and the policy responses to it. As such, they should be interpreted as illustrative rather than predictive.

In the downside scenario, growth in East and Southern Africa is expected to slow noticeably, due to a weaker recovery in Angola and South Africa.

Real per capita GDP is projected to contract sharply in 2020, before rebounding moderately in 2021.

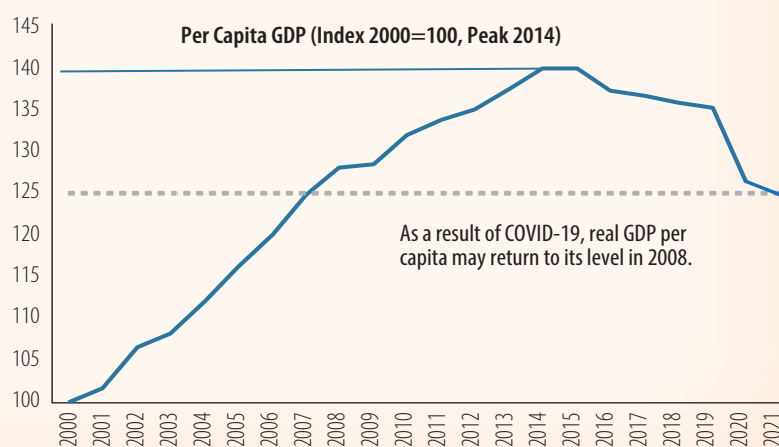
FIGURE 1.51: Real GDP per Capita



Source: World Bank.

The slow recovery projected in 2021 implies that at the end of 2021, the region's real GDP per capita would be back to its level in 2008.

FIGURE 1.52: Real GDP per Capita, 2000–21



Source: World Bank.

in the downside scenario.⁹ Income inequality is also expected to increase. High-frequency phone surveys show that within countries across the region, the impacts of the COVID-19 pandemic have been highly unequal and exacerbated existing inequalities. Workers in occupations in which only a small share of tasks can be done from home have been more likely to experience reduced hours, job losses, and significant falls in earnings. As lockdowns have disproportionately affected informal sectors and small and medium-size companies in the service sector, less educated workers, those with temporary contracts, the self-employed, and women have been most severely impacted by the crisis.

Even before the effects of the pandemic were felt, a child born in a typical country in Sub-Saharan Africa could expect to achieve just 40 percent of her potential human capital, relative to a benchmark of complete education and full health. COVID-19 now threatens to further set back the region's human capital, wiping out recent gains and leaving an entire generation behind. New data from the World Bank Group's Human Capital Index (HCI) present a decade-long view of the evolution of human capital outcomes from 2010 through March 2020. The HCI serves as a baseline to track changes in human capital and inform policies to protect and invest in people throughout the COVID-19 pandemic and beyond. In Sub-Saharan Africa, the data show progress over the past decade, with almost every country with available data increasing their HCI.

The COVID-19 pandemic presents significant risks to these past gains. Countries in Africa are reporting significant disruptions in essential health services, with for instance vaccinations falling off and antenatal visits dropping. And around 99 percent of the learners in Africa (253 million

⁹ World Bank (2020j).

people) live in countries that have been affected by school closures, causing losses in learning as well as an increase in school dropouts and teenage pregnancies. In addition, loss of income and disruptions of food systems have led to a reduction in people's food intake. Women and girls are particularly hard hit by many of these impacts, with an increase in gender-based violence also being reported in multiple African countries. Lastly, fiscal constraints in the current environment make it harder for governments to respond to the pandemic and protect investments in their people. Box 1.2 illustrates some of the evolving and potential impacts of the COVID-19 pandemic on selected Sub-Saharan African countries.

BOX 1.2: How the Pandemic Impacts Human Capital in Sub-Saharan Africa

The pandemic crisis threatens to disrupt the process of human capital accumulation in Sub-Saharan Africa and set back hard-earned progress in health and education. This box highlights the potential impacts of the COVID-19 pandemic on selected countries in the region.

East and Southern Africa

- In Uganda, the anticipated drop in economic growth from an average of 5.4 percent over the previous four years to about 3 percent in FY2021 is expected to reduce government funding for the social sectors. Between April and June 2020, the coverage of antenatal care, in-facility deliveries, and some immunization services dropped by between 5 and 30 percent compared with the similar period in FY2019. Maternal deaths increased by 19 percent between 2019Q4 and 2020Q4. Similar trends have been seen in malaria, tuberculosis, and HIV care, as well as for chronic conditions. Early evidence of the impact of the COVID-19 lockdown on households in rural Uganda revealed a decline of 60 percent in household nonfarm income, resulting in an increase in the likelihood of missing a meal, a decline in reported satisfaction with the quality of life, and an increase in perceived frequency of intimate partner violence against women in the village (Mahmud and Riley 2020).
- In South Africa, a country where 80 percent of the students already experienced learning poverty, approximately 13 million students were affected and left without any form of adequate schooling between April 1 and June 30, 2020. And the already very high youth unemployment rate has been further aggravated by the decline in economic activity.
- An extended period of school closure due to COVID-19 in Rwanda (since March 2020) is causing a further deterioration of already poor learning outcomes. And the closure of colleges, including health training schools (for nurses, midwives, and laboratory technicians) and the faculty of medicines, will adversely affect the supply chain of the qualified health workforce to deliver quality health services.
- In Eswatini, significant declines (between 31 and 55 percent compared with previous years) in the numbers of pregnant mothers seen for their first antenatal care visits are being observed. Reports of high teenage pregnancies have also emerged in the country, with many reopened schools reporting cases.
- Preliminary analyses show reductions in the use of essential health services in Somalia. And because of the pandemic, already-limited government capacity and resources are being diverted from other critical health efforts.

BOX 1.2
Continued

West and Central Africa

- In Mauritania, where schools closed for several months, the learning-adjusted years of schooling (already very low) would go down from 3.4 to 2.8 in the worst case scenario. More than 2,000 children ages 4 to 11 may also drop out of school, as well as more than 4,000 children ages 12 to 17.
- Compared with the pre-lockdown period, only 43 percent of the population in Nigeria was working in April/May and only 71 percent in June. Additionally, the number of Nigerians experiencing food insecurity has risen by 40 percentage points relative to the pre-pandemic period.
- Major disruptions in health services could leave 331,500 children in Senegal without treatment for pneumonia and 542,800 children without a diphtheria, pertussis, and tetanus (DPT) vaccine.

Source: World Bank, Africa Human Capital Project Team.

RISKS

Risks to the regional outlook remain skewed to the downside.

The risks mainly stem from the uncertainty about the evolution of the COVID-19 pandemic and the speed of the global recovery. Other risks relate to the evolving security and environmental challenges, social and political tensions, and food insecurity.

Intensified domestic transmission of the pandemic. How deep the COVID-19 virus will spread and what the health and economic toll will be remain uncertain. Containment measures are being eased across the region, including in countries where case numbers have yet to peak. The easing of containment measures could lead to a faster and more significant spread of the virus in countries in the region, with devastating effects on health systems and populations.

Prolonged COVID-19 pandemic. Longer containment and uncertainties about the intensity and duration of the pandemic could adversely affect supply, including through global value chain disruptions, and domestic and external demand. Deteriorating economic conditions and a decline in risk appetite could result in a second wave of financial tightening and debt service and refinancing difficulties. Debt sustainability problems could worsen. Growth could be severely affected through reduced FDI inflows and external support. Demand for export products and their prices would fall, hurting economic activity.

Social discontent and political instability. Social tensions could erupt due to dissatisfaction with the policy response to the pandemic and the economic fallout, including massive unemployment, higher incidence of poverty, and shortages of essential goods. The resulting political instability could complicate adjustment following the COVID-19 pandemic. Intensified geopolitical tensions and security risks could cause socioeconomic and political disruption, disorderly migration, and lower confidence.

Worsening food security situation. Prior to the COVID-19 pandemic, Sub-Saharan Africa was the most food insecure region. With resources being reallocated to tackle the health and economic fallout from the virus, the food security situation could worsen in the region. Lockdown-related measures to mitigate the spread of the virus caused severe disruptions to supply chains, and border closures affected transportation links, worsening food availability. If the pandemic continues unabated into 2021, deepening the recession in some economies, food insecurity could lead to a worsening in socioeconomic conditions in countries in the region, which could potentially lead to protests and political instability.

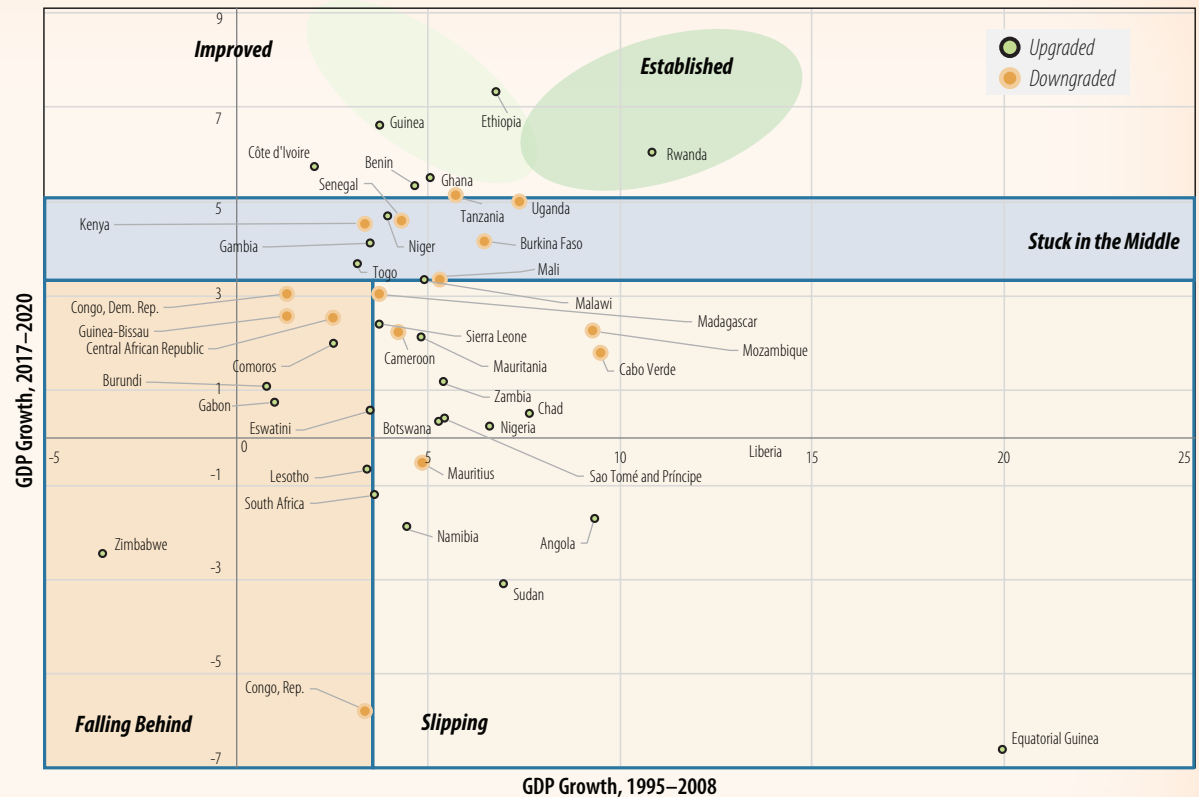
Taxonomy of Growth: How Resilient Is Growth across Sub-Saharan African Countries?

The taxonomy of growth resilience, introduced in the volume 14 of Africa's Pulse, describes different groups of growth performers in the region according to the speed and persistence of the rate of growth of their GDP (World Bank 2016). This analysis provides a broad picture of recent economic performance in Sub-Saharan Africa. External headwinds—driven by lower external demand, disruption of global value chains, and declining flows of foreign financing—

and the containment measures to combat the spread of the COVID-19 pandemic have taken a toll on Sub-Saharan African countries during 2017–20. This section updates the taxonomy of growth resilience in Sub-Saharan Africa (figure 1.53).

Compared with performance prior to the pandemic, 15 countries have been downgraded, and the top tercile of growth performers in the region comprises only five countries—down from 10 in October 2019.

FIGURE 1.53: Growth Taxonomy in Sub-Saharan Africa



Source: World Development Indicators, World Bank.

Note: The growth taxonomy compares the average annual rate of GDP growth during 1995–2008 and 2015–19 against predetermined thresholds. These thresholds correspond to the 33rd and 67th percentiles of the annual average growth rate across 44 Sub-Saharan African countries during 1995–2008, which are 3.5 and 5.4 percent, respectively. Once the thresholds are established, the taxonomy classifies growth performance into five groups: (a) falling behind, (b) slipping, (c) stuck in the middle, (d) improved, and (e) established. For more details, see *Africa's Pulse*, volumes 14 and 15. GDP = gross domestic product.

Compared with the taxonomy reported in the volume 20 of *Africa's Pulse* (World Bank 2019), 15 countries have been downgraded. Three countries were downgraded from established to stuck in the middle (Burkina Faso, Uganda, and Tanzania), two countries went from improved to stuck in the middle (Kenya and Senegal), and 10 countries were downgraded from stuck in the middle to slipping (Cabo Verde, Cameroon, Madagascar, Mali, Mauritius, and Mozambique) and to falling behind (the Central African Republic, the Democratic Republic of Congo, the Republic of Congo, and Guinea-Bissau).

The top tercile of growth performers in the region, which includes the improved and established countries, comprises only five countries (Côte d'Ivoire, Ethiopia, Ghana, Guinea, and Rwanda) as opposed to 10 countries in October 2019. This group houses 18 percent of Sub-Saharan Africa's population (193 million people in 2019) and produces 14 percent of the region's total GDP.

The middle tercile of growth performers now includes nine countries (Benin, Burkina Faso, The Gambia, Kenya, Niger, Senegal, Tanzania, Togo, and Uganda). This group accounts for about 22 percent of the region's population (237 million people in 2019) and 15 percent of the region's GDP. The number of countries in the bottom tercile of growth performers has increased to 30, up from 21 in October 2019. This group of countries includes Angola, Botswana, Burundi, Cabo Verde, Cameroon, the Central African Republic, Chad, the Comoros, the Democratic Republic of Congo, the Republic of Congo, Equatorial Guinea, Gabon, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Nigeria, São Tomé and Príncipe, Sierra Leone, South Africa, Sudan, Eswatini, Zambia, and Zimbabwe. It accounts for 60 percent of the region's population (646 million people in 2019) and produces 70 percent of the region's total GDP.

POLICIES

The battery of measures implemented to contain the pandemic are ongoing—although at different degrees across countries—and their economic effects have been damaging but are still evolving throughout the continent. In this environment, policy makers need to advance policies that help chart a sustained and inclusive recovery and improve resilience to shocks. These policies include (1) implementing measures to create fiscal space, and (2) designing policies to chart the course for rapid growth and job creation on the road to recovery. So far, the spread of the pandemic across Sub-Saharan Africa has not been as alarming as initially feared. However, the pandemic is driving Sub-Saharan Africa into its first recession over the past 25 years. The contraction of economic activity in the region in 2020 is estimated at 3.3 percent, within the interval of growth forecasted in volume 21 of *Africa's Pulse*. It is highly likely that the virus will still be present on the continent until the end of 2021. The lingering effects of the pandemic will continue on economic activity.

Creating Fiscal Space to Pave the Way to Recovery

The COVID-19 pandemic is putting substantial pressure on Sub-Saharan African economies, especially those with widened fiscal deficits and debt distress. The massive fiscal cost to respond to the pandemic further jeopardizes the sustainability of public finances and may lead to cases of sovereign debt default. In April, the World Bank's Development Committee and the G20 finance ministers endorsed the Debt Service Suspension Initiative (DSSI) to grant debt service suspension to the poorest countries and help them manage the impact of the pandemic. Of the 73 eligible countries, 28 countries in the region have signaled their participation in the DSSI. This must have expanded the fiscal space of some countries—although to different degrees. Still,

charting the course to a rapid recovery will also require massive investments across countries in the region. Amid weak balance sheets, governments may need to reconstitute fiscal space in the post-COVID-19 era to help finance programs that can stimulate a rapid recovery. The public sector needs to implement a series of measures from the revenue, expenditures, and public debt sides to guarantee a more sustainable fiscal position in the economy.

Revenues

Broadening the tax base can build up fiscal space by raising government revenues. The insertion of digital tools into public administration may help expand the set of taxpayers, reduce costs, and improve tax performance. Governments can better identify taxpayers by issuing digital IDs. They can also establish online platforms for e-filing and e-payments of taxes and import duties. Digital technologies help strengthen tax administration by lowering transaction costs and allowing innovation in tax policy. Digital tax administration may reduce tax evasion and fraud. In parallel, capacity building is required in the form of training staff on taxation, the use of digital platforms, and integrated data analytics. Cybersecurity and data protection also need to be addressed. For instance, the Democratic Republic of Congo will roll out a computerized system for collecting and tracing the flow of revenue payments for tax and customs administration. Togo is also making efforts to digitize tax payments by making it mandatory for large and medium-size firms to make online payments.

Managing commodity-resource revenues through sovereign wealth funds (SWFs) can potentially constitute a prudent way to administer assets among commodity-abundant countries. SWFs could provide a cushion against adverse shocks or finance investment for development. SWFs also protect resource-abundant countries by ensuring that the current government and/or the current generation cannot deplete the country's capital. The main goal of SWFs is to achieve effective and efficient governance of the funding, withdrawal, and spending of these resources to meet a series of objectives—say, pensions, intertemporal equity, and development, among others. Therefore, spending plans from the SWF should be part of a coherent, medium-term expenditure framework. For example, spending from the SWF can be deployed to meet unexpected and large adverse shocks—for example, in the event of a natural disaster. The credibility and effectiveness of the SWF is enhanced by the greater accountability of the fund's managers. This is achieved by submitting frequent reports to the government on the incoming revenues and deployed resources (if there is a spending or investment mandate). In this manner, increasing the transparency of revenues and resource-based revenue management is essential. For instance, the Nigerian National Petroleum Company (NNPC) has started publishing online the reports submitted to the Federation Account Allocation Committee (FAAC) within a month of the reconciliation of the figures by the FAAC. The NNPC will also start publishing its independently audited annual financial statements on an annual basis.

Expenditures

Fiscal authorities need to spend their resources efficiently by cutting nonessential outlays and reprioritizing spending while maximizing the impact of such expenditure on economic activity—thus creating fiscal space. Curbing unnecessary spending includes terminating ghost workers and avoiding permanent increases in public salaries. Amid low commodity prices, commodity-abundant countries may seize the opportunity to eliminate subsidies—especially on fuel. Yet, in light of the severe impacts of the crisis on human capital and the importance of investing in people for a sustainable recovery, governments need to safeguard social sector spending. Fostering greater transparency and accountability can also improve expenditure efficiency. During the pandemic, some governments have introduced budget amendments for emergency spending, and some have adopted procedures to publish all pandemic-related procurements. The resources deployed for the COVID-19 response have come along with a series of mechanisms to guarantee transparency and accountability. For instance, governments have established management committees (Mali) and governance mechanisms for solidarity funds (Mauritania). Resources, expenditures, procurement plans, and contract awards are being published online (Mali and Nigeria). Financial, compliance, and performance audits of the use of COVID-19 funds will be audited (Nigeria). More broadly speaking, reprioritizing expenditure could pave the road to recovery by also protecting productive spending—in health, education, and infrastructure, among others.

Improving the performance of state-owned enterprises (SOEs) also involves cutting unnecessary costs in public expenditures. Amid widened deficits and high debt vulnerabilities, it is imperative for SOEs to use public resources efficiently. In this context, several actions can be undertaken to improve SOE performance (Gaspar et al. 2020): (1) periodic reviews of SOEs to assess the amount and quality of the goods/services supplied, (2) provision of the right incentives to boost managers' performance and the capacity of government agencies to improve SOE oversight, and (3) a level playing field for SOEs and private firms to foster greater productivity and avoid protectionism (that is, by limiting special treatment for SOEs).

A faster recovery in the aftermath of the COVID-19 pandemic also requires boosting the efficiency of public investment. Maximizing the returns from investment requires ensuring a pipeline of projects that are well-defined technically and contribute to growth and social cohesion (Tandberg and Allen 2020). Accordingly, strengthening the governance mechanisms to select and manage investment projects should be part of the economic recovery strategy. It is essential to appraise (existing and new) projects adequately. A credible medium-term fiscal policy and framework should anchor public investment programs—including the budgetary impact of the different projects (for example, lifetime costs and maintenance and operation costs, among others). Procurement mechanisms should ensure timely and effective realization of the selected investment projects with better transparency and accountability. For instance, a one-off 1 percent of GDP increase in public investment would lead to greater output by 0.3 percent for countries with low efficiency and 0.6 percent for countries with high efficiency (IMF 2015).

Amid the pandemic, it is critical to strengthen contingent liability management. COVID-19 is engendering a series of fiscal risks; therefore, enhancing the quality of information on fiscal risks will help support prudent fiscal policies and be conducive for better risk mitigation. Managing public sector liabilities involves addressing not only current obligations, but also contingent liabilities. Therefore, fiscal risk management needs to assess the exposure arising from contingent liabilities—specifically, by evaluating the costs of guarantees and obligations created through quasi-fiscal operations (Balibek et al. 2020). This assessment involves the probability of the associated fiscal risks materializing and their degree of recovery. These probabilities are challenging to estimate due to the heightened uncertainty of the evolution and economic effects of the pandemic. Public sectors must monitor their budgets to meet the costs resulting from default on guarantees and the occurrence of other contingent liabilities.

Public Debt

Sustainability post-COVID-19 will depend on the ability of Sub-Saharan African countries to alleviate their mounting debt burdens and create increased fiscal space. According to volume 21 of *Africa's Pulse*, effective economic policies, which include macroeconomic and debt management, will increase a country's capacity to repay its debts. Enhancing debt management requires better debt transparency and improved efficiency in the use of borrowed resources to expand the fiscal space. Creating fiscal space will help the economy cushion the effects of the pandemic crisis and avoid a deeper recession—including in countries with less diversified economic structures (section 2). The Jobs and Economic Transformation agenda (as captured by spatial integration, sectoral reallocation, and technological upgrading; see section 3) provides a policy framework for Sub-Saharan Africa to implement structural reforms, diversify trade, boost investments in non-resource-based sectors, accelerate digitalization, and increase productivity in agriculture. The resulting productivity-driven growth and job creation will rebuild the economy's fiscal buffers. These types of policies generate a steady flow of revenues to enlarge a country's capacity to repay its debt obligations and hence support to build up the fiscal space.

Managing a country's borrowing patterns will reduce the risk profile of debt and may help alleviate the adverse growth effect of the pandemic shock. Therefore, the impacts of shocks will soften toward the domestic economy. Accumulating external debt by official creditors is less risky than debt by private creditors (see section 2). The recent shift in the composition of debt from public creditors to private creditors has brought about a series of risks (currency risks, interest rate risks, shorter intervals maturity risks, uncertain collateral risks, national security risks, and refinancing risks). The emergence of new creditors has increased the opacity in African debt (non-Paris Club governments). Therefore, the issue of greater debt transparency has become more complex. The lack of disclosure in debt data may lead to mispricing sovereign bonds and associated default risks (Horn, Reinhart, and Trebesch 2019). This leads to greater risks associated with massive hidden debt operations and greater (than expected) interest payments, which impose heavier government burdens (World Bank 2020).

Investing in data transparency brings substantial benefits to a country. Enhancing transparency and institutional quality would improve debt management practices by providing reliable information and imposing constraints on policy making (Fischer 2003). For instance, Kubota and Zeufack (2020) investigate the potential benefits of improving data transparency. They find that better data transparency reduces the country's cost of external borrowing and hence diminishes debt service. The reduction of sovereign spreads is much larger when data transparency and debt management (measured by reductions in external debt burden) are jointly improved. Essentially, this effect only kicks in if institutional quality is above a certain level, suggesting that data transparency alone may not be enough. Debt transparency¹⁰ involves expanding the country's capacity in public debt reporting, public debt management, and fiscal risk management.

Debt transparency is crucial to design adequate borrowing strategies and appropriately plan investment decisions. The debt reporting heatmap¹¹ shows that the coverage of debt instruments is complete for external and domestic debt (including guarantees by the central government if applicable) for 23 countries in the region (green area). Debt data can be readily accessed through centralized sources (for example, a single report or website) for 21 countries in Sub-Saharan Africa (green area). For instance, some African governments have started publishing debt bulletin reports on a regular basis (with frequencies varying across countries), including information on SOE obligations (Ghana and Mali), different types of debt instruments (the Comoros and Mauritania), the financial terms of each new loan, creditor names and loan amounts (Madagascar), and information on collateralized loans (Guinea). Togo is publishing online annual fiscal risk statements with an evaluation of the medium-term debt strategy.

Poor performance in debt transparency across countries in the region comes from the lack of annual borrowing plans (24 countries) and contingent liabilities (22 countries). This is the result of weak legal frameworks, lack of audits, poor data administration and internal control, and low staffing capacity. Consequently, these countries do not have suitable strategies for a debt management plan or do not monitor potential risks on debt borrowings. The heatmap reports on 20 countries in the region that do not report their debt management strategy (red area) and 19 countries that report an annual borrowing plan with targets for domestic and external debt (table 1.1). Therefore, almost half of the countries in Sub-Saharan African publish their debt management strategy on a regular basis, while the rest of the countries in the sample lack transparency in their strategy. Improving debt transparency in the annual borrowing plan and reporting of contingent liabilities would strengthen a country's debt management and strategies to borrow at better financial terms and conditions and monitor potential risks to avoid any possible crisis and heavy debt burdens.

¹⁰ Debt transparency includes the production and punctual publication of debt indicators, debt bulletin reports, financial terms of each new loan, creditor names and loan amounts, and information on collateralized loans.

¹¹ Table 1.1 presents the set of indicators that help shape the public debt reports heatmap matrix for Sub-Saharan African countries. This matrix covers three main areas: public debt statistics dissemination practices, publication of key debt management documents, and identification of fiscal risks stemming from contingent liabilities. Therefore, the matrix indicates debt transparency by assessing public debt dissemination practices.

TABLE 1.1: Public Debt Reporting Heatmap

Country	Public Debt Reporting						Public Debt Management		Fiscal Risk Management
	Data Acces- sibility	Instrument coverage	Sectorial coverage	Info on last loans contracted	Periodicity	Time lag	Debt Management Strategy	Annual borrowing plan	Contingent liabilities
Benin	Green	Green	Yellow	Green	Green	Green	Green	Green	Orange
Burkina Faso	Orange	Green	Orange	Red	Yellow	Orange	Green	Green	Red
Burundi	Red	Red	Red	Red	Red	Red	Red	Red	Red
Cabo Verde	Green	Green	Yellow	Red	Green	Yellow	Green	Green	Red
Cameroon	Orange	Green	Orange	Yellow	Yellow	Orange	Green	Orange	Orange
Central African Rep.	Red	Red	Red	Red	Red	Red	Red	Red	Red
Chad	Red	Red	Red	Red	Red	Red	Red	Red	Red
Comoros	Red	Red	Red	Red	Red	Red	Red	Red	Red
Congo, Dem. Rep.	Green	Green	Green	Green	Green	Yellow	Green	Green	Orange
Congo, Rep.	Green	Yellow	Yellow	Red	Green	Green	Red	Orange	Red
Côte d'Ivoire	Yellow	Green	Green	Red	Green	Yellow	Green	Red	Orange
Eritrea	Red	Red	Red	Red	Red	Red	Red	Red	Red
Ethiopia	Green	Green	Yellow	Yellow	Green	Green	Green	Red	Orange
Gambia, The	Yellow	Green	Orange	Green	Green	Yellow	Green	Red	Orange
Ghana	Yellow	Green	Orange	Green	Green	Green	Green	Orange	Green
Guinea	Green	Green	Green	Green	Yellow	Green	Green	Red	Red
Guinea-Bissau	Red	Red	Red	Red	Red	Red	Red	Orange	Red
Kenya	Green	Green	Yellow	Orange	Green	Green	Green	Red	Orange
Lesotho	Red	Red	Red	Red	Red	Red	Green	Orange	Red
Liberia	Green	Green	Yellow	Green	Green	Green	Red	Orange	Red
Madagascar	Green	Green	Orange	Yellow	Green	Orange	Green	Green	Orange
Malawi	Green	Green	Yellow	Green	Yellow	Green	Green	Red	Orange
Mali	Green	Yellow	Orange	Red	Green	Orange	Green	Orange	Green
Mauritania	Green	Orange	Orange	Red	Yellow	Yellow	Red	Red	Red
Mozambique	Green	Green	Orange	Green	Yellow	Orange	Red	Red	Orange
Niger	Red	Red	Red	Red	Red	Red	Red	Orange	Red
Nigeria	Green	Green	Yellow	Yellow	Green	Green	Red	Red	Orange
Rwanda	Green	Green	Green	Red	Yellow	Green	Green	Orange	Red
São Tomé and Príncipe	Green	Yellow	Yellow	Red	Green	Green	Red	Red	Red
Senegal	Orange	Yellow	Orange	Yellow	Yellow	Orange	Green	Orange	Red
Sierra Leone	Green	Green	Orange	Green	Yellow	Orange	Red	Red	Red
Somalia	Red	Red	Red	Red	Red	Red	Red	Red	Red
South Sudan	Red	Red	Red	Red	Red	Red	Red	Red	Red
Sudan	Red	Red	Red	Red	Red	Red	Red	Red	Red
Tanzania	Green	Green	Orange	Red	Green	Green	Green	Orange	Red
Togo	Green	Green	Orange	Green	Green	Green	Green	Orange	Orange
Uganda	Green	Green	Green	Yellow	Green	Orange	Green	Orange	Green
Zambia	Yellow	Green	Orange	Yellow	Yellow	Orange	Red	Red	Orange
Zimbabwe	Green	Green	Orange	Red	Yellow	Orange	Red	Red	Orange

Source: World Bank 2020g. World Bank Debt Reporting Heatmap. Link: <https://www.worldbank.org/en/topic/debt/brief/debt-transparency-report>

Debt Relief and Fiscal Space

The DSSI was introduced as an option to create fiscal space for the poorer countries in the world. Broadly speaking, debt relief or suspension initiatives potentially aim at releasing additional resources and injecting more liquidity; hence, they aim to enlarge the fiscal space of African governments. Participation in the DSSI has trade-offs, as eligible nations fear a downgrade of their sovereign debt ratings.

Some countries have benefitted from the DSSI as it has provided a cushion against the pandemic crisis. In April, the World Bank's Development Committee and the G20 Finance Ministers endorsed the DSSI to grant debt service suspension to the poorest countries and assist them in managing the adverse economic impact of the COVID-19 pandemic. The DSSI was devised as another element in the policy makers' toolkit to redirect resources to fight the pandemic. For instance, the DSSI allows the eligible countries to suspend principal or interest payments on official bilateral debt from May 1 through the end of 2020. Of the 73 eligible countries at the time the DSSI program was announced, 38 are in Sub-Saharan Africa. Only 28 countries in the region have signaled that they will participate in the DSSI. The total potential relief for these 28 countries would amount to US\$5.2 billion—with about half of this amount being the potential DSSI savings for Angola, the Sub-Saharan African country that benefited the most from this initiative (table 1.2).

The risks associated with DSSI participation may prevent countries from seeking additional relief. These risks are (1) applying for the DSSI may lead to downgrades in the country's sovereign credit ratings; (2) the amount of released resources is very limited for the eligible countries; and (3) it is not easy to coordinate among private creditors, in the event of their participation, due to their profit-seeking nature. For example, as of September 2020, 43 of the 73 eligible countries have signaled their participation in the DSSI. Eligible countries have not fully embraced the DSSI due to the prospects of credit rating downgrade and preference for keeping their access to global financial markets by repaying their obligations. They fear that any suspension of interest payments may trigger sovereign ratings downgrades and restrict future access to private creditors. Countries with outstanding Eurobond stocks are also reluctant to join the DSSI, due to the stringent terms of their Eurobond payment plans (Nye 2020).

The DSSI would postpone only a minority of the debt service payments of all eligible Sub-Saharan African countries. In the current DSSI reference period, official bilateral loans represent 44 percent of total payments (Bery et al. 2020). With the fast growth of Eurobond markets in developing countries—and, particularly, Sub-Saharan African countries—the G20 has called on private creditors to participate in the debt suspension initiative on comparable terms. International bonds and bank loans represent 56 and 32 percent of the private sector public and publicly guaranteed debt owed by DSSI-eligible countries in the region, respectively. Debt servicing owed to private creditors due between May and December 2020 amounts to 28 percent of total servicing. It is then critical to include bondholders in this initiative. It has been argued that the suspension of government debt obligations to private sector creditors needs to be justified as necessary: a mandatory and immediate mechanism of private sector participation might be needed through a blanket restructuring of terms (Bolton et al. 2020).

Source: World Bank, <https://www.worldbank.org/en/topic/debt/brief/covid-19-debt-service-suspension-initiative>.

TABLE 1.2: How DSSI Benefits Sub-Saharan African Countries
Estimates as of September 22, 2020

Country <i>d/</i>	DSSI Participation	Risk of Debt Distress		DSA Date Publication	Potential DSSI Savings <i>a/</i>	
		External <i>b/</i>	Overall <i>b/</i>		(US\$ million)	(% 2019 GDP)
Angola <i>c/</i>	Yes	..	..	..	2,645.6	3.1%
Benin	No	Moderate	Moderate	20-May	13.7	0.1%
Burkina Faso	Yes	Moderate	Moderate	20-Apr	23.3	0.2%
Burundi	Yes	High	...	15-Apr	3.9	0.1%
Cabo Verde	Yes	High	High	20-Apr	14.9	0.7%
Cameroon	Yes	High	High	20-May	276.1	0.7%
Central African Republic	Yes	High	High	20-Apr	6.3	0.3%
Chad	Yes	High	High	20-Jul	61.0	0.5%
Comoros	Yes	Moderate	Moderate	20-Apr	2.3	0.2%
Congo, Dem. Rep.	Yes	Moderate	Moderate	20-Apr	104.4	0.2%
Congo, Rep.	Yes	In distress	In distress	20-Jan	146.2	1.3%
Côte d'Ivoire	Yes	Moderate	Moderate	20-Apr	232.1	0.4%
Ethiopia	Yes	High	High	20-Apr	511.3	0.5%
Gambia, The	Yes	High	High	20-Apr	11.5	0.7%
Ghana	No	High	High	20-Apr	354.1	0.5%
Guinea	Yes	Moderate	Moderate	19-Aug	129.7	0.9%
Guinea-Bissau	No	Moderate	...	18-Jun	0.9	0.1%
Kenya	No	High	High	20-May	802.6	0.8%
Lesotho	Yes	Moderate	Moderate	19-Apr	9.5	0.3%
Liberia	No	Moderate	High	20-Jun	1.8	0.1%
Madagascar	Yes	Moderate	Moderate	27-Aug	24.0	0.2%
Malawi	Yes	Moderate	High	20-May	17.1	0.2%
Mali	Yes	Moderate	Moderate	20-Apr	52.3	0.3%
Mauritania	Yes	High	High	20-Apr	90.0	1.2%
Mozambique	Yes	In distress	In distress	20-Apr	159.0	1.1%
Niger	Yes	Moderate	Moderate	20-Apr	25.8	0.2%
Nigeria <i>c/</i>	No	..	..	..	107.5	0.0%
Rwanda	No	Moderate	Moderate	20-Jun	12.6	0.1%
São Tomé and Príncipe	Yes	In distress	In distress	20-Apr	2.1	0.5%

Country <i>d/</i>	DSSI Participation	Risk of Debt Distress		DSA Date Publication	Potential DSSI Savings <i>a/</i>	
		External <i>b/</i>	Overall <i>b/</i>		(US\$ million)	(% 2019 GDP)
Senegal	Yes	Moderate	Moderate	20-Apr	131.7	0.6%
Sierra Leone	Yes	High	High	20-Jun	7.0	0.2%
Somalia	No	In distress	In distress	20-Mar	..	..
South Sudan	No	In distress	In distress	19-Jun	..	..
Tanzania	Yes	Low	...	18-Jan	148.9	0.2%
Togo	Yes	Moderate	High	20-Apr	25.8	0.5%
Uganda	Yes	Low	Low	20-May	95.4	0.3%
Zambia	Yes	High	High	19-Aug	139.2	0.6%

Note: DSA = Debt Sustainability Analysis; DSSI = Debt Service Suspension Initiative; GDP = gross domestic product; IDA = International Development Association; IDS = Integrated Data Service; WEO = World Economic Outlook.

- a. Estimated debt service payments owed. IDS data based on monthly projections for May-December 2020, based on end-2018 public and publicly guaranteed debt outstanding and disbursed. Data for South Sudan are not available. GDP data based on October 2019 WEO.
- b. Reflects published DSA ratings as of end-June 2020.
- c. Not covered under the joint Bank-Fund Debt Sustainability Framework for Low-Income Countries.
- d. IDA countries as of FY2020 and Angola.

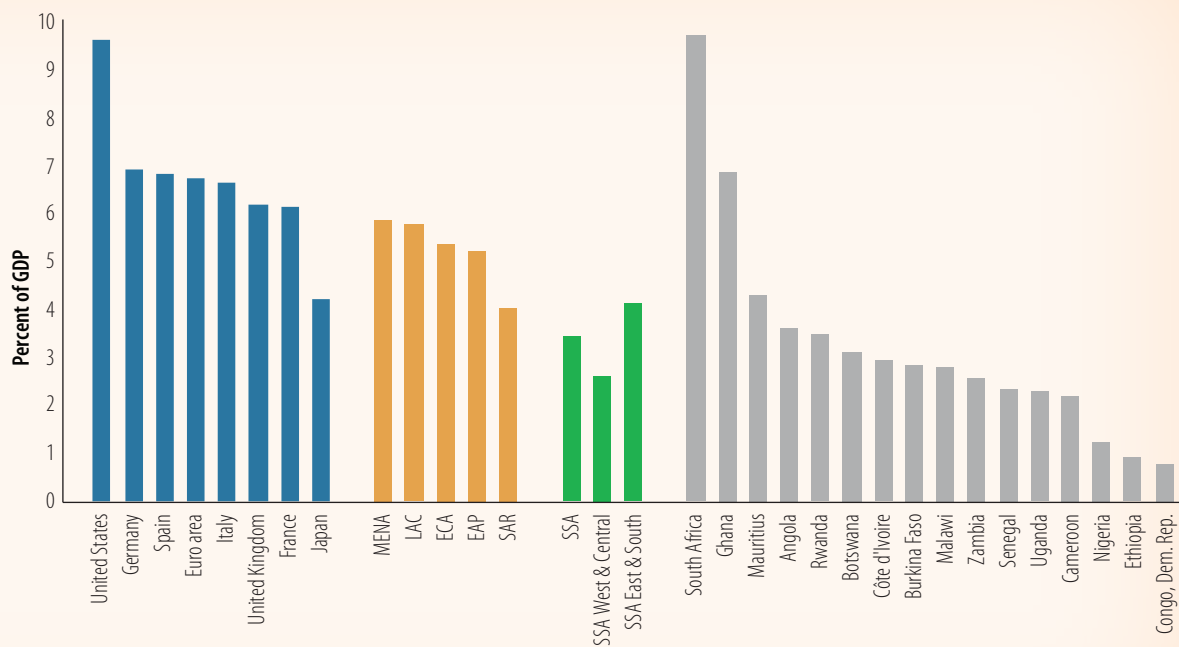
Making the Case for Greater International Support

Sub-Saharan African governments have put forward swift and significant measures to protect lives, livelihoods, and the future in response to the COVID-19 pandemic. However, the fiscal support deployed by governments in the region is smaller than that of advanced countries and other developing regions. The unprecedented fiscal support resulted in an increase of fiscal deficits in 2020 by 9.7 percentage points of GDP in the United States, 6.8 percent in the euro area, and 6.2 percent in the United Kingdom. Those amounts are considerably larger than the 3.5 percentage points of GDP increase in fiscal deficits in Sub-Saharan Africa in 2020—and, particularly, countries with the largest populations of poor people in the region, such as Nigeria (1.3 percent), Ethiopia (1.0 percent), and the Democratic Republic of Congo (0.8 percent) (figure 1.54).¹² Therefore, the COVID-19 pandemic is erasing some of the hard-earned developmental gains in Sub-Saharan Africa over the past two decades. The Africa region still needs ample financing of investments in physical capital, human capital, energy, and infrastructure to pave the way for a sustained and resilient recovery. Support from the international community to promote financing, capacity development, and debt relief is vital. Debt relief initiatives in Sub-Saharan Africa should assist countries in enduring the impact of the pandemic today and build the foundations and capabilities for the ensuing economic recovery.

¹² The exception is South Africa, which has announced a fiscal stimulus package that amounts to 10 percent of GDP. However, a small proportion of this package is new spending.

The average increase in the fiscal deficit in Sub-Saharan Africa in 2020 is considerably smaller relative to that of advanced economies.

FIGURE 1.54: Fiscal Deficit Increase in Selected Regions and Countries, 2020



Source: World Bank, Global Economic Prospects.

Note: The figure reports the change in general government fiscal deficits. EAP = East Asia and the Pacific; ECA = Eastern Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa

Sub-Saharan Africa has the opportunity to put in place a policy agenda to foster an inclusive, green, and smooth recovery. However, the lack of external financial assistance could limit the prospects of such a recovery. Debt relief, increased grants, and concessional financing are needed. Helping Africa recover from the pandemic is in the interest of the world. Half of the world's poor live in Sub-Saharan Africa, a region that also houses the largest number of fragile countries. The pandemic is deepening the structural problems in the region, and fragile, conflict, and violence situations could spill across borders and become regional and global security threats. Beyond security, investing in Sub-Saharan Africa is indispensable. The region constitutes a large market for global trade and investments: the African Continental Free Trade Area (AfCFTA), once fully implemented, will become the largest free trade area in the world in terms of membership. The AfCFTA will cover a market of 1.3 billion people and US\$3.4 trillion in economic activity. By 2050, Sub-Saharan Africa will account for one-third of the global labor force. This implies that the young population in the region will drive labor demand and serve as an engine of global growth in the future.

CHARTING THE COURSE FOR SUSTAINED RECOVERY IN AFRICA

Sub-Saharan Africa appears to have avoided the worst of the COVID-19 pandemic so far. Infections and the death toll have not been as extensive as previously anticipated. As of end-September, the region had one confirmed case for every thousand people and about 25,000 deaths. These low numbers can be partly explained by governments that have acted rapidly, followed science, and incorporated innovative solutions.¹³ Drawing from the lessons of previous epidemics, African countries implemented effective communication strategies as well as a series of stringent containment measures—including airport screenings, curfews, and banning mass gatherings, among others. Still, the health crisis is not over and governments need to continue their public health campaigns and the strengthening of public health systems.

The COVID-19 crisis is not being wasted among countries in the region. They are seizing the opportunity created by this crisis to accelerate the structural reform agenda. South Africa recently announced sweeping reforms to address energy shortages and reduce its dependence on the state public utility Eskom. Private companies have been invited to submit bids to supply additional renewable energy to the grid, while municipalities can directly procure electricity from private sector renewable energy producers, thus ending the Eskom single-buyer model. Businesses (mining and other industries and commercial enterprises) are allowed to produce electricity for their own use.¹⁴ In Nigeria, the government has taken important steps to reform its subsidy regime. It has eliminated the gasoline subsidy and established a market-based pricing mechanism with no price ceilings.¹⁵ The gasoline price is set monthly by the Petroleum Products Regulatory Agency (PPRA) from market-based costs. When international petroleum product prices start to recover, the PPRA will allow price increases accordingly. The Ethiopian government continues making progress with the deregulation of telecommunications. In May 2020, it called for Expressions of Interest for new telecommunications licenses. As the government and private sector moved to remote working arrangements due to COVID-19, the government also fast tracked the approval of the e-Transactions proclamation, which establishes a National Digital Economy Council and provides the legal basis for use of electronic messages and documents in interaction with the government and businesses.¹⁶

As the COVID-19 pandemic affected lives and livelihoods in the region, governments implemented unprecedented emergency relief measures to alleviate the impact on their (most vulnerable) population. By mid-September, 46 countries in Sub-Saharan Africa had put in place 166 social protection measures—with social assistance (for example, cash-based and in-kind transfers, utility waivers, and public works) representing 84 percent of these measures.¹⁷ Social protection programs have proven to be a critical tool to mitigate the social impact of the pandemic. At the same time, the crisis has been a driver of innovation in service delivery by promoting government-to-person payments. For instance, digital technologies have expanded coverage of social safety nets and protected beneficiaries amid social distancing requirements.¹⁸ Digital campaigns have played a role in raising awareness and mobilizing people (Namibia,

¹³ For more details on successful health interventions in the region, see box 1.1.

¹⁴ World Bank (2020i).

¹⁵ World Bank (2020j).

¹⁶ World Bank (2020e).

¹⁷ In East and Southern Africa, 77 percent of all social protection measures (92) correspond to social assistance. That proportion increases to 92 percent of all social protection measures (74) in West and Central Africa. For a detailed description of the social protection measures implemented by Sub-Saharan African governments, see Gentilini et al. (2020).

¹⁸ See Bodewig et al. (2020).

South Africa, and Togo), although digital screening on the very large number of applicants can have its limitations. Countries have used different approaches to deliver scaled-up payments to beneficiaries, including mobile money accounts (Togo's Novissi program) and e-wallets (Namibia), among others. Digital payments can be spurred by lowering transaction charges (Rwanda and Kenya); however, these fee reductions/waivers may be unsustainable on a commercial basis over a longer period.¹⁹ Finally, countries in the region need to continue scaling up social protection programs to protect the lives and livelihoods of the most vulnerable groups amid the pandemic and help them thrive in the post-pandemic period.

The importance of the digital economy has been underscored during this pandemic. Digital infrastructure, technologies, and services have enabled governments, businesses, and society to continue functioning amid lockdowns and social distancing. Digital technologies have been found to improve household welfare, boost firms' productivity, and create better jobs for more people. Despite these potential benefits, access to high-speed internet is low among people and firms in Sub-Saharan Africa. Reforms to address the digital infrastructure gaps, affordability (of devices and services), and digital literacy are critical to expand access to digital technologies and reduce the digital divide across gender, firm size, and urban-rural areas. The regulatory environment needs to provide the right incentives for fast digital technology adoption and more competition among mobile operators—including actions to attain universal affordable access to high-quality communications services, support of critical functions (say, hospital emergency services and e-government), public warning systems, and high network resilience (cybersecurity). Digital skills, which rest on foundational human capital, are often linked to better opportunities and yet they are not fully exploited. Ensuring inclusiveness in the provision of digital skills, at different levels, will be crucial to prevent the exclusion of already marginalized segments of the population from the benefits of connectivity—including women, rural areas, and micro, small, and medium-size enterprises. Finally, adequate analog complements are critical to reap the benefits of the digital economy. Reforms to improve the reliability of the electricity supply are crucial.²⁰

The COVID-19 pandemic has heightened the focus on agricultural productivity and food security in Sub-Saharan Africa. Digital technologies can help boost agricultural productivity. By providing farmers access to information on available technologies (for example, improved seeds, fertilizers, and tractors) and how to use them efficiently, digital technologies can facilitate their adoption.²¹ Containment measures to fight the pandemic put food security at risk in the region. Segmented markets and disrupted food supply chains led to severe supply and demand mismatches in traditional markets. Digital technologies help improve farmers' access to upstream and downstream markets by facilitating price discovery, improving buyer-seller matches, and digitally enabling collective action to increase farmers' inclusion and bargaining power in agri-food value chains. Quality control and traceability throughout the food supply chain can also be enhanced by digital technologies (for example, the Namibian Livestock Identification and Traceability System).²² Strengthening urban and rural linkages will help accelerate the country's process of economic transformation. Boosting agricultural productivity, building resilient supply chains (of

19 For more details on digital solutions in social assistance transfers during COVID-19, see Gelb and Mukherjee (2020).

20 Section 3 discusses in more detail the drivers and consequences of adopting digital technologies, as well as the policy implications for the countries in the region.

21 Ample references on the impact of digital technologies on agricultural productivity can be found in volume 19 of *Africa's Pulse* (World Bank 2019).

22 World Bank (2020a) illustrates the impact of digital technologies on farmers' output and productivity.

food and agricultural inputs), and urban-rural planning to improve local food distribution are vital. Scaling up infrastructure investments—particularly, improving access to basic infrastructure services—is also critical.

The COVID-19 pandemic led to an unprecedented disruption in global trade, as worldwide consumption and production scaled down. The World Trade Organization estimates that the volume of global merchandise trade shrank by 18.5 percent year-on-year in 2020Q2 at the height of the lockdown measures implemented across the globe. Countries in the region with higher exposure to global trade (that is, commodity exporters and those inserted in global value chains) are suffering the biggest blows from the pandemic. Yet, intraregional trade is already playing a role in mitigating the economic effects of the pandemic in Sub-Saharan Africa. Intra-African trade had been gradually rising prior to the COVID-19 pandemic, and most of the intra-African trade flows typically take place within regional economic communities (RECs), thanks to lower tariffs among member countries.²³ As global trade recovers, intraregional trade can play a role in driving greater export flows. This is the case of Kenya and the East African Community (EAC). Kenyan exports to the rest of the EAC recovered very rapidly. Exports to Uganda and Rwanda have already surpassed their pre-COVID-19 highs, and re-exports to Tanzania sharply accelerated by July.²⁴ Full implementation of the AfCFTA can play a role in expanding even more intraregional trade. Addressing tariffs, non-tariff barriers, and trade facilitation problems across countries in the region may help foster inter-REC trade. The AfCFTA can also help promote regional value chains and organize production across countries in the region. As global trade recovers, building the foundations and capabilities for a more comprehensive continental involvement in global value chains and linking them to human capital investments are critical.

²³ See Coulibaly, Kassa, and Zeufack (2020).

²⁴ See Mold and Mveyange (2020).

Section 2 COVID-19: Drivers of Cross-Country Differences in Growth Impact

The COVID-19 pandemic has generated the deeper and most synchronized decline in economic growth rates across countries in the world since World War II. Current forecasts suggest that more than 90 percent of countries in the world will experience a contraction in gross domestic product (GDP) per capita in 2020 —surpassing the 85 percent of countries in recession at the height of the Great Depression (World Bank 2020). In Sub-Saharan Africa, the economic impact of the pandemic has been severe even though the pandemic has not been as widespread as initially anticipated.¹ Uncertainty still continues as the health crisis is not over yet. Therefore, the region cannot let its guard down. An important amount of resources still needs to be distributed towards strengthening the continent's health systems and effectively protect medical personnel while guaranteeing timely and affordable healthcare for its citizens.

Despite of the synchronization of the global pandemic crisis in the world, there is still heterogeneity on the depth of the impact and the consequent policy responses across countries and across regions. Those cross-country differences in terms of different structural characteristics and policy responses may have shaped the growth impact differences. This section finds that Sub-Saharan Africa may appear to have suffered a lesser blow from the pandemic than other developing regions. For instance, the median decline in 2020 growth across Sub-Saharan African countries (5.4 percent) is smaller than that of East Asia and the Pacific (6 percent), the Middle East and North Africa (6.9 percent), Europe and Central Asia (7.6 percent), and Latin America and the Caribbean (7.7 percent). Still, there is great variability in the 2020 growth decline across Sub-Saharan African countries. Three countries have a decline in economic growth smaller than three percentage points (Malawi, Mozambique, and Burundi). Angola, Ghana, Nigeria, and Senegal exhibit declines in growth that are in line with the median of the region. South Africa, on the other hand, has a downward revision in growth of 8 percentage points. Finally, countries that are highly dependent on commodity revenues or tourism experienced a decline in growth that exceeded 10 percentage points (e.g. Cabo Verde, Mauritius, the Republic of Congo, Zimbabwe, Botswana, the Seychelles, and South Sudan).

The main findings summarize as follows:

First, fiscal space plays a role in mitigating the impact or averting a deeper decline in growth in response to the pandemic. Softening the blow of future deleterious shocks will require African countries to strengthen the institutions that support a transparent, efficient, and accountable fiscal policy. Governments will need to create the pre-conditions to foster domestic resource mobilization and improve their efficiency of public spending. Introducing digital technologies to broaden the tax base and strengthening tax administration are beneficial. Fostering public investment management systems has been found to boost the public investment multiplier.

Next, the composition of government debt matters for alleviating the adverse growth impact associated to the COVID-19 pandemic. External borrowing from official creditors entails lower risks (in terms of interest rates, maturity, and refinancing) than from private creditors. In one

¹ The extent of the spread of the pandemic might also be underestimated, as testing is lower than other regions in the world (section 1).

of the striking findings, countries with less risky debt profiles (i.e. countries with a greater propensity to borrow from official creditors—including multilateral organizations) tended to exhibit a lower decline in their growth rate. This result may imply that managing debt profiles (i.e. reducing the government debt risk profile) may help tackle vulnerabilities, and hence increase resilience.

Third, diversifying trade patterns across markets is crucial as intra-regional trade integration may help secure the supply chains of essential goods—particularly, during pandemics. Consequently, Sub-Saharan Africa needs policies to foster greater intra-regional trade integration. This will help increase export market diversification and build up resilience against any shocks such as a pandemic crisis. The evidence in this section shows that countries that are more exposed to trade with advanced countries have suffered a greater decline in economic growth (e.g. through global value chains). At the same time, countries that have greater intra-regional trade appear to have been relatively shielded.

Fourth, diversifying trade across products is also important in the road to recovery. Countries with greater commodity trade exposure—more, specifically, a larger share of commodity exports in GDP—tend to experience a larger downfall in economic growth. During the pandemic period, more diversified value-added exporters have also experienced a large decline in economic growth due to the disruption in global value chains. On the other hand, some less diversified oil exporters were able to mitigate a larger decrease in growth due to saving prior to this pandemic. Regardless of this result, as the global economy recovers, African countries still have to advance their export product agenda—especially away from commodities and towards goods and services with value addition. Designing strategies to diversify exports or create value addition in commodities (e.g. agribusiness, and direct marketing) can improve the ability of countries to develop resilience against shocks.

Finally, the quality of institutions is essential to kick in the effects of policies: stronger policies along with better institutional quality enabled countries to record a lower decline in economic activity in the pandemic period. Enhancing institutions, consequently, help design and implement effective policy responses to recover rapidly and thrive in the aftermath of the pandemic.

What would take for Sub-Saharan African countries to recover faster and more sustainably? A recovery from the disruption in global supply chains may take time (as well as other external drivers of growth). Therefore, it is indispensable to find ways to reactivate domestic and regional engines of growth. The full implementation of the African Continental Free Trade Area (AfCFTA) will help boost the continent's competitiveness and promote the development of regional value chains (section 3). To engineer a recovery that surpass pre-pandemic levels, key elements of the roadmap includes building up institutions and generating fiscal space—including measures to mobilize domestic resources, promote public investment, and implement debt transparency and management.

2.1. COVID-19: AN EXPLORATORY ANALYSIS OF THE OUTPUT EFFECTS ACROSS COUNTRIES

The COVID-19 shock that has hit the world economy and resounded throughout African nations is the combination of demand and supply shocks, which tend to covary. Theoretically, the COVID-19 shock has both aggregate supply and aggregate demand implications.² From the supply side, the virus can affect workers' participation in economic activities and then reduce the labor supply. However, the reduction in labor supply goes beyond the number of infected people as a result of strict lockdown measures (such as travel bans, workplace, and school closings, and so on). From the demand side, the virus exposes individuals who purchase goods to infection. Therefore, private consumption declines. The access to goods is even more restricted as stores shut down or operate at reduced hours. At the same time, the uncertainty about the duration and depth of the virus may delay the spending of consumers and firms (Knightian uncertainty).³

Additionally, the lockdown measures of the COVID-19 pandemic led to the temporary closure or slowdown in operations of many factories and business. Consequently, these operations demanded fewer inputs, including less energy and reduced cargo shipping. In turn, the demand for energy, such as liquefied natural gas used in shipping, also decreased. The decreased demand for energy (i.e. oil) had an impact on international energy prices (i.e. crude oil prices), and as a result of this global shock, stock markets plunged, and oil prices fell to even lower levels.

The COVID-19 crisis led to disruptions in global supply chains. Wuhan, the Chinese city in the Hubei Province that was the initial epicenter of the epidemic, is a major transportation hub with railways, roads and expressways passing through the city and connecting to other major cities. This city is also a traditional manufacturing hub and promotes modern industrial activities in China such as the automobile industry (e.g. Peugeot Citroen, Renault, Honda, Dongfeng, among others). The lockdown imposed in Wuhan by the Chinese government led to the temporary suspension or slowdown of business in manufacturing sectors and services and disrupted global supply chains. As the COVID-19 virus spread throughout different countries in Asia, Europe, and the Americas, some governments implemented containment measures including international travel bans—thus, disrupting the transportation and tourism industries. Global and local businesses slowed down significantly, leading many workers to be laid off.

This section investigates the impacts of COVID-19 on economic growth in Sub-Saharan Africa and identifies factors that contribute to the economic resilience of countries during the COVID-19 pandemic shock. It presents linear regressions of growth on a wide array of variables (i.e. macroeconomic, trade, and financial variables). The dependent variable is the change in growth rate as measured by the difference of the 2020 GDP growth forecast undertaken by the World Bank's Global Economic Prospects in June 2020 vis-à-vis January 2020.⁴ The regression analysis is conducted for a sample of 135 developing countries, including 47 Sub-Saharan

² See Guerrieri et al. (2020).

³ Knightian uncertainty refers to the absence of any quantifiable knowledge about the occurrence of an event. Agents cannot have the information needed to set the likelihood of such event. In the presence of Knightian uncertainty, economic agents keep their safest assets in their portfolio and defer future consumption and investment plans.

⁴ Berkmen et al. (2012) use the difference between 2009 growth outturns and growth forecasts made before the crisis to provide an initial exploration of the real effects of the 2008–09 global financial crisis. The authors argue that the use of these forecasting errors enables them to avoid issues such as controlling for variations in growth rates due to differences in levels of development or cyclical positions, or other factors unrelated to the impact of the crisis.

African countries.⁵ One of the empirical results shown in annex table 1, in the online appendix, indicates that the dummy of Sub-Saharan Africa is positive and, in most cases, significant. This finding implies that (conditional on the drivers of growth) the decline in growth—although substantive—was not as large in Sub-Saharan Africa as in other developing economies in the sample. Moreover, compared with the West and Central Africa region, the East and Southern Africa region exhibited on average a smaller decline in economic growth—again, on average, and conditional on the drivers of growth. These findings raise the question: why were some regions/countries able to mitigate or avoid a deeper decline in economic growth while others were not?

Creating a cushion can make an economy more resilient against crises, and better crisis management policies can also mitigate negative impacts on economic growth. Building up fiscal space for appropriate pandemic policies matters particularly if a country has a higher degree of exposure to the global markets and their economic structure is less flexible. Diversifying trade patterns (across products and markets) is also crucial, and so is strengthening intra-regional trade in Sub-Saharan Africa, as higher commerce across borders within the region may help secure the supply chains of essential goods in times of crisis—and, particularly, during pandemics.

Although economies with greater exposure to global markets may be more susceptible to shocks from the COVID-19 pandemic, having reserves and fiscal space could prevent the economies from entering into much deeper recessions. The economic effects of the COVID-19 shock can be transmitted through three main channels, including health, trade, and financing. Regarding the health channel, annex tables 1 and 2 in the online appendix show that the estimated coefficients of government response and, especially containment and health measures, are negative and significant.⁶ Therefore, containment measures implemented by the government that target any specific segment of population or geographical area rather than generalized containment may help prevent the domestic economy from falling into a further slump. If the government fails to deliver any effective pandemic policies, then the economy suffers and growth declines further. Empirical results fail to show any significant impacts of health indicators in the regressions. This could be attributed to the fact that measuring impacts via the health channel is challenging as the COVID-19 is still a novel disease.⁷ When looking at the Country Policy and Institutional Assessment (CPIA) overall index⁸, better government policies—such as appropriate economic management policies—foster higher economic growth (figure 2.1).

An inspection of the trade channel, moreover, shows that countries with greater trade exposure tend to exhibit a deeper decline in economic growth (figure 2.2). Empirical evidence supports the existence of a negative relationship between trade exposure and growth. The deleterious effects of trade exposure can be partly explained by vulnerabilities to commodity price volatility

⁵ When accounting for the information of the variables involved in the regression analysis, the number of countries in the effective sample is up to 101.

⁶ The government response indicator (from Oxford Policy Tracker) captures a series of containment and health measures as well as economic support measures implemented by governments in response to COVID-19. The containment and health measures include school closings, workplace closings, cancellation of public events, restrictions on gathering, closure of public transportation, stay-at-home requirements, restrictions on internal movement, and international travel controls. The economic support measures record whether the government is providing direct cash payments to people who lose their jobs or cannot work, or if it is freezing households' financial obligations.

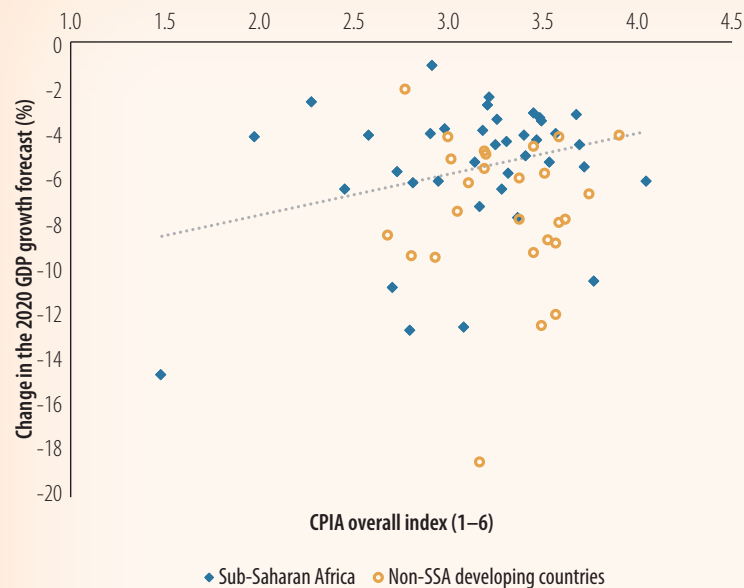
⁷ Medical researchers' work is still ongoing and in progress, and they are still finding new evidence. Accordingly, there have not always been definite treatments of COVID-19 yet.

⁸ CPIA is a broader measure of a country's policies and institutions.

(e.g. international oil prices). The estimated coefficients of international trade openness have a negative and significant impact on economic growth (i.e. -0.024 points in regression [1] in annex table 1). Furthermore, if a country or region has fewer linkages to the global financial markets—say, due to thinner domestic financial markets—the decline in economic growth through this channel would be weak or negligible. For example, in figure 2.3 those regions which have more exposure to global financial markets show a larger decrease in GDP growth than the regions with less exposure to global financial markets.⁹ Consequently, the slump in stock and oil markets explains the heavy declines in Latin America and the Caribbean (-7.7 percentage points), Europe and Central Asia (-7.6 percentage points), and the Middle East and North Africa (-6.9 percentage points) compared with relatively smaller declines in South Asia (-5.3 percentage points) and Sub-Saharan Africa (-5.4 percentage points).

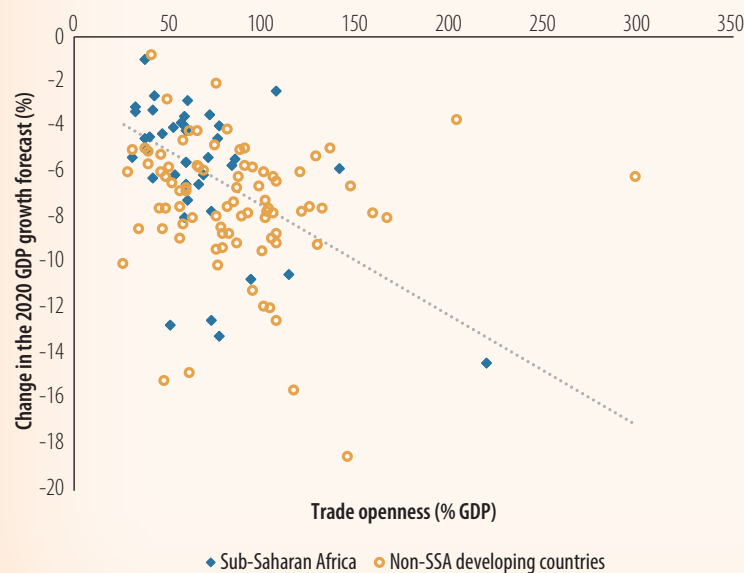
Fiscal space would help generate a cushion against crisis even if the country is highly dependent on external financing. The regression analysis finds that countries that are more dependent on external financing could experience deeper declines in economic growth. For instance, in regression [1] in annex table 1, the estimated adverse impact of (gross) capital flows on economic growth at -1.5 is significantly greater than the one

FIGURE 2.1: CPIA Overall Index vs. Change in GDP Growth



Source: World Bank World Development Indicators.
 Note: CPIA = Country Policy and Institutional Assessment; GDP = gross domestic product.

FIGURE 2.2: Trade Openness vs. Change in GDP Growth

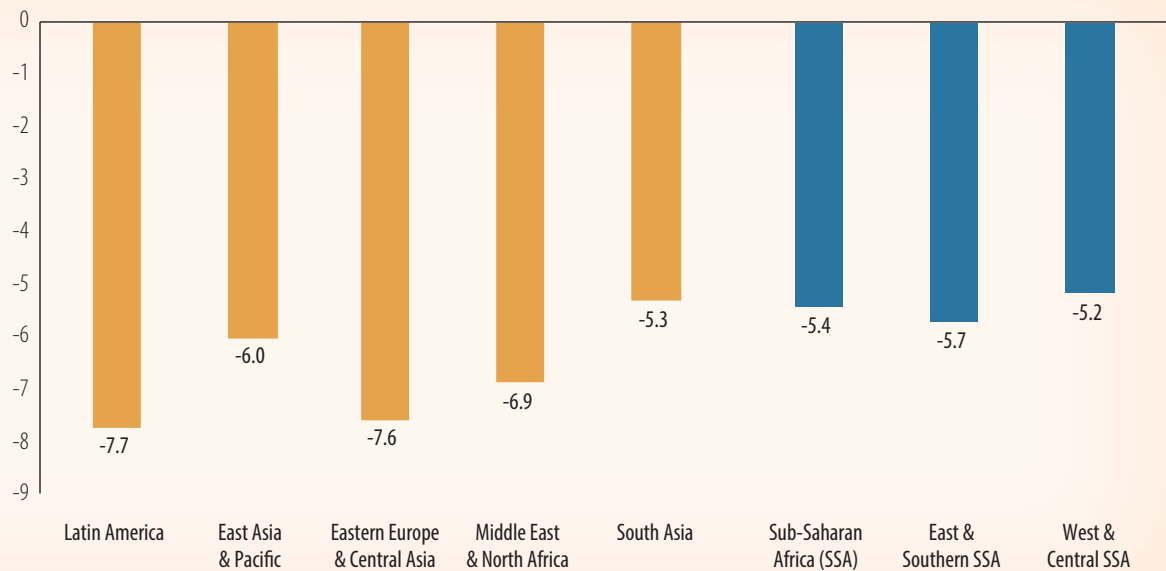


Source: World Bank World Development Indicators.
 Note: GDP = gross domestic product.

⁹ Regions such as East Asia and the Pacific, Latin America and the Caribbean, and Eastern Europe and Central Asia have more emerging market economies than regions in South Asia and Sub-Saharan Africa. Therefore, many countries in South Asia and Sub-Saharan Africa still have underdeveloped domestic financial markets.

Regions with more exposure to global financial markets experience a larger decrease in GDP growth than the regions with less exposure to global financial markets.

FIGURE 2.3: Change in the 2020 Growth Forecast, by Region (percentage points)

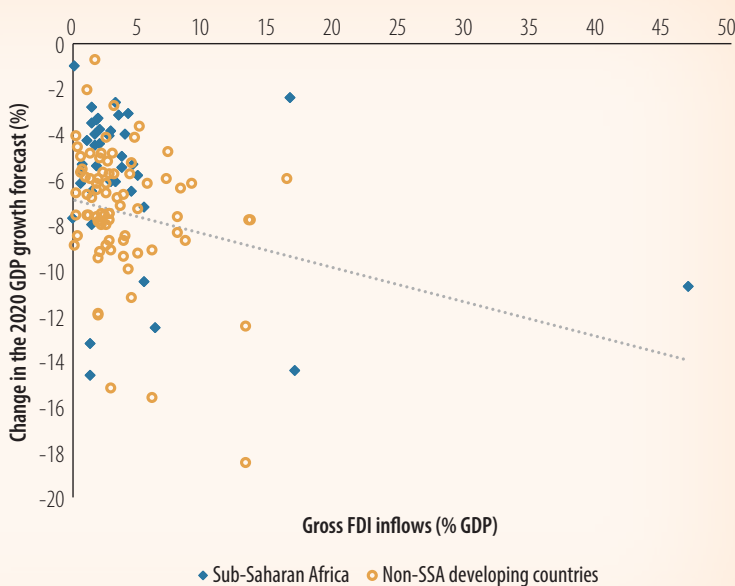


Source: World Bank Global Economic Prospects, various issues.

of trade openness. Therefore, countries with greater dependence on external financing tend to have larger declines in growth. When looking at the composition of capital inflows, the regression analysis finds that both portfolio investment inflows and other investment inflows are significantly positive at 0.28 in regression [3] of annex table 2. Consequently, portfolio investment inflows and other investment inflows help prevent from further declines in GDP

Countries with greater FDI dependence tend to have a large decline in growth.

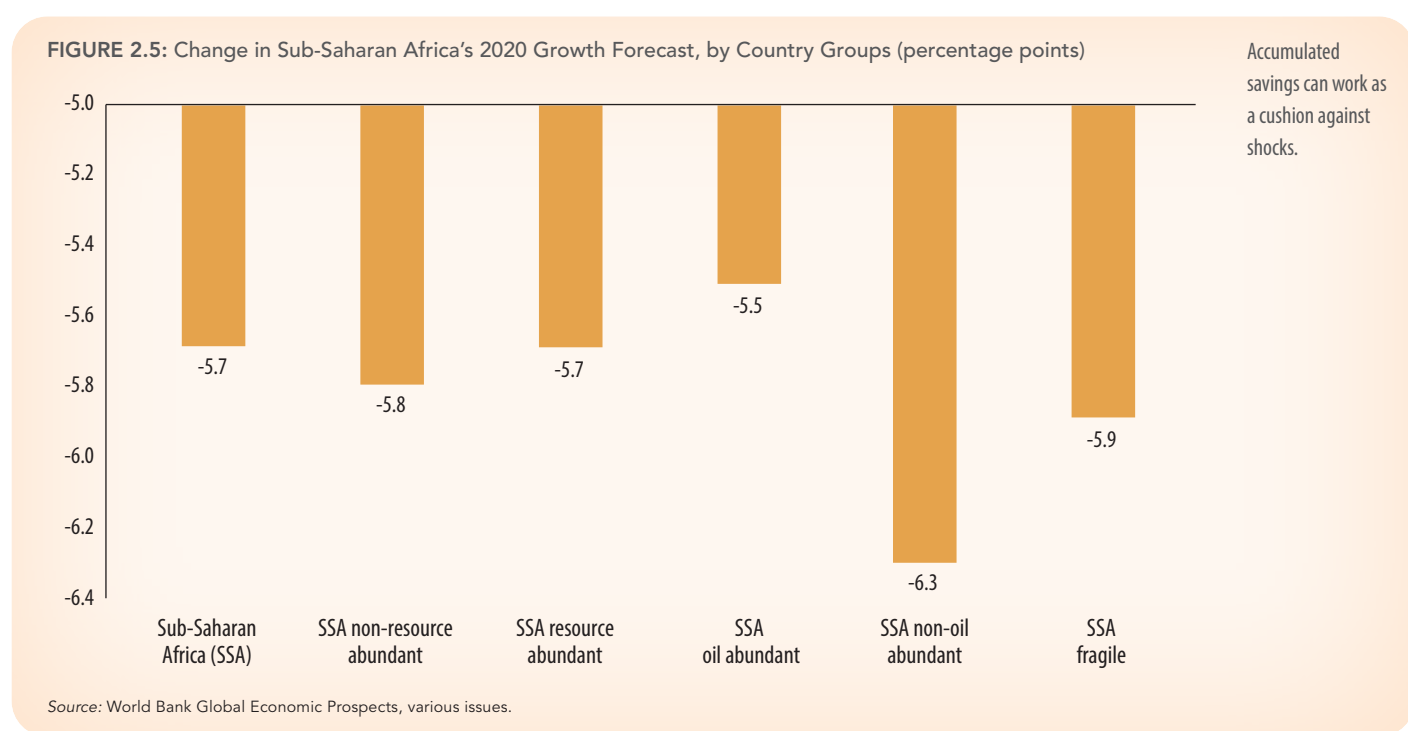
FIGURE 2.4: Gross FDI Inflows vs. Change in GDP Growth



Sources: World Bank World Development Indicators; IMF Balance of Payments Statistics 6.0.
Note: FDI = foreign direct investment; GDP = gross domestic product.

growth. Figure 2.4 illustrates that countries with greater foreign direct investment (FDI) dependence tend to have a large decline in growth. The regression results, however, do not robustly support the evidence in figure 2.4 because the coefficients of FDI flows have insignificantly negative impacts on economic growth (at -0.04 in regression [11] in annex table 2). FDI is one of the major capital flows into the Sub-Saharan Africa region. Most likely, FDI activity is more dynamic in commodity-abundant countries because those commodities attract massive foreign investments.

Although countries with more concentrated economic structures are vulnerable to the crisis, accumulated savings can work as a cushion against shocks, as shown in figure 2.5. Oil abundant countries experience lower declines at -5.5 percentage points relative to non-oil abundant countries at -6.3 percentage points in Sub-Saharan Africa (figure 2.5). Prior to the COVID-19 shock, oil exporters excluding Nigeria¹⁰ accumulated some reserves from oil export proceeds, and consequently, the resulting fiscal space from these revenues may have helped finance policy actions and reduce the adverse impact from the pandemic even if their economic structure was not as diversified. Oil abundant countries registered more favorable fiscal and current account balances in 2019, therefore, those countries had some resources in their coffers prior to the COVID-19 crisis. For instance, oil exporting countries in Sub-Saharan Africa recorded a fiscal surplus that exceeded 1 percent of GDP in 2019 and exhibited a current account deficit of around 2 percent—the smallest among commodity exporting groups in the region.



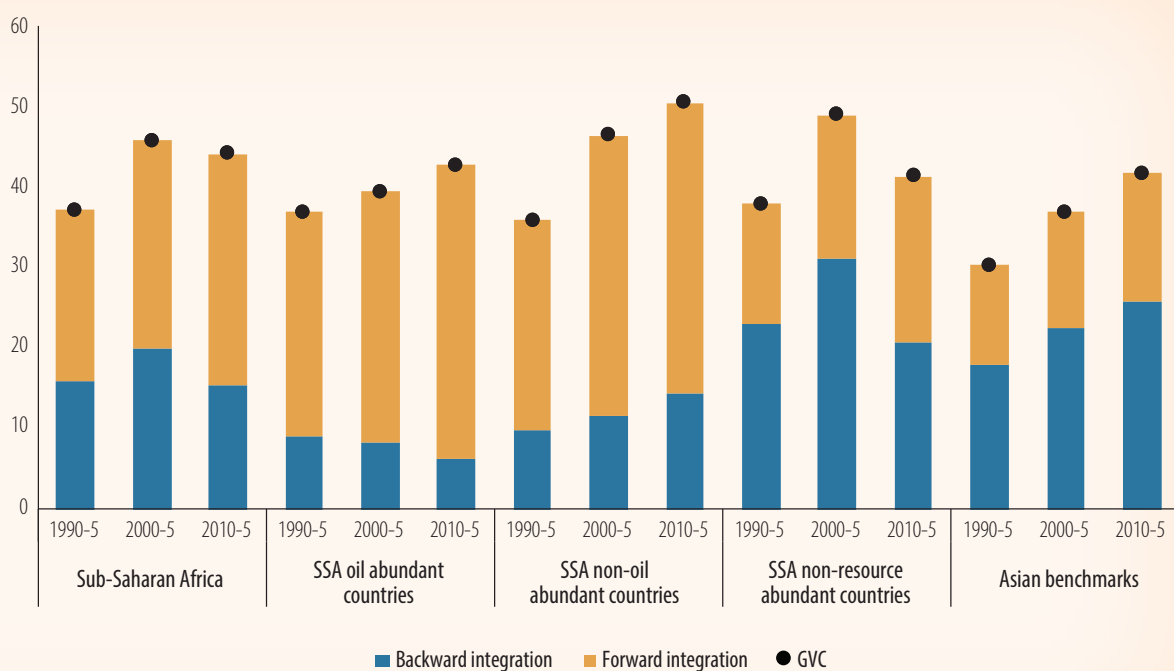
The cushion created by the fiscal space matters even if the economy's structure tends to be driven by primary goods/commodities. For instance, empirical evidence suggests that natural resource/commodity exporters experience larger negative and significant impacts on economic growth (see annex table 2). It has been often suggested that commodity trade exposure can be reduced if a country diversifies its economic structure by developing greater value addition capabilities and exporting more value-added products. Sub-Saharan Africa has indeed increased their exposure to global value chains over the past 20 years. Oil abundant Sub-Saharan African countries have a higher participation in forward integration, while non-oil abundant countries have a higher participation in backward integration from 2000–05 to 2010–15 (figure 2.6).¹¹

¹⁰ This statement explains Sub-Saharan Africa's regional average, but not the case of Nigeria since it recorded deficits.

¹¹ Section 3 provides more details on this.

Oil abundant Sub-Saharan African countries have a higher participation in forward integration, while non-oil abundant countries have a higher participation in backward integration.

FIGURE 2.6: Participation in Global Value Chains, 1990–2015 (% of gross exports)



Sources: EORA database; Coulibaly, Kassa, and Zeufack 2020.

Note: Backward integration is the share of foreign value added in a country's exports. Forward integration is the share of a country's value added in other countries' exports. Asian benchmarks = Bangladesh, Cambodia, Indonesia, and Vietnam; GVC = global value chain; SSA = Sub-Saharan Africa.

Global value chains nearly collapsed during the COVID-19 crisis, and the trade disruptions have resulted in temporary suspensions and/or slowdowns of production processes within global value chains. Annex table 2 confirms this finding, for example, with the negative and significant growth effects of countries with greater export linkages to advanced countries and the positive (although not significant) impact of intra-regional trade. Greater dependence on global value chains has deeper negative impacts on economic growth. Therefore, countries with greater participation in global value chains have been affected by the disruptions from the pandemic while intra-regional trade may provide an avenue to shield economies from the pandemic.

The regression analysis also examines the impact on growth of debt management and fiscal and/or external savings. The empirical results show that 1) accumulating external debts by official creditors are less risky than ones by private creditors, therefore, the composition of debt profiles matters, and 2) maintaining primary balance and current account surpluses helps the economy as a cushion effect in the crisis. Changes in a country's borrowing pattern will alter the risk profile and may vary the transmission mechanisms of the pandemic shock. Especially a shift in the composition of debt from public creditors to private creditors can render the economy more vulnerable, due to greater currency, interest rate, maturity (i.e. shorter intervals) and refinancing risks. Enhanced debt management requires greater debt transparency, particularly in low-income countries. Poor recording, monitoring, and reporting systems have increased opacity in the debt profiles of low-income countries. This has resulted in greater risks associated with

massive hidden debt operations and greater (than expected) interest payments which leads to heavier government burdens (World Bank 2020). Empirical evidence shows that countries with greater public debt exposure to private creditors tend to experience a larger decline in economic growth as the coefficients of public and publicly guaranteed (PPG) external debt to private creditors are negative and in some cases significant, while the ones of PPG external debt to public creditors are positive and significant (0.0752 points in regression [2] in annex table 1).

Accumulating government primary and current account surpluses helps create a cushion in the economy and enhance resilience against the crisis. Reducing general government gross debt also helps mitigate macroeconomic vulnerability in the event of economic shocks. For instance, the coefficients of the government primary balance and current account balance are positive and significant in regression [1] of annex table 1, therefore, both fiscal and external savings play a role in limiting the adverse impacts of the pandemic on economic growth. Consequently, countries with smaller primary deficits or primary surpluses have space to finance policies that could help avoid deeper declines in economic growth. The same can be said about countries that have accumulated external savings (i.e. current account surpluses). Finally, the estimated coefficients of general government gross debt are negative but insignificant in most cases, and hence a country with larger general government gross debts could still face a significant decrease in economic growth.

Section 3 Charting the Course for a Sustained Recovery in Africa

The COVID-19 pandemic has taken a heavy toll on human life worldwide. In Sub-Saharan Africa, the health impact has not been as devastating. As of end-September, the region had one confirmed case for every thousand people and about 25,000 deaths. Excluding South Africa, these numbers are even smaller (four cases for every million people and nearly 8,400 deaths). Lessons from the Ebola crisis and other previous pandemics in the region enabled policymakers to rapidly launch effective public health campaigns and impose stringent containment measures—including airport screenings, curfews, banning mass gatherings, and international travel restrictions. Innovative solutions also played a role.¹ However, the health crisis is not over yet and governments need to continue strengthening their public health systems.

The COVID-19 pandemic, on the other hand, has severely impacted economic activity in Sub-Saharan Africa—thus, jeopardizing a decade of hard-earned economic and social progress. The pandemic is pushing the region into its first recession in the past quarter century. Real gross domestic product (GDP) is expected to contract by 3.3 percent in 2020. This downturn in economic activity will cost the region US\$ 115 billion in terms of output losses (relative to a no-COVID-19 scenario). Beyond the much-needed relief measures to fight the pandemic, the policy toolkit should include policies that build greater resilience, boost productivity, and generate jobs. Charting the course for a steady recovery in Sub-Saharan Africa in the post-COVID-19 pandemic requires an agenda that embarks African countries on a path of sustained and inclusive productivity-driven growth that creates, more, better, and inclusive jobs—including for lower-income, lower-skilled people.

The Jobs and Economic Transformation (JET) agenda provides a policy framework that rests on two pillars; namely, creating and connecting to markets, and building capabilities and connecting workers to jobs. Under the first pillar, there is a series of cross-cutting policy areas that can boost investment:

- (a) Strengthening the macroeconomic policy framework and the enabling environment to provide incentives for private investment—including transparency;
- (b) Supporting the enabling sectors to boost productivity and connect firms to larger markets—including raising the depth and resilience of domestic financial sectors and providing affordable, reliable, and sustainable infrastructure and ecosystem services; and
- (c) Strengthening governance and institutions, implementing sound public investment management systems, and guaranteeing environmental sustainability.

Under the second pillar, the cross-cutting policies include:

- (a) Supporting human capital accumulation to improve labor productivity, and
- (b) Implementing labor market reforms and the provision of basic social protection to support transitions.

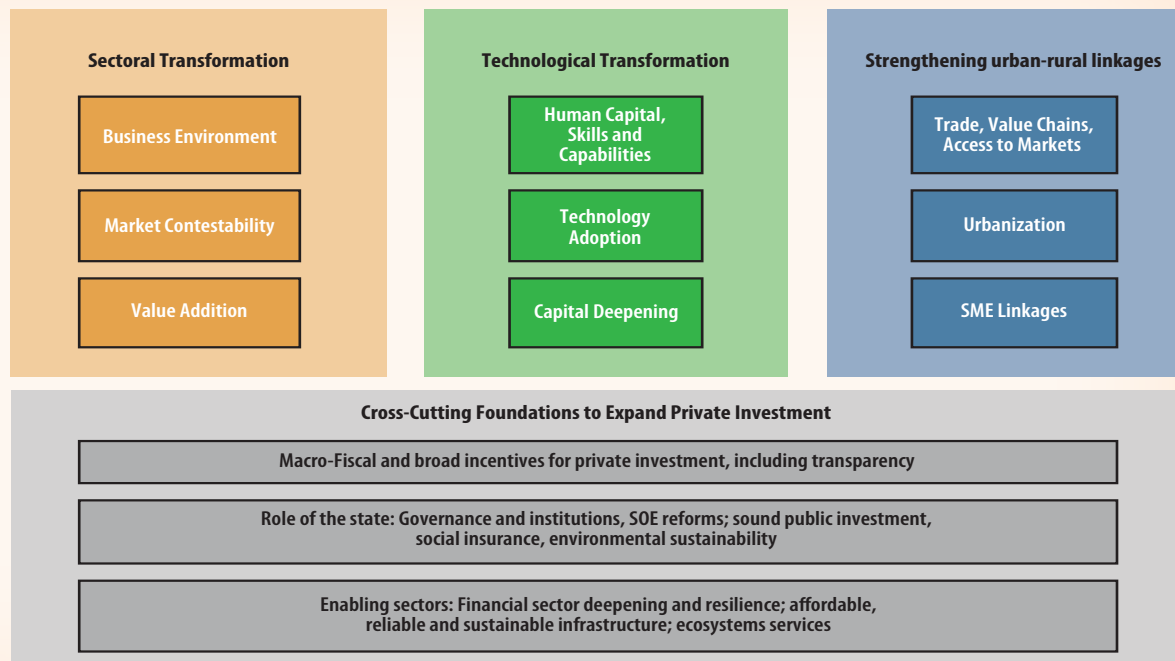
Efficient implementation of such policies would enable African economies to recover faster and thrive in the post-COVID-19 world.

¹ Box 1 summarizes the innovative responses to the COVID-19 pandemic in Mauritius and Senegal.

The economic transformation of the region requires addressing the different drivers of productivity (including their cross-cutting foundations), and the policy priorities should be tailored according to the country context. In turn, the policy priorities should operate through three core and inter-related transformations (sectoral transformation, technological transformation, and rural-urban linkages) to put countries on a high and inclusive path of economic growth (figure 3.1).

The JET agenda prioritizes and supports policies and investment that foster country-specific economic transformation.

FIGURE 3.1: Jobs and Economic Transformation



Source: World Bank (2020h).

Cross-Cutting Foundations to Boost Productivity and Job Creation

A series of cross-cutting policies that expand investment in physical and human capital are critical to build the foundations of the JET policy agenda. This section briefly discusses the importance of sound macroeconomic and fiscal frameworks, the quality of institutions and human capital development.

Sound macro-fiscal frameworks. Strengthening the macro-fiscal policy framework can help achieve macroeconomic stability and create fiscal space to finance government policies—including investment programs.² It allows economic agents to focus on productive activities, expands the average planning horizon of investment decisions and increases the maturity of private and public borrowing. The global pandemic is putting pressure on already stressed macro policy frameworks, particularly for those governments with mounting fiscal pressures and heightened debt vulnerabilities. The fiscal cost of the policy response to COVID-19 pandemic implemented by countries in the region is massive and has put the sustainability of public finances at risk. The pandemic is further weakening government balance sheets. Still, charting

² Issues of transparency and accountability of rules, procedures, and practices of fiscal policymaking are briefly discussed in section 1.

the course for a rapid recovery will require massive investments and governments may need to rebuild their fiscal pace to help finance those investments. Section 1 summarizes some of the actions from the revenue, expenditure and public debt side that African governments may need to implement to generate the much-needed fiscal space.³

Institutional quality. Government effectiveness to design and implement policy responses to the crisis and the level of public trust in government are critical to fight the COVID-19 pandemic—and, especially so in countries affected by fragility, conflict, and violence.⁴ Recent studies examine the role played by public attention on the implementation of nonpharmaceutical interventions (NPIs) by governments to contain the COVID-19 pandemic. It was found that the positive impact of public attention on policy implementation is primarily driven by countries with good institutions (Aksoy et al. 2020). One of the lessons from the pandemic is the need to adopt government operations, service delivery, and interactions with citizens for modernization of services for citizens and businesses. Digital tools play a key role here. Finally, policymakers in the region can use a social contract framework to diagnose and explain severe development obstacles such as the low quality of institutions and the ineffectiveness of past institutional reforms. The COVID-19 crisis represents an opportunity for African countries to drive a reform agenda that applies such social contract lens. It should aim at enhancing the response capacity of the State's as well as the trust of its citizens. Deploying effective communication strategies, engaging the community, and reaching consensus with all stakeholders in society are critical (De Waal 2020). Achieving inclusive productivity-driven growth requires a policy framework that places African citizens at the center of the reform effort as beneficiaries and stakeholders with agency (World Bank 2020m).⁵

Human capital. Investments in human capital of the (current and future) workforce play a key role in the road to recovery in Sub-Saharan Africa while countries prioritize policy actions to address the challenge of creating more, better and inclusive jobs. Policies fostering knowledge and skill accumulation can boost productivity by facilitating the adoption of productivity-enhancing technologies or enhancing the ability to develop new ones. However, lockdown measures to contained the pandemic coupled with school closures and disruptions in basic health services are having a negative impact on the accumulation of human capital in the short and long term. The pandemic threatens to erode the education of young Africans—especially girls.⁶ Education continuity is critical for productivity and competitiveness. Prolonged interruptions in the provision of education or a severe deterioration in quality will harm the region's long-term productivity and competitiveness. Estimates of learning loss due to COVID-19 already paint an alarming picture for young Africans. In an scenario of four months of lost schooling and no change in educational quality, the lifetime earnings of today's students across the globe will be sharply reduced, representing a loss of 12.4 percent of the world's GDP over future generations (Psacharopoulos et al. 2020).⁷

3 Africa's fiscal space can also be expanded by addressing the problem of illicit financial flows. Recent estimates suggest that illicit capital flight from the region amounts to US\$ 88.6 billion (3.7 percent of GDP) per year, an amount that is comparable to the sum of foreign aid and direct investment (UNCTAD 2020).

4 In countries affected by fragility, conflict, and violence the effort to advocate for sanitary protective measures amid pandemics and support income losses within the community is often led by self-organizing citizens, community groups, civil society organizations, and faith-based organizations.

5 Section 1 highlights the importance of strengthening public investment governance to raise the effectiveness of such spending.

6 The pandemic is also disrupting the supply and demand for essential primary health and nutrition services (such as family planning, ante- and post-natal care, attended births, child vaccinations, and other lifesaving care). For instance, fears of contracting COVID-19 are preventing parents from taking their children to health care facilities in Liberia. Some pregnant and lactating mothers have elected to postpone antenatal services and routine immunizations for fear of contracting the virus in Ghana (GFF and World Bank 2020).

7 The global estimates extrapolate the costs in future earnings of four months of lost education in the United States. They were estimated at US\$ 2.5 trillion, an equivalent of 12.7 percent of US annual GDP.

Sub-Saharan Africa already has significantly lower levels of human capital development relative to other regions —as captured by shortcomings in education (expected years of schooling and harmonized test scores) and health (survival rates and stunting). The region registered a Human Capital Index (HCI) level of 0.4 in 2020; thus, implying that a child born today will be only 40 percent as productive as a future worker if she were to enjoy complete education and full health. When compared with other developing regions, the HCI suggests that a Sub-Saharan African child is expected to be only 58 percent as productive as a future worker as a child in Europe and Central Asia (World Bank 2020m).⁸ Further deterioration of human capital during the pandemic will widen prospective productivity gaps between workers in Sub-Saharan Africa vis-à-vis other regions.

Learning losses will adversely affect long-term productivity if governments are unable to ensure the continuation of educational activities during the pandemic. Estimates suggest that less than ¼ of low-income countries provide any type of remote learning opportunities —with the majority using television and radio— as opposed to nearly 90 percent of high income countries —with most of them being provided online. In Sub-Saharan Africa, only 11 percent of countries rely exclusively on online opportunities, and only 23 percent use a combination of online and broadcast (Vegas 2020).⁹ Interactive radio instruction can be effective if it is well-designed. The government of Malawi is working with civil society organizations to provide effective literacy and numeracy instruction using solar-powered offline tablets (Bernard et al. 2020).

Human capital and skill development is a cross-cutting enabler for the JET agenda that operates through the three transformation: human capital and skills are key for a productivity-enhancing transformation within and across sectors of economic activity (including strengthening urban-rural linkages) and for seizing the opportunities of the digital transformation of the region while addressing the gender divide.¹⁰

Addressing Productivity-Enhancing Growth and Job Creation

Accelerating economic transformation is needed in Sub-Saharan Africa to create more and better jobs. The JET agenda aims to prioritize and support policies and investment that foster country-specific economic transformation that can best help to address a country's job challenges.

The first transformation, *sectoral reallocation*, boosts productivity by shifting resources from less to more efficient job-creating activities across farm, manufacturing plants and services firms while incentivizing trade-related specialization. Sectoral reallocation policies include actions to foster market contestability (i.e. enabling more flexibility in the entry/exit of firms), promoting foreign trade and foreign direct investment (FDI) to expose firms to competition and alleviate constraints to financing innovation, and promote the participation in global value chains (GVCs)—including regional value chains while building the foundations and capabilities to promote comprehensive continental involvement. Sectoral reallocation involves a shift of resources towards modern economic sectors, i.e. economic activities that are not only less volatile but also are characterized by greater value addition (for example through GVCs). Participation and upgrading along GVCs would require job creation for skilled workers and for the large, unskilled workforce through greater

⁸ This proportion rises to 68 percent when compared with East Asia and the Pacific.

⁹ These figures estimate the use of remote learning to continue basic education (K-12) in light of school closures across countries.

¹⁰ Volume 18 of the Africa's Pulse highlights the importance human capital in boosting productivity of Sub-Saharan African countries. In particular, it argues that the human capital in the region might not be allocated to its more productive use. Inefficiencies in the allocation of talent are often influenced by distortions in the labor market (say, onerous firing costs and discrimination), barriers to human capital investment (e.g. restricted access to finance, entry costs, and taxation), and social norms (say, community-based, non-market mechanism for land allocation). From a dynamic perspective, the lower productivity as a result of allocative distortions will further harm the accumulation of human capital. For instance, policies that distort the allocation of credit or land may disincentivize firms or farmers from undertaking productivity-enhancing investments —say, research and development investments and the adoption of best technologies/practices, among others. Overall, the low productivity of Sub-Saharan African countries is attributed to low levels of human capital, and this effect is compounded by the misallocation of human capital across occupations and production units.

specialization in low-skill activities in the value chain. Policies to boost competitiveness is critical for creating jobs through GVC participation. The full implementation of the African Continental Free Trade Area (AfCFTA) would help by addressing tariffs, non-tariff barriers (NTBs), and trade facilitation problems, as well as attracting foreign investments. The AfCFTA can stimulate the development of regional value chains by expanding trade and organizing production across the region, thus building resilience along supply chains. This includes securing supply chains of essential goods at the national and regional levels in the midst and the aftermath of the pandemic. An effective implementation of the AfCFTA calls for regulatory reforms, and capacity building of the institutions enforcing the treaty's obligations. The full implementation of the treaty would be enhanced by complementary policies that facilitate labor mobility across borders in the region as well as financial resources (for example, reducing the cost of remittances).

The second economic transformation focuses on the importance of economywide technological upgrading in driving productivity growth. This section focuses on one of the dimensions of the *technological transformation*—that is, the adoption of digital technologies. The *digital transformation* of the region can unlock its potential for growth, innovation, job generation and the continuous provision of services. Digital technologies have been found to improve household welfare and boost firms' productivity and job creation. Yet, access to the internet is low among households and firms in Sub-Saharan Africa. Policies that address digital infrastructure gaps, affordability (of devices and services) and digital literacy are critical to expand access to digital technologies and reduce the digital divide across gender, firm size, and urban-rural areas. The regulatory framework should provide the right incentives for rapid digital technology adoption and increased competition among mobile operators—including measures to attain universal affordable access to high-quality communications services, support of critical functions (say, hospital emergency services and e-government), public warning systems, and high network resilience (cybersecurity). Digital skills, which rest on foundational human capital, are often linked to better opportunities and yet they are not fully exploited. Ensuring inclusiveness in the provision of digital skills, at different levels, will be crucial to prevent the exclusion of already marginalized segments of the population from the benefits of connectivity—including women, rural areas, and micro, small, and medium-size enterprises (SMEs). Finally, adequate analog complements are critical to reap the benefits of the digital economy. Reforms to improve the reliability of the electricity supply and investments in a range of complementary non-digital technologies are essential.

The third transformation, *spatial integration*, involves policies that foster the reallocation of resources from less to more efficient job-creating locations through enhanced rural-urban integration, regional (inland-coastal) connectivity, and well-functioning cities that encourage production in tradable industrial and service sectors. An important aspect of Africa's urbanization challenge has been the lack of opportunities in the countryside. Boosting agricultural productivity and improving the living conditions in rural areas—including food security—will play a critical role. Segmented markets and disrupted food supply chains have led to severe supply and demand mismatches in traditional markets. Digital platforms offer producers and consumers greater connectivity, improve efficiency and lead to greater transparency in the food logistics system. At the same time, constraints should be relaxed to encourage urban development at scale and for scale, while fostering economic specialization. These include stimulating land markets, clarifying property-rights, and rightsizing zoning regulations. Finally, across the spatial landscape, investment planning across urban and rural areas requires scaling up infrastructure spending—particularly, enhancing access to basic infrastructure services.

3.1 STRUCTURAL CHANGE AND SECTORAL REALLOCATION¹¹

A process of structural transformation that renders sustained long-term productivity growth and job creation is characterized by: (1) declining employment (or hours worked) and nominal value-added shares in agriculture, (2) rising employment (or hours worked) and nominal value-added share in services, and (3) having a hump-shaped evolution of employment (or hours worked) and nominal value-added shares in manufacturing (Duarte and Restuccia 2010, 2018; Herrendorf, Rogerson, and Valentinyi 2014).¹² Sectoral employment and value-added shares in agriculture, manufacturing, and market services for 103 countries over 1995–2015 corroborate stylized facts (1) to (3).

Along their respective development paths, advanced countries and some emerging market economies have diversified away from agriculture (including other traditional sectors, like mining) to modern economic activities. The shift of labor from agriculture to modern economic activities has come along with robust productivity growth and an expansion of incomes. It is a shift toward activities that have greater value addition and exhibit a lower extent of volatility (that is, activities that are less vulnerable to commodity prices and weather conditions, among others).¹³ In Sub-Saharan Africa, there has been a substantial lag in the process (figure 3.2). Although agricultural employment shares have been declining over time, some countries still have very large shares of agricultural employment compared with advanced countries. African labor released by agriculture is mostly absorbed by services (World Bank 2020a).

Simulations of standard models of structural transformation reveal large potential gains from labor reallocation. These simulations show that higher agricultural productivity growth in Botswana, Ethiopia, Ghana, Kenya, and Senegal (to a level that matches that of South Africa) would translate into a larger employment reallocation out of agriculture and toward the service sector—and, to a lesser extent, manufacturing. The labor reallocation resulting from this counterfactual would increase aggregate labor productivity growth substantially, that is, between 1.2 and 1.6 percent per year (Duarte and Restuccia 2018). Some have argued that countries in Sub-Saharan Africa have experienced premature deindustrialization. The narrative of industrialization in Africa is one of heterogeneous experiences across the continent, rather than premature industrialization. Manufacturing value added is rising in non-oil-abundant countries, while resource-abundant countries face challenges to deepen their industrialization process (Nguimkeu and Zeufack 2019).¹⁴

¹¹ This subsection focuses on the opportunities to expand manufacturing and services—especially those activities linked to regional and global value chains. The rapid adoption of digital technologies in agriculture and food systems goes beyond the scope of this subsection. Previous issues of the Africa's Pulse looked at the impact of digital technologies on agricultural output and productivity (Volume 19) and food systems (Volume 21). Still, the structural transformation of the region is also characterized by the rapid rise of modern and more professionally managed medium-size farms, with owners who come among the well-educated urban elites and are more inclined to embrace modern farming and digital technology solutions. In some countries, medium-sized farms now account for roughly half of the value of nationally marketed agricultural production. In the more land-constrained areas of Kenya and Rwanda, small-scale farms still account for the majority of nationally marketed agricultural output—although their share has been slipping recently.

¹² In other words, the employment share (or hours worked) and the value-added share rise at an early stage of development and decline at a more advanced stage.

¹³ Boosting agricultural productivity is critical for such transformation. It would release less productive agricultural workers to seek nonfarm jobs in the economy.

¹⁴ Deindustrialization is not occurring at low-income levels in Sub-Saharan Africa. Manufacturing output shares are rising with the level of development in East Africa and Central Africa. This relationship remains flat in West Africa and follows an inverted U-shaped pattern in Southern Africa (evidence of deindustrialization). These findings suggest that the majority of countries have not experienced deindustrialization (Lind and Mehlum 2010; Nguimkeu and Zeufack 2019).

FIGURE 3.2: Structural Transformation in Africa and the World

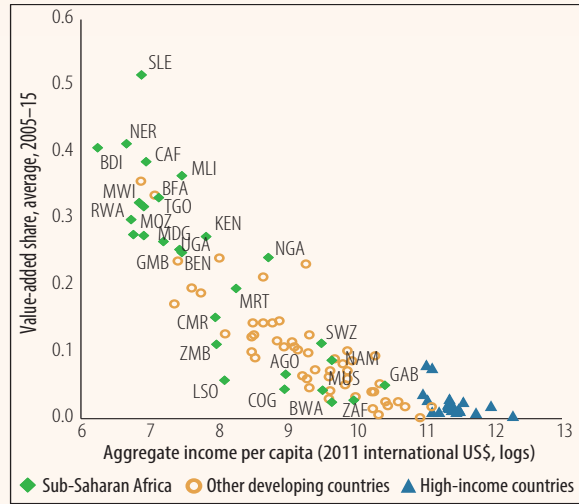
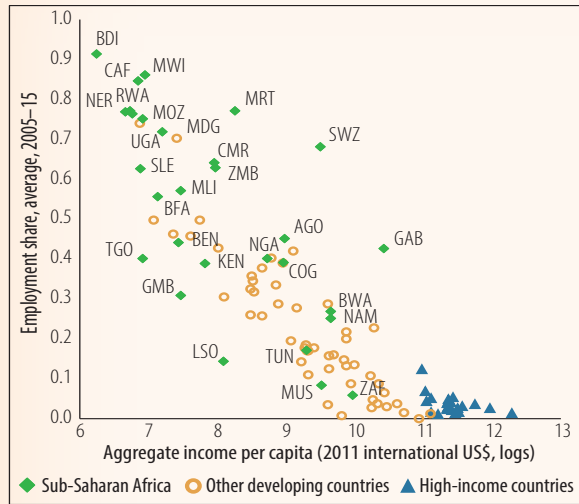
There is substantial lag in the structural transformation process of Sub-Saharan Africa.

1.1. Employment Shares

1.2. Value-Added Shares

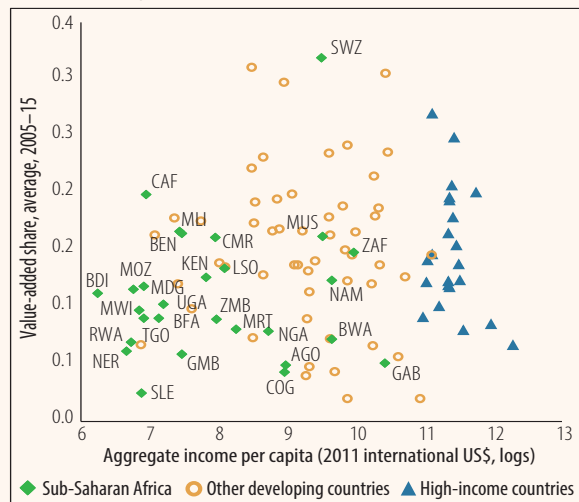
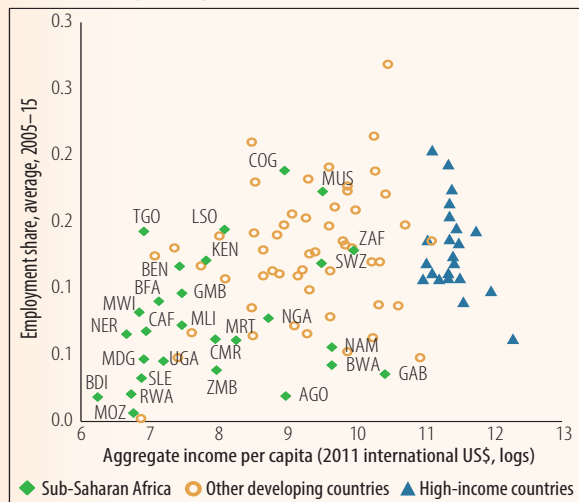
A. Agriculture: Employment

B. Agriculture: Value added



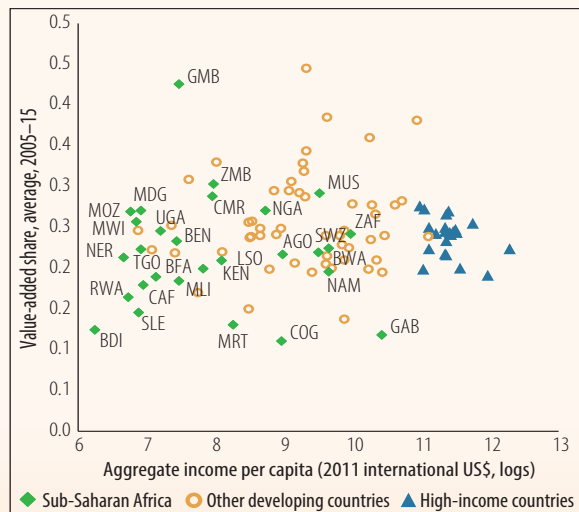
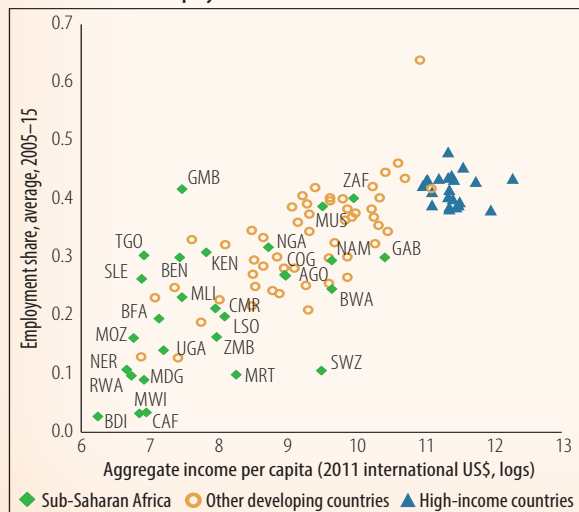
C. Manufacturing: Employment

D. Manufacturing: Value added



E. Market services: Employment

F. Market services: Value added



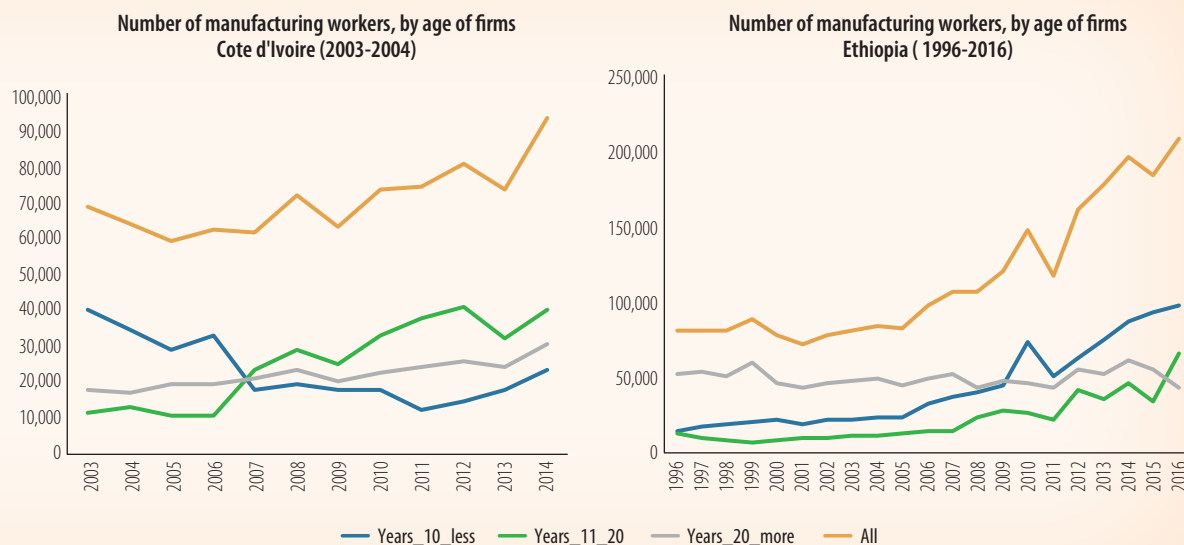
Source: World Bank 2020c.

Manufacturing Jobs Growth: Increased Productivity Needed as Wages Rise

Sustained and large increases in the manufacturing workforce were experienced in several Sub-Saharan African countries over the past 20 years. This increased employment has been attributed to startups and young firms—for example, Côte d'Ivoire and Ethiopia during 1996–2016 (figure 3.3). Most of the 128,000 manufacturing jobs created in Ethiopia were concentrated in startups and young firms. The increased employment was fueled by ample labor supply at relatively low wages. Job creation came along with rising profits per worker for these firms. Their higher profits were associated with increased average labor productivity amid relatively low wages.¹⁵ However, there has been a sharp decline in profit margin per worker across all firms since 2014. Gradual wage increases and increasingly capital-intensive production in startups and young firms over time may lead to fewer new jobs per unit of capital in those firms. In Côte d'Ivoire, manufacturing firms continue hiring at lower wage rates. Such job creation may become unsustainable if productivity growth is absent. Firms' responsiveness to local economic conditions also drove the higher growth creation by startups and young firms, especially those with greater access to external finance (Adelino, Ma, and Robinson 2017). In this context, policies fostering manufacturing growth should reduce entry barriers, boost within-firm productivity, and avoid size-based support schemes (World Bank Group 2020g).

Manufacturing job creation in Côte d'Ivoire and Ethiopia is driven by startups and young firms.

FIGURE 3.3: Number of Manufacturing Workers, by Age of Firms



Source: Abreha et al. 2019.

As the period of cheap manufacturing labor comes to an end, wage increases in the region would be supported by higher productivity. Manufacturing job growth along with increased productivity can be attained by *lifting market distortions* that lead to resource misallocation. The evidence shows pervasive misallocation of resources across and within sectors and industries in developing countries—and, notably, Sub-Saharan African economies.¹⁶ For instance, misallocation of labor (toward low-productivity activities) has reduced output per worker growth by 1.3 percentage points per year (McMillan, Rodrik, and Verduzco-Gallo 2014).¹⁷ Hence,

¹⁵ In Ethiopia, the average wage rate paid by other firms was considerably higher than the one in startups and younger firms throughout the period.

¹⁶ See World Bank (2020a) and references therein.

¹⁷ A similar pattern of labor reallocation has been observed in selected West African countries (Haile 2018).

reallocating resources from low- to high-productivity activities/firms enhances productivity and creates employment opportunities.

The contribution of market share reallocations to productivity in Côte d'Ivoire and Ethiopia is as significant as that in Bangladesh, although at different rates. Manufacturing productivity in Ethiopia grew by 47 percent between 1996 and 2009, while it increased by 6 percent in Côte d'Ivoire over a similar time span (from 2004 to 2016). The pattern of productivity growth of Ethiopian manufacturing is comparable to that of Bangladesh during its early years of industrialization when productivity surged 33 percent over 1995–2001 (Jones et al. 2019). Factor reallocation from less to more productive firms explains a large share of the observed manufacturing productivity growth in Côte d'Ivoire and Ethiopia. Such reallocation occurred not only through the expansion and contraction of existing establishments, but also through the entry of new firms and exit of low-productivity ones. Factor reallocation in Ethiopia enhanced productivity through the exit of the least productive firms that were exposed to greater competition from new and (more productive) incumbent firms. In Côte d'Ivoire, manufacturing productivity growth due to reallocation was attributed to the higher productivity of new firms—compared with that of incumbent establishments (Jones et al. 2019).¹⁸

Manufacturing job growth can be bolstered not only through resource reallocation, but also by enhancing within-firm technical efficiency. Drivers of within-firm productivity growth include participation in international trade, FDI, and agglomeration economies (Combes and Gobillon 2015). International trade exposes firms to innovation, while FDI relaxes financing constraints and encourages innovation. Innovation capabilities are fostered by economic clusters as they share infrastructure, learn from knowledge and skill exchange and transfers, and provide better matching between producers and intermediate goods (World Bank 2020g). The evidence shows that increased trade exposure boosts plant-level total factor productivity (TFP) in Côte d'Ivoire, Ethiopia, and Tanzania (Jones et al. 2019), as well as the selection of more productive manufacturing firms into exporting in Ethiopia (Bigsten and Gebreeyesus 2009).

Manufacturing Job Growth through Participation in GVCs and Industrial Upgrading

Rising participation in GVCs can promote job creation through the allocation of resources to more productive activities or the generation of backward and forward linkages in and around GVCs.¹⁹ For instance, Lesotho's integration into the apparel GVC has employed 10 percent of the country's labor force. Participation in GVCs can lead not only to more but also better jobs, as firms engaging in value chains pay higher wages and provide better working conditions—due to compliance with global standards on health, safety, and the treatment of workers. The insertion of the Ugandan floriculture sector into a GVC led to better working conditions, as reflected by improved health care and sanitation facilities as well as childcare standards. Higher productivity and wages in GVC-participating firms is also attained through access to training and skills development. For instance, employer-sponsored training is the most common source to improve skill and career development (World Bank 2017b).

¹⁸ The relative contribution of the reallocation effect vis-à-vis the within-firm effect in Côte d'Ivoire is sensitive to more recent periods—for example, the 2011-17 period.

¹⁹ The hyper-specialization of the production process enables exporting firms to focus on a few tasks, rather than mastering the entire production process. Therefore, firms in developing countries that participate in GVCs are typically more productive, and all the types of GVC participation are associated with higher output and productivity growth than standard trade (World Bank 2020a).

Few countries in the region participate effectively in GVCs.²⁰ For instance, Lesotho, Eswatini, Tanzania, and Mauritius had the largest foreign value-added shares in the region in 2015, due to the relatively large share of their imports for exporting textiles and apparel products. More recently, East African economies have increased their GVC participation in agribusiness and apparel (Ethiopia and Kenya), manufacturing exports (Tanzania), and, to a lesser degree, transport and tourism (World Bank 2020o). A greater share of the exports of Guinea, Nigeria, the Republic of Congo, the Democratic Republic of Congo, and Angola (mainly crude petroleum, mineral ores, and metals, as well as other raw materials) is inputs for other countries' manufacturing exports. In this context, Sub-Saharan African countries should pursue policies that foster backward linkages among firms in the region and enhance the transfer of knowledge and technology through imported intermediates.

Upgrading in manufacturing GVCs (switching to higher value activities) is also an important source of job creation and sustained productivity growth.²¹ In Sub-Saharan Africa, manufacturing jobs have increased in GVC-participating firms due to the expanding demand for manufactured goods in the global economy. Increased global demand, for instance, added 1.7 percentage points to manufacturing GVC job growth in Ethiopia. It also added GVC jobs in Kenya, Senegal, and South Africa between 2000 and 2014, by 0.9, 0.6, and 0.5 percentage points, respectively. Despite this job growth, the share of formal manufacturing jobs in total GVC jobs is the lowest in Sub-Saharan Africa. This share can be lower than 10 percent (Ethiopia and Senegal) and as high as 20 percent (South Africa) for countries in the region. It is greater in benchmark countries, exceeding 35 percent in Bangladesh, Brazil, China, India, and Malaysia (figure 3.4).

The share of formal manufacturing jobs in total GVC jobs is still low in Sub-Saharan Africa.

FIGURE 3.4: Sectoral Employment in GVCs, Sub-Saharan Africa and Benchmark Countries (% of total)



Source: Pahl et al. 2019.

Note: The shares of GVC employment correspond to the year 2014. Countries are ranked by share of manufacturing.

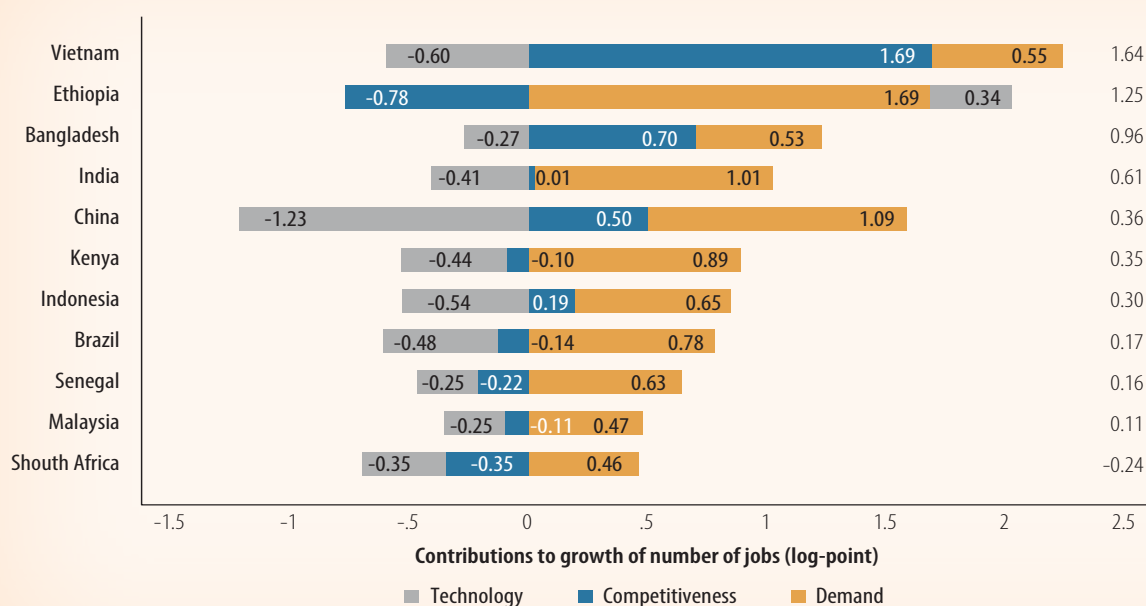
²⁰ The evolution of the participation of Sub-Saharan African countries in GVCs is described in Coulibaly, Kassa, and Zeufack (2020).

²¹ Specialization in core tasks; access to imported inputs, knowledge, and technical spillovers from multinational enterprises; and exposure to global competition can enhance the productivity growth of firms joining manufacturing GVCs (Crisuolo and Timmis 2017).

The shares of agriculture and service sector jobs in total GVC jobs is higher in Sub-Saharan Africa. In 2014, the participation of agriculture in GVCs rendered an additional 2.4 million jobs in Ethiopia, 1.2 million in Kenya, 171,000 in Senegal, and 781,000 in South Africa. At the same time, the South African service sector added 1.3 million jobs through integration into GVCs, 586,000 in Ethiopia, 395,000 in Kenya, and 55,000 in Senegal. The trends in some comparator countries are different. For example, jobs created in agriculture through GVCs declined in China, while they sharply increased in manufacturing, between 2000 and 2014. In Bangladesh and India, job creation in GVCs increased in all sectors but was steeper in manufacturing.²²

Job growth can be affected by changes in the labor requirements needed per unit of output, competitiveness, and the demand for the product (figure 3.5). Declining competitiveness and lower labor requirements needed per unit of output (through the adoption of labor-saving technologies that replace routine production tasks along GVCs) weakened the growth of employment through GVC participation in Sub-Saharan Africa and some comparator countries (Reinjnders and de Vries 2018). The deterioration of competitiveness reduced job growth along GVCs in South Africa by 0.35 percentage point, as well as in Ethiopia (0.78 percentage point), Kenya (0.1 percentage point), and Senegal (0.22 percentage point). Job growth in Brazil and Malaysia hardly increased through the competitiveness channels, although this was not the case of Vietnam, Bangladesh, China, and Indonesia. Finally, technological improvements have reduced labor requirements in countries with an advanced manufacturing sector around 2000. That is, further increases in productivity were minimal compared with improvements in non-agriculture sectors with backward linkages to manufacturing. Labor requirements in manufacturing increased job growth by 0.34 percentage point in Ethiopia.

FIGURE 3.5: GVC Participation and Job Growth: The Roles of Technology, Competitiveness, and Demand in Sub-Saharan Africa and Benchmark Countries, 2000–14



Declining competitiveness and labor-saving technologies weakened employment growth through GVC participation in Sub-Saharan Africa

Source: Pahl et al. 2019.

Note: Countries are ranked by total growth in the number of jobs.

²² Distinguishing services and manufacturing activities is becoming more difficult, as some GVC jobs in services include tasks that support manufacturing, such as transport and communications, finance, business processing, and after-sales services (Pahl et al. 2019).

Although upgrading has occurred in manufacturing activities that are relatively less intensive in knowledge, there is some degree of variation across countries. In some countries, industrial upgrading has taken place in high and low knowledge-intensive activities—for example, Cameroon and Senegal added jobs in less knowledge-intensive industries (food and beverages, textiles and apparel, wood and paper, and metal products industries) and high knowledge-intensive ones (electrical and machinery as well as transport equipment). The transport equipment industry in Ethiopia and South Africa and the electrical and machinery industry in Kenya also experienced an increase in employment (table 3.1). Raising value-added growth in these industries is related to high employment growth effects (World Bank 2020g).

Upgrading along GVCs creates jobs in the manufacturing sector, although with bias toward more skilled manufacturing and functional business-related jobs, as is the case of high-income countries with high initial capabilities. It is not only vital to upgrade in GVCs to create more jobs, but also important to create job opportunities for Africa's large unskilled workforce. Greater specialization in low-skill activities in the value chain is therefore needed. Inclusive growth is achieved when the sectors/industries participating in GVCs with better economic performance are labor-intensive and use relatively lower-skilled labor (Allard et al. 2016). The volume of activity performed in GVCs is as important as specializing in sophisticated activities in the value chain as important benefits can be obtained from specializing in less sophisticated manufacturing activities and performing them on a large scale (Kowalski et al. 2015).

The growth of employment shares in less knowledge-intensive activities has been striking. Food and beverages registered the largest growth in employment shares in Côte d'Ivoire (6.5 percent), Ghana (19.9), and Malawi (21.1). Employment shares in textiles and apparel recorded growth rates of 14 and 6.1 percent in Cameroon and Kenya, respectively. Metal products is the only less

TABLE 3.1: Employment Growth in Manufacturing Industries in Sub-Saharan Africa and Benchmark Countries (%)

Country	Period	Food and beverages	Textiles and apparel	Wood and paper	Chemical and non-metal products	Metal products	Electricity and machinery	Transport and equipment	Total manufacturing
<i>Sub-Saharan Africa</i>									
Côte d'Ivoire	1994-1997	11.5	9.1	4.3	4.8	5	2.8	-2	35.6
Cameroon	1998-2008	2.4	6.8	2.5	-4.2	6	7.1	5.6	26.3
Ethiopia	1998-2015	14.1	11.7	15.9	25.6	23.7	5.5	23.8	120.2
Ghana	1995-2003	60	-4.6	5.5	19.9	0.3	-10.1	-30.1	40.9
Kenya	1998-2015	15.2	18.7	7.2	11.1	14.1	11.6	-18.4	59.5
Malawi	1998-2012	-4.8	6.5	5.5	-1.3	2	na	na	7.9
Senegal	1998-2014	5.7	4.7	6.3	6.1	-5.4	7.8	8.1	33.2
South Africa	1998-2015	1.6	-11.7	-2.2	-2.2	-1.5	-1.7	2.6	-15.9
<i>Asian Benchmarks</i>									
Bangladesh	1998-2011	10.7	10.8	7.1	20.1	18.8	8.5	4.9	81.0
Indonesia	1998-2015	4.6	2.3	-1.4	2.9	3.5	3.8	8.8	24.5
Vietnam	1998-2015	19	20.7	22.2	19.3	22.1	23.9	21.7	149

Sources: World Bank Staff calculations, using data from UNIDO's INDSTAT2 and UNCTAD Eora database (World Bank 2020g).

Note: Employment growth for each industry is calculated by dividing employment growth of individual industries by the sum of employment growth of all industries multiplied by employment growth in the total manufacturing sector of respective countries. n.a. = not available.

knowledge-intensive upgrading sector that recorded growth of employment share in Ethiopia. Wage growth in less knowledge-intensive activities has been noteworthy too. In Malawi, food and beverages employs two-thirds of the manufacturing workers, and the industry's wage rate grew by 50.1 percent between 1998 and 2012. The wage rate in food and beverages grew by 60.2 percent in Ethiopia (1998–2015), while the wage rate increased by 80.5 percent in metal products in Senegal (1998–2014) and 81.8 percent in wood and paper in Malawi. The wage rate increases suggest greater welfare for workers in GVC-participating firms (World Bank 2020g).

Creating jobs through GVC participation requires policies to boost competitiveness. The AfCFTA provides an institutional mechanism to lower production costs by addressing tariffs, NTBs, and trade facilitation problems and channel investment to overcome existing bottlenecks. The full implementation of the AfCFTA can also stimulate the development of regional value chains. Nearly half of the intra-Regional Economic Community exports in Africa are manufactured goods. Organizing production across the region and expanding regional trade can help diversify and foster the industrialization of African economies as well as build resilience (UNECA 2020). Box 3.1 argues for (re)positioning African countries to seize the opportunities arising from building more resilient GVCs in the aftermath of the COVID-19 pandemic.

Central Role of Services in Manufacturing and GVCs: The Need for Reform in the Region

With the rise in fragmentation of production processes and multiple production value chains, the importance of services such as coordination, transportation, logistics, finance, communications, and other business services is becoming even more critical. Services play a central role in the patterns of international trade and investment: they enable the development of value chains and create value chains in their own right.²³ There is evidence within and across borders of strong productivity linkages between the organization of production within firms and the organization, efficiency, and quality of producer services. Service sector productivity is positively associated with manufacturing output and productivity. Manufacturing firms use services as inputs, and services productivity influences the export of goods, which is known to depend on firm-level manufacturing productivity.²⁴ Hence, to succeed in GVCs, African countries need to reform the service sector to improve access, reduce cost, and improve quality.

As inputs in the production of manufactured goods, services development can help increase output and productivity. Specifically, the intensive use of financial and business services can boost manufacturing firms' productivity, lower the cost of doing business, and foster product differentiation, among other things.²⁵ Manufacturing firms that intensively use financial and business services benefit the most from domestic services development (Liu et al. 2018).²⁶ Furthermore, imported services inputs can also boost the productivity of manufacturing firms in countries with an underdeveloped service sector. Industrialization in Africa needs to focus not only on manufacturing production, but also on having a development strategy for the service sector. African policy makers should account for the manufacturing-services linkages in trade negotiations.

²³ Draper et al. (2012); Heuser and Mattoo (2017).

²⁴ Hoekman and Shepherd (2017).

²⁵ Financial sectors can mobilize resources efficiently, stimulate investment, and help firms (and households) diversify risks. The business services sector comprises a wide array of activities, ranging from software consulting and data processing to management consultancy, engineering, and research and development services.

²⁶ Reforms that promote competition in banking, transport, insurance, and telecommunications raised the productivity of foreign and locally owned manufacturing firms in India. A one standard deviation increase in the aggregated index of services liberalization led to increases in productivity of 11.7 percent for domestic firms and 13.2 percent for foreign enterprises. The largest additional effect was for transport reforms, followed by telecommunications and banking reforms (Arnold et al. 2016).

BOX 3.1:
African Countries
Should (Re)
Position to Seize
Opportunities
That Arise from
GVCs Post-
COVID

The combination of trade policy shocks^a and enduring public health concerns from COVID-19 has created uncertainty about the future of international trade, resulting in a rethinking of global value chains (GVCs) in manufacturing.^b Existing production networks are designed for efficiency and cost advantages. Due to COVID-19 and emerging geopolitical trends in advanced economies, there is a growing preference for resilience or “de-risking” strategies. This could lead to geographic switching of GVCs, reducing the high reliance on *Factory China* and promoting vertical integration. COVID-19 is expected to reinforce an already ongoing change in GVCs with respect to geographic rebalancing. Between 16 and 26 percent of global exports are expected to move to different countries in the next five years.^c The change in heavily traded labor-intensive manufacturing GVCs, a sector in which many African countries have comparative advantages, is expected to be significant. For example, the share of trade produced by the top three exporting countries in apparel dropped significantly from 2015 to 2018. Textile and apparel GVCs are expected to feature the highest share of trade shifting to other countries.^d For African countries with relatively higher backward linkages in manufacturing GVCs, this suggests the need to (re)position themselves to reap any gains arising from fundamental changes in GVCs due to a relative increase in preference for GVC resilience or an associated rise in vertical integration.

Evidence from the Great East Japan earthquake of 2011 suggests that more diversified supply chain networks lead to firms’ resilience to natural disasters. Following the earthquake, imports shifted away from the affected input source toward developing countries that had a revealed comparative advantage in the input.^e The current crisis has revealed the extent of dependence on Factory China and the risks of concentration of GVCs. A more resilient strategy to reduce the risk of potential supply chain disruption would be for firms to reduce dependence on any one individual supplier. The shift in GVCs is expected to create opportunities for developing economies. For example, Vietnam and Bangladesh have been and will continue to be the main beneficiaries of this shift. With the right policy mix and active industrial policies, African countries could present a viable alternative to attract some of these investments, based on their comparative advantages.

A robust set of active policy reforms to improve the business climate; improve contract enforcement mechanisms; maintain flexibility in promoting and attracting foreign direct investment (FDI); and strengthen complementary services such as finance, transport, and communications; and trade facilitation could contribute to attracting such investment to the region. A recent survey tracking U.S. sourcing executives’ plans for textile and apparel manufacturing suggests that the major drivers of sourcing include the following^f: (i) speed to markets; (ii) production and sourcing cost, including labor cost and access to cheaper yarns and fabric produced locally; (iii) flexibility and agility in rapidly adjusting the delivery, volume, and products based on requests; and (iv) risks of factory, social, and environmental compliance. Policy reforms that address these key challenges could better position African countries as attractive destinations for firms seeking to relocate manufacturing in response to the crisis.

Investment promotion efforts aimed at reducing the costs of FDI; easing restrictions on the costs of trade, including transport and logistics; and alleviating information asymmetries and burdensome bureaucratic procedures can remedy the scarcity of capital, technology, and management skills. This requires a mix of industrial policies and targeted investment promotion activities. Targeting selected industries with comparative advantage is considered best practice, as more intense pursuit of priority industries is found to lead to greater FDI inflows than less intense across-the-board efforts to attract FDI.^g

a. These include rising protectionism in advanced economies, China-U.S. trade tensions, and Brexit.

b. Javorcik (2020a); Baldwin and Tomiura (2020); Gruszczynski (2020).

c. McKinsey Global Institute (2020).

d. McKinsey Global Institute (2020) estimates that relative to all other value chains, textiles and apparel feature the highest percentage of trade that could most likely shift (36 to 57 percent in apparel and 23 to 45 percent in textiles). This represents a range of \$67 billion to \$393 billion in value.

e. Freund et al. (2020).

f. Lu (2019).

g. Javorcik (2020b).

Opening markets to certain types of services is critical for countries that join/participate in GVCs. This is the case of, for example, of logistics providers and express delivery services—especially because the innovation in value chains mostly occurs among retailers (at the downstream end). Large retailers and e-commerce enterprises, as opposed to small retailers, can seize the opportunities created by new supply chain technologies to enhance GVC productivity (Ferrantino and Koten 2019). The development of GVCs can be fostered by policies that enhance the enabling environment for e-commerce and facilitate free movement of data. Fostering competition in telecommunications services and removing barriers to the adoption of the internet are critical to ease the flow of information between buyers and sellers that is required to promote GVCs.

Several restrictions on entry, ownership, and operations characterize services markets across the world. In Sub-Saharan Africa, the extent of trade services restrictiveness is often higher, although there are significant variations. Countries like Ethiopia, Zimbabwe, and the Democratic Republic of Congo have very restrictive services trade policies, while others like Rwanda, Madagascar, and Senegal are considered open (Borchert, Gootiiz, and Mattoo 2014). The central role of services in manufacturing and GVCs suggests the need for reform in the region. Services reform could lead to improved quality and access to existing services and availability of new and improved services due to the entry of new and more advanced service providers (Arnold et al. 2016). The reliability of existing services could also be improved following reforms that encourage competition and efficiency in the sector. In addition, reducing market power in services may enhance competition and innovation in the sector, reduce barriers to entry, and lead to reduced prices of services, especially if dominant firms in the market have been appropriating much of the innovation rent prior to reform.

Finally, tourism services in Africa can benefit from joining tourism GVCs and consolidating their position as an international tourist destination. Yet, upgrading in the sector along several dimensions is needed to generate sustained growth and create jobs (Daly and Gereffi 2018): product upgrading (e.g. improving leisure products that appeal to local/regional customers), process upgrading (say, forging relationships between domestic distribution intermediaries and global tour operators to access customers), functional upgrading (for example, hotels and lodges adding restaurants), chain upgrading (conference tourism), and end-market upgrading (such as increasing tourism from Asia). Box 3.2 summarizes some of the COVID-19 policy responses in the tourism sector.

BOX 3.2:
African Tourism
Sector and
COVID-19: What
Has Been Done?
What Needs to
Be Done?

Tourism is one of the sectors that has been severely affected by the COVID-19 pandemic throughout the world and, particularly, in Sub-Saharan Africa. Lockdown measures resulting from the pandemic led to a 56 percent year-on-year drop in tourist arrivals worldwide in the first five months of 2020—an equivalent to a fall of 300 million tourist and US\$320 billion lost in tourism receipts (UNWTO 2020). The tourism and travel sector in Africa could lose at least US\$50 billion in revenues and two million direct and indirect jobs due to COVID-19 (African Union 2020). Tourism-dependent countries are the ones that have been hit the hardest. For instance, tourism revenues in Mauritius for July fell 92 percent year-on-year, to MUR 414 million as borders remained closed. Uganda could lose as much as US\$2 billion in tourism revenues due to the travel restrictions. A series of fiscal and monetary measures have been deployed to support the tourism sector, including emergency measures, job protection, and skill development measures to restart tourism and promote domestic tourism. Table B3.2.1 presents a summary of these measures.

TABLE B3.2.1: Policy Measures to Support Tourism

<p style="text-align: center;">Emergency measures</p> <ul style="list-style-type: none"> • Temporary exemption/deferral/reduction of tourism-related taxes for businesses in the travel and hospitality industry • Economic support for SMEs in tourism • Discount on utility expenses for businesses • Cash flow assistance to travel agencies • Financial funds for tourism SMEs (loan schemes and preferential conditions for loans) • Incentive program to airlines 	<p style="text-align: center;">Job protection and skill development</p> <ul style="list-style-type: none"> • Reduction of the training levy for tourism operators • Wage subsidies to retain jobs in tourism, hospitality, and aviation • Financial support for trainees • Support businesses with digital skills training • Retraining and reskilling tourism workers, including the unemployed • Capacity-building programs
<p style="text-align: center;">Restarting tourism</p> <ul style="list-style-type: none"> • Vouchers for trips/travel packages canceled due to COVID-19 • Contract law amendments to protect customers and operators • Guidelines/recommendations on concluded tourist package contracts with implementation problems due to COVID-19 • Health and safety protocols, certifications, and labels in tourism establishments (accommodations sector, restaurants, and spas and wellness centers) • Creation of safety corridors between countries to restart international tourism 	<p style="text-align: center;">Promoting domestic tourism</p> <ul style="list-style-type: none"> • Holiday vouchers for domestic travel • Domestic tourism promotion and marketing campaigns • Fee waivers on air service charges on domestic airline operations and domestic and regional aviation security charges • Co-financing smaller promotional projects and executing projects on the domestic market • Product development initiatives

Sources: UNWTO 2020a.

Note: SMEs = small and medium-size enterprises.

Some emergency measures implemented in Sub-Saharan Africa include deferral of capital income tax payments for tourism and hotel businesses in difficulty (Côte d'Ivoire); suspension of passenger fees on air tickets (Mauritius); and direct support to the tourism, transport, and hospitality sectors, including small and medium-size enterprises (Senegal and South Africa). A special fund has been created in Kenya to restore confidence as a preferred travel destination and support the post-COVID recovery strategy in all the country's key source markets. Job protection and skill development measures include wage subsidies for firms retaining jobs in the tourism, hospitality, aviation, and construction sectors (Namibia); special funds to the Unemployment Relief Scheme (the Seychelles); (partial) salary support to tourism employees on technical unemployment (Gabon and Botswana); and reduction of training levies for tourism operators (Mauritius). To restart tourism, Kenya announced the gradual reopening of tourism establishments, confirmed bilateral tourism agreements, and issued COVID-19-free certifications for East African countries.

Reactivating the tourism industry in Africa is critical for creating jobs and sustained growth. Priorities at the continental level to accelerate the post-COVID recovery of the sector include the following (UNWTO 2020b): (i) unlocking sectoral growth through investment promotion and public-private partnerships; (ii) promoting travel facilitation, including enhanced connectivity and tourism visa policies; (iii) fostering innovation and technology; and (iv) fostering resilience, including through safety and security, and crisis communication. The sector also needs to continue building capacity in crisis management and communications, marketing, and domestic tourism development.

African Continental Free Trade Area: How to Reap the Productivity and Job Gains?

The agreement establishing the AfCFTA entered into force in May 2019 for the 24 countries that had deposited their instruments of ratification by then.²⁷ Trade under the AfCFTA agreement was due to start on July 1, 2020, although this date has been postponed due to the COVID-19 pandemic. Once completed, the AfCFTA will be the largest free trade area in the world in terms of membership. It will potentially cover a market of 1.3 billion people (60 percent of whom are age 25 years or younger) and a GDP of US\$3.4 trillion. The success of this treaty depends on the depth and breadth of the detailed commitments to remove trade barriers and their implementation. So far, the treaty contains the legal framework for trade in goods and trade in services, the institutional setup, and state-to-state dispute settlement provisions. The specific terms of trade liberalization in goods and services are still being negotiated. Additional protocols on investment, competition policy, and intellectual property rights are expected to be negotiated in the second phase of the agreement. Seizing the opportunities created by the AfCFTA will require addressing the weaknesses that have limited the impact of previous regional trade agreements in Africa. It will also entail work with stakeholders at the regional and domestic levels, including the Permanent Secretariat, the Regional Economic Communities, national governments, the private sector, and civil society.

²⁷ To date, 30 countries have deposited their instruments of AfCFTA ratification with the African Union Commission chairperson.

Potential Benefits of the AfCFTA Are Substantial

The AfCFTA aims to reduce tariffs among member countries and cover policy areas such as trade facilitation and services, as well as regulatory measures—for example, sanitary standards and technical barriers to trade. Consequently, this agreement is large in scope. It will complement existing sub-Regional Economic Community agreements in Africa by offering a continentwide regulatory framework and regulating policy areas—such as investment and intellectual property rights protection—especially those that have not been covered in most subregional African agreements. The long-term economic and distributional implications of the AfCFTA have been estimated recently, and they assume changes in trade policy that are in line with ongoing negotiations in three main categories (World Bank 2020b).

First, *tariffs* on intracontinental trade are progressively reduced in line with AfCFTA modalities. Starting in 2020, tariffs on 90 percent of tariff lines will be eliminated over a five-year period (10 years for the least developed countries, or LDCs). Starting in 2025, tariffs on an additional 7 percent of tariff lines will be eliminated over a five-year period (eight years for LDCs). Up to 3 percent of tariff lines that account for no more than 10 percent of intra-African imports can be excluded from liberalization by the end of 2030 (2033 for LDCs).

Second, *non-tariff barriers* on goods and services are reduced on a most favored nation basis. It is assumed that 50 percent of the NTBs can be addressed with policy changes in the context of the AfCFTA, with a cap of 50 percentage points. It is also assumed that there will be additional reductions in NTBs on exports.

Third, the AfCFTA will be accompanied by *trade facilitation* measures, with commitments closely aligned with the Trade Facilitation Agreement (TFA).²⁸ Upper bound gains from trade facilitation assume that all countries will implement the TFA fully as part of the AfCFTA process.²⁹ Estimates show that higher scores of the trade facilitation indicator reduce the probability of a longer time in customs.³⁰ The estimates of trade cost reductions due to trade facilitation measures range between 2 and 10 percent over 2020–35.

This section illustrates the impacts of the (partial to full) implementation of the AfCFTA on African economies. The full AfCFTA scenario involves tariff reduction, elimination of NTBs, and implementation of the trade facilitation measures. A global computable general equilibrium model with a microsimulation framework is used to evaluate the agreement's impact on: (1) welfare (as measured by real income gains), (2) trade performance, (3) sectoral output and productivity, (4) labor markets, and (5) poverty.

Welfare effects. The continentwide welfare gains from AfCFTA, as measured by changes in real income (equivalent variation), tend to grow as all aspects of the treaty are fully implemented. For instance, real income (equivalent variation) gains from implementing only the tariff liberalization

²⁸ Trade facilitation refers to the use of risk management and other customs and border management best practices, rights of appeal, and having information made available, among others. Further information can be found at tfacility.org.

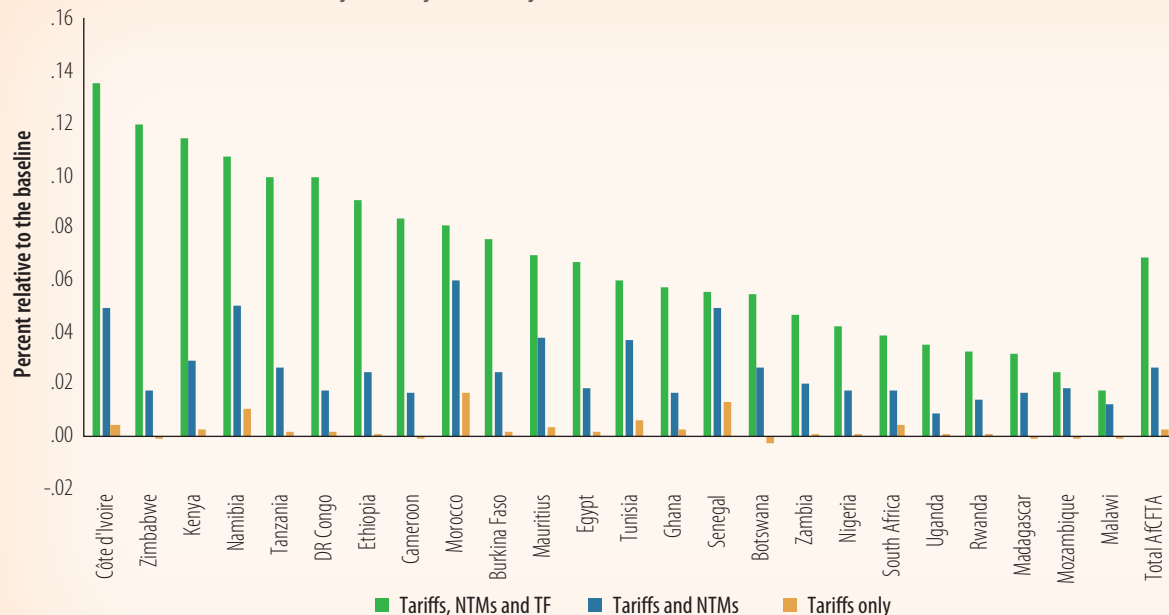
²⁹ This computation uses estimates from de Melo and Sorgho (forthcoming) of a model that predicts observed time in customs as a function of basic structural variables, policy variables, and the trade facilitation variables captured by the trade facilitation indicator. The set of basic structural variables includes GDP, the Logistics Performance Index, and an infrastructure quality index. World Governance Indicators are proxies for policy variables. Finally, the trade facilitation indicator is a weighted average of the following components: (1) information availability, (2) involvement of the trade community, (3) advance rulings, (4) appeal procedures, (5) fees and charges, (6) formalities involving documents, (7) formalities involving automation, (8) formalities involving procedures, (9) internal border agency cooperation, (10) external border agency cooperation, and (11) governance and impartiality.

³⁰ Overall differences in cost reductions reflect disparities in the value of the trade facilitation indicator and the time in customs for imports. The model provides estimates of the reduction in customs time as a result of full TFA implementation. The lower customs times are then translated into ad-valorem equivalents of barriers using the methodology of Hummels and Schaur (2013). They estimate that one extra day in customs is equivalent to an extra tariff of 1.3 percent at destination, based on maritime trade flows to the United States.

phase are small (at 0.22 percent).³¹ Removing only one constraint is not sufficient for real income gains to materialize. The gains from tariff liberalization and NTB reductions (with increased access to non-African markets) amount to 2.4 percent for the continent in 2035. Under full implementation of the AfCFTA agreement, the continent's welfare increases by an additional 4.6 percentage points—thus implying substantial gains from trade facilitation.³² The gains from regional integration resulting from full implementation of the AfCFTA go beyond the traditional welfare analysis. There are significant dynamic gains from trade associated with exploiting economies of scale in larger markets, attracting substantial FDI inflows, increased competition, transfer of technology and managerial know-how, and economic diversification. However, the framework applied in this section does not capture some of these dynamic gains from trade.

Welfare gains are unevenly distributed across countries in the region. At the very high end, Côte d'Ivoire and Zimbabwe have gains of 14 percent, followed by Kenya, Namibia, and Tanzania, with gains that exceed 10 percent. At the lower end, a few countries have gains of 2 percent, including Madagascar, Malawi, and Mozambique (figure 3.6). The computed income gains tend to be higher in countries attaining greater access to other markets—as heavily protected countries might experience larger output reallocation across sectors due to increased import competition and lower imported input prices. Under the full AfCFTA scenario (which includes changes in tariffs, NTMs, and trade facilitation), real income in Africa would grow by 7 percent in 2035, a sizable gain.³³ The gain amounts to US\$445 billion in 2035 (at 2014 prices and exchange rates).³⁴

FIGURE 3.6: Real Income Gains, by Country and Policy Reform



The continentwide welfare gains from AfCFTA tend to grow as all aspects of the treaty are fully implemented.

Source: World Bank 2020b.

Note: Real income is measured by equivalent variation, that is, the expenditure to attain utility in year *t* in any given simulation using base year prices. EV = equivalent variation; NTMs = non-tariff measures; TF = trade facilitation.

31 The relatively smaller gains from tariff liberalization can be attributed to the high NTMs and trade facilitation bottlenecks constraining trade in Africa. Still, some countries are bound to welfare gains that exceed 1 percent due to substantial market access improvements in other AfCFTA markets (Namibia, Morocco, and Senegal).

32 The TFA simulations do not include specific measures to improve trade facilitation. Some measures may have relatively low cost, but others may require investments in software, other logistical support, infrastructure, and so forth. These costs could reduce the net gains from improvements in trade facilitation.

33 Real income is measured by equivalent variation; that is, the expenditure to attain utility in year *t* in any given simulation using base year prices. It is similar in magnitude to real private consumption.

34 Although the continent registers by far the largest aggregate gains, the rest of the world experiences an increase of US\$76 billion by 2035, which translates into a gain of 0.1 percent relative to the baseline scenario.

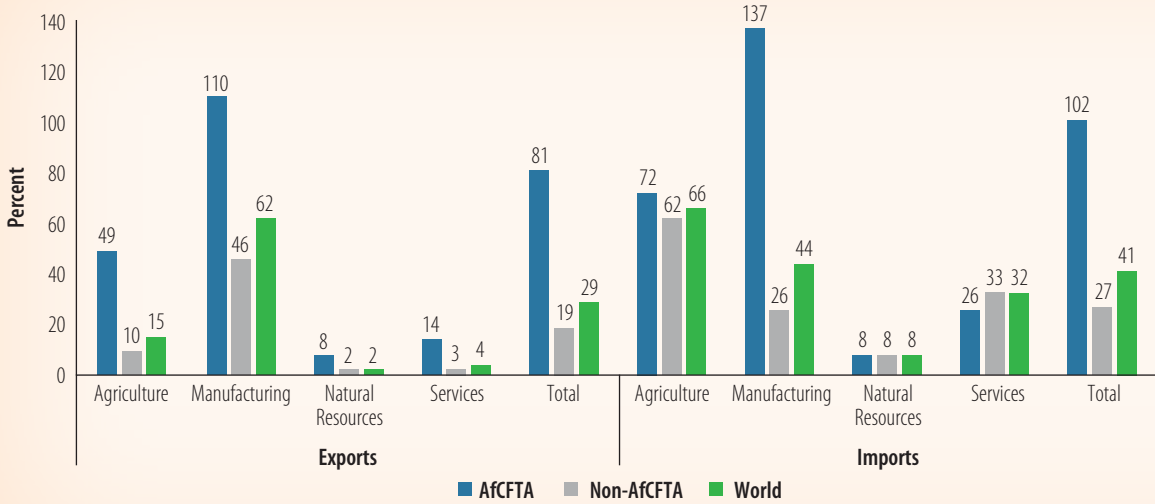
Foreign trade. Trade is expected to increase substantially in Africa. Export volumes grow nearly 29 percent by 2035 (relative to the baseline). Intracontinental export growth exceeds 81 percent, while exports to non-African countries increase by 19 percent. Intra-AfCFTA exports to regional partners will double or triple relative to the baseline in Morocco, the Arab Republic of Egypt, Cameroon, Ghana, and Tunisia. A significantly smaller expansion is expected in Mozambique, the Democratic Republic of Congo, and Zambia (10-30 percent). Under the AfCFTA scenario, total manufacturing exports from Africa register the largest increase (62 percent from the baseline for 2035), while manufacturing exports within the region and to the rest of the world increase by 110 and 46 percent, respectively. Agricultural exports have modest gains (49 and 10 percent for intra- and extra-African exports), and the gains in services trade are even smaller (4 percent overall and 14 percent within the region). Intracontinental trade, in monetary terms, grows from US\$294 billion in 2035 under the baseline scenario to US\$532 billion after the full AfCFTA implementation. By 2035, the biggest beneficiaries—in terms of the largest increases in the value of exports to regional partners—are, in order of value, Egypt, Morocco, South Africa, Nigeria, Kenya, and Côte d'Ivoire (between US\$48 billion and US\$11 billion). Analogous to the welfare gains, the smallest export expansions are expected for the economies that are already relatively open, such as Madagascar, Malawi, Mauritius, and Rwanda, with export increases of less than US\$1 billion.

Sectoral output and productivity. The treaty has the potential to boost regional output and productivity amid a large resource reallocation across sectors and countries. Under the baseline scenario (no AfCFTA), services output would grow to US\$8.5 trillion (142 percent growth), manufacturing to US\$4.5 trillion (131 percent), and agriculture to US\$1.7 trillion (106 percent). The AfCFTA would provide an additional boost in all these sectors except agriculture, where the output expansion would be US\$8 billion (0.5 percent) smaller than in the baseline scenario. Nevertheless, agricultural output would grow faster under the AfCFTA in all parts of Africa other than North Africa, where the agreement would spur a faster shift from agriculture toward manufacturing and services (figure 3.7).

The agreement can potentially boost Africa's output by US\$211 billion—with the largest increases in the service sector (US\$147 billion), manufacturing (US\$56 billion), and natural resources (US\$17 billion). Economic gains for the continent as a whole mask a lot of heterogeneity in outcomes across countries. Among the 24 African economies represented in the simulations, the relative importance of agriculture increases in 14 countries, natural resources in 12 countries, manufacturing in six countries, and services in 13 countries. Although the share of manufacturing in output decreases for the majority of countries, the volume of manufacturing output will continue to increase under the AfCFTA. It is higher for 15 of the 24 countries in 2035 (relative to the baseline scenario). Similarly, in the case of agriculture, the volume of output under the AfCFTA by 2035 is higher in 15 of the 24 countries and, in the case of services, the volume is higher in 21 countries, partially reflecting the positive income elasticity of services.

Labor markets. The full AfCFTA implementation would create better opportunities for unskilled and female workers. Across sectors, the share of workers in energy-intensive manufacturing, trade services, and public and recreational services would increase. Agricultural employment would increase in 60 percent of the countries, and wages for unskilled labor would grow faster

FIGURE 3.7: Impact of the AfCFTA on Trade, by Sector (deviation from the baseline for 2035)



The agreement can potentially boost Africa's output by US\$211 billion, with the largest increases in the service sector, manufacturing, and natural resources.

Source: World Bank 2020b.

where there is an expansion in agricultural employment. By 2035, wages for unskilled labor would be 10.3 percent higher than the baseline, while the increase for skilled workers would be 9.8 percent. Wages would increase slightly faster for women than for men, as output expands in key female labor-intensive industries. By 2035, wages would increase 10.5 percent (from the baseline) for women and 9.9 percent for men (figures 3.8 and 3.9).

FIGURE 3.8: AfCFTA: Effect on Wages, by Gender

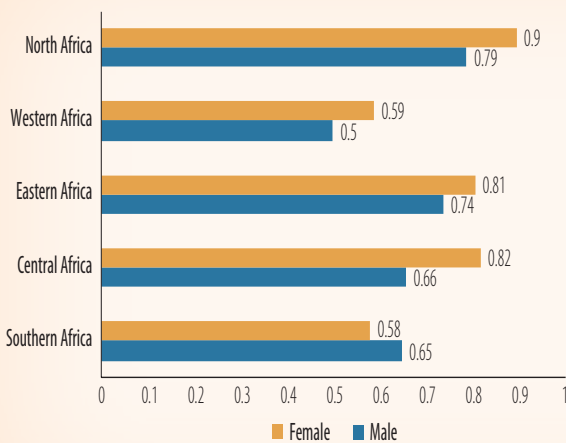
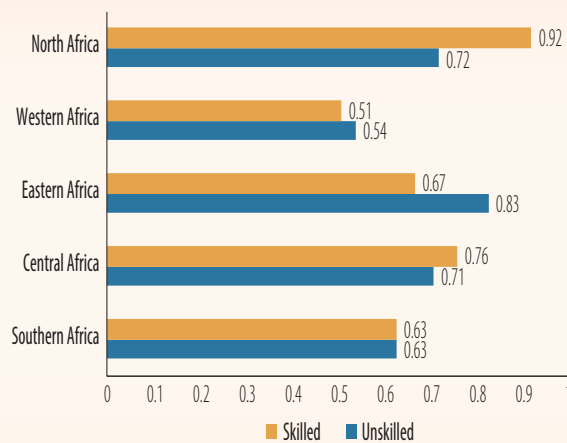


FIGURE 3.9: AfCFTA: Effect on Wages, by Skill



The full implementation of the AfCFTA would create better opportunities for unskilled and female workers.

Source: World Bank 2020b.

Labor market outcomes differ across countries: the AfCFTA could widen the skill and gender gaps in a few cases. Governments will need to focus on facilitating a smooth and inclusive transition by supporting flexible labor markets, improving connectivity within countries, and maintaining sound macroeconomic policies and a business-friendly environment for domestic and foreign investors. Policy makers will need to monitor carefully the distributional impact of the AfCFTA across sectors and countries, on skilled and unskilled workers, and on female and male workers. Doing so will enable them to design policies to reduce the costs of job switching and provide effective safety nets where they are needed most.

Poverty effects. The AfCFTA can lift an additional 30 million people from extreme poverty and 68 million people from moderate poverty. Across the continent, the poverty rate varies widely: it is 41.1 percent in Sub-Saharan Africa but less than 3 percent in North Africa. It is 77.7 percent in the Central African Republic but just 0.4 percent in Algeria and Egypt. Under the baseline simulations, the headcount ratio of extreme poverty in Africa is projected to decline to 10.9 percent by 2035, from 34.7 percent in the latest estimate (2015). Full implementation of the AfCFTA would contribute to a further decline by lifting an additional 1.5 percent of the continent's population from extreme poverty. In West Africa, the poverty headcount would decline by 12 million people, while the declines in Central Africa and East Africa would be 9.3 million and 4.8 million, respectively. At the moderate poverty line of \$5.50 a day in purchasing power parity terms, the AfCFTA has the potential to lift 67.9 million people (about 3.6 percent of the continent's population) out of poverty by 2035 (figures 3.10 and 3.11).

The AfCFTA can lift an additional 30 million people from extreme poverty and 68 million people from moderate poverty.

FIGURE 3.10: Extreme Poverty (PPP\$ 1.90/day)

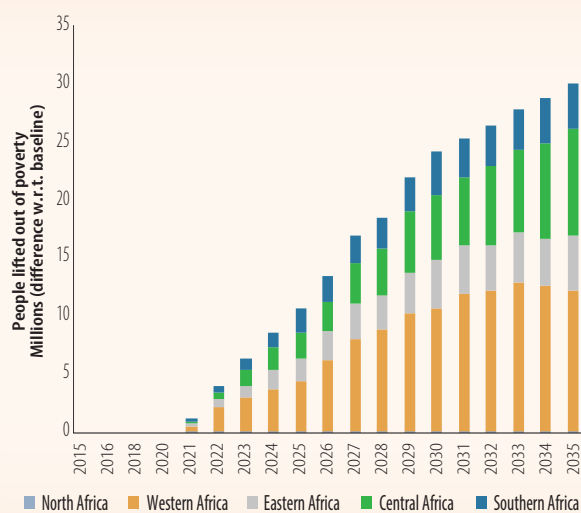
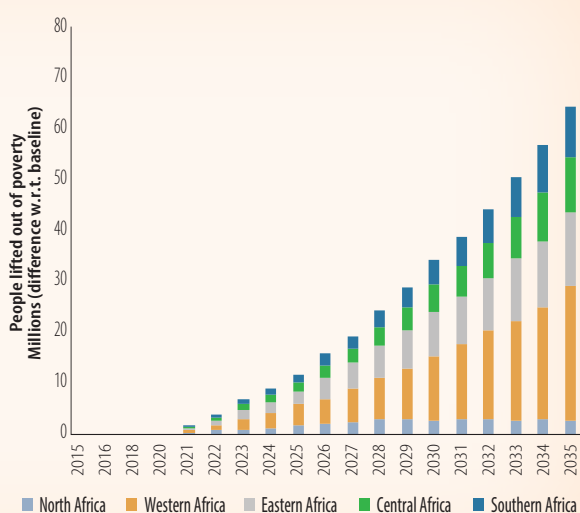


FIGURE 3.11: Moderate Poverty (PPP\$ 5.50/day)



Source: World Bank 2020b.

The analysis conducted in World Bank (2020b) may have underestimated the impacts, as the analysis does not capture the following: (1) informal or new trade flows in sectors and countries not trading in the baseline, (2) dynamic gains from trade (for example, economies of scale and learning by doing), and (3) foreign investment. Improving market conditions, competitiveness, and business sentiment will induce FDI into Africa, thus leading to higher investments and accelerating imports of high-technology intermediate and capital goods and improved management practices. Hence, FDI inflows could boost regional income above the gains predicted in this analysis. Yet, the results might overestimate the impacts, as the analysis does not capture the following: (1) the costs of lowering NTBs and trade facilitation measures, or (2) the transitional costs associated with trade-related structural change, such as employment shifts and potentially stranded assets, such as capital.³⁵

How to Maximize the Potential Benefits of the AfCFTA?

Maximizing the potential benefits of the AfCFTA requires that the treaty's institutions and member states effectively implement and administer the stipulated obligations. Consumers, investors, and traders play a critical role in this process by counterbalancing vested interests who may resist these reforms. Free trade in the region goes beyond tariff removal. It involves addressing on-the-ground constraints that may weaken the daily operations of ordinary producers and traders. This calls for regulatory reform, and capacity building among the institutions that enforce these regulations.

Actions at the supranational and national levels should be deployed simultaneously. For instance, the Regional Economic Communities can provide the framework for reform by bringing together regulators to define harmonized standards or agree on mutual recognition of the qualifications of professionals. Still, the responsibility for the agreement's implementation lies ultimately and unequivocally with each member country. National integration agendas must cover services as well as goods. Services are critical, job-creating inputs into the competitive edge of almost all other activities (for example, the role of transport in manufacturing). Reaping the benefits of the AfCFTA requires an implementation of the agreement that is underpinned by improved trade facilitation and connectivity. The Niamey Declaration contains important provisions about trade facilitation that will need to be implemented.

Trade routes in Africa were designed for exports away from the continent rather than facilitating intra-African trade. Economic centers in many landlocked countries are located several hundreds of kilometers from the closest seaport. Policy makers in all member countries, especially in transit countries, share a critical responsibility to help overcome geographical constraints or the lack of economies of scale due to small transportation volumes. A renewed focus on the efficiency of transport and logistics services is long overdue.

³⁵ Furthermore, the results are based on a new data set on gender disaggregated employment and wages, which requires further vetting by country experts.

The potential of the AfCFTA to become a milestone for development in the region will depend on: (1) the depth and breadth of the detailed commitments to remove trade barriers that are to be negotiated, (2) the extent to which AfCFTA commitments are effectively implemented on the ground, and (3) specific complementary initiatives ensuring a smooth transition to free trade and inducing greater flows of productive investment in nontraditional sectors, leading to more and better jobs.

Implementing the obligations in the trade agreement will likely prove challenging for many member states. AfCFTA institutions will likely require additional support to implement the agreement effectively, to identify critical bottlenecks and challenges in their economies and prioritize specific actions to ensure a smooth transition to free trade as well as attract more investments. Along with the challenges of monitoring the ongoing implementation, actions are needed to ensure fairness and a level playing field for all traders.

Drawing on the experience of similar negotiations in other developing countries, a complementary agenda to maximize the potential benefits of the AfCFTA would entail the following:

- a. Activities related to the implementation and administration of the AfCFTA agreement, including capacity building in the form of training, direct advice, and implementation support for the ministries of trade and border management agencies—especially customs, which will now be tasked with implementing an agreement to which they may not have had any previous exposure during the negotiation phase. This is essential to enable the compliance, administration and problem solving, as well as economic monitoring.
- b. Trade-related institutions' support for implementation, which includes capacity building for agencies other than the ministries of trade (in charge of trade and investment-related matters) that, in practice, affect the correct functioning of the AfCFTA.
- c. Transition to free trade, which implies sector-specific initiatives aimed at enabling domestic firms (in particular, SMEs) and addressing economic distortions affecting their competitiveness in a free trade environment.

An effective implementation of the AfCFTA will entail support to several agencies beyond those that are directly responsible for administering the agreement. Several authorities usually regulate and administrate procedures on various matters that directly affect the operation of the norms and disciplines of the trade agreement on the ground. With the support of institutions such as the World Bank Group, countries should deploy a series of analytical tools and specialized expertise to support those agencies whose mandates directly relate to AfCFTA commitments.

Concrete activities under trade-related implementation support will include benchmarking, regulatory gap analyses, economic impact assessments, economic modeling, procedural

streamlining process maps, regulatory transparency assessments, and stakeholder consultations. These activities will provide specific policy and regulatory reform recommendations for fully implementing the AfCFTA agreement in the following areas: (1) market access (tariff liberalization and elimination of NTBs), (2) trade facilitation and border management procedures, (3) sanitary and phytosanitary measures, (4) technical barriers to trade, (5) trade remedies (safeguards, antidumping, and countervailing duties), (6) trade in services, (7) investment, and (8) competition policy.

Facilitating a smooth transition to free trade entails national governments addressing distortions that affect private sector performance. Three activities are proposed to conduct this type of function. The first is identification of specific sectors that are vulnerable during the transition to free trade and estimation of the impact that specific AfCFTA commitments may have on domestic firms and jobs, gender, and other relevant variables. The second is diagnosis of specific economic and regulatory distortions affecting the competitiveness of selected types of firms (such as SMEs in selected sectors) and relying on successful lessons learned from relevant countries in addressing similar challenges. The third is good practices on planning, execution, and follow-up processes for information and consultation between the state and the private sector, to design specific agendas for transition to free trade in the context of the AfCFTA.

In conclusion, the AfCFTA offers ample opportunities for development in Africa; however, its implementation will be a significant challenge. Reducing and removing tariffs will be the easiest part—even if, in some cases, it comes with policy deliberations about the replacement of lost tariff revenues.³⁶ The hard part will be enacting the non-tariff and trade facilitation measures, which would yield the largest (potential) economic gains. Such measures will require substantial policy reforms at the national level, indicating that there is a long road ahead. Achieving the AfCFTA's full potential depends on agreeing to ambitious liberalization and implementing it in full. Partial reforms would lead to smaller effects.

³⁶ World Bank (2020b) indicates that tariff revenue losses are likely to be manageable

3.2 TECHNOLOGICAL TRANSFORMATION: A FOCUS ON DIGITAL UPGRADING IN AFRICA³⁷

Digital technologies offer opportunities to unlock Sub-Saharan Africa's potential for rapid economic growth, innovation, job creation, and the steady provision of services.³⁸ Evidence shows that a 10 percent increase in broadband penetration raises annual per capita growth by 0.9 to 1.5 percent in OECD countries, and increases GDP between 1.5 and 2.5 percent in developing countries (Czernich et al. 2011; ITU 2018, 2019). Yet, access to the internet remains unattainable for most people in Africa. Only 26 percent of the population (about 272 million) have used internet services on a mobile device (as opposed to 56 percent in East Asia), 49 percent of the population (512 million) live within the footprint of a mobile broadband network but have not used mobile internet, and 25 percent of the population (262 million) do not live within the footprint of a mobile broadband network.³⁹

Connectivity problems in Sub-Saharan Africa are compounded by the slow speed of the internet in the region and poor consumer readiness (about 55 percent of the population does not own a mobile phone). In April-June 2020, the average download speed for mobile internet was 17.4 megabits per second (Mbps) in Sub-Saharan Africa, compared with 39.7 Mbps in East Asia and the Pacific.⁴⁰ The lack of competitive markets and low purchasing power have led to unaffordable internet-enabled devices and data packages for an important part of the population in the region. Noncompetitive market structures may exacerbate the digital divide across income, gender, education, and urban-rural areas. Access to high-speed internet is equally low for African firms, despite the potential of digital technologies to reduce various business and transaction costs.⁴¹

The COVID-19 pandemic has highlighted the critical importance of digital infrastructure, technologies, and services in enabling government, businesses, and society to continue to function during times of required physical distance and to create more productive, inclusive, and resilient economies. Digital infrastructure and digitally-enabled services and applications have been essential to fight the spread of COVID-19, cope with physical distancing measures, and ensure business continuity of the government and the private sector. Unlike other public health crises, COVID-19 has demanded good quality virtual methods of communication, resilient broadband infrastructure, and greater use of online digital services and products.⁴²

Digital technologies for health have played a key role in containing the disease. Digital services and applications are being used in conjunction with data analytics techniques to facilitate decision making on public policy (for example, mobility indicators based on mobile operators' data have been used in Ghana, Mozambique, and Zimbabwe), to assist health professionals (telemedicine and AI-powered chatbot for triage, such as *Babyl* in Rwanda and *Mobihealth* in Nigeria), and to support broader health systems (for example, tracing, monitoring, procurement, staff deployment, and management of health facilities' capacity, among others).⁴³

37 This subsection benefits from several background papers of the ongoing joint Office of the Chief Economist in the Africa region-Digital Development Department research program on digital transformation for Africa. More detailed policy recommendations will be forthcoming in the report "Digital Africa: Building the Infrastructure Foundations and Facilitating the Adoption of Technologies for Jobs" in 2021.

38 Digital technologies refer to broadband networks, data center and cloud services, as well as voice networks in certain countries. They also include all software and digital applications that are available on the internet. More broadly, the most sophisticated technologies across many activities include digital elements, such as more intensive use of data increasingly supported by artificial intelligence.

39 The figures reported here correspond to the end of 2019 (GSMA 2020).

40 The minimum high-speed internet in the United States and Europe is 25 Mbps, the appropriate speed for quality videoconferencing or online education or telework.

41 In Senegal, 34 percent of firms use the internet, and 20 percent rely on a digital subscriber line (World Bank 2020p).

42 World Bank (2020f).

43 Kalenzi and Teklemariam (2020).

The availability of digital connectivity and digital services has also eased the mitigation of the economic and social effects of physical distancing measures. Digital services and applications that facilitate remote work for the public and private sectors, along with Edutech solutions, have helped in mitigating the disruption to school and work and ensuring business continuity. Digital services and applications such as mobile payments, food delivery, online shopping, social media, and instant messaging have enabled citizens to remain connected and economically active. For businesses, digital tools to manage supply and logistics chains have proven important in the face of the initial disruptions of GVCs. Box 3.3 summarizes some of the public and private responses in digital infrastructure and services to the COVID-19 pandemic.

However, the use of digital solutions poses a challenge for Sub-Saharan Africa. The region is characterized by a relatively low level of internet penetration (especially in low-income and rural areas and among small businesses), relatively high prices for internet connectivity, and lower quality of service. Reaping the benefits of digital solutions requires reliable connectivity. Otherwise, the region runs the risk of deepening the digital divide. Even governments faced severe broadband connectivity problems, since they did not have systems and equipment to enable remote work at scale. Access to broadband from home by government officials is limited, and digital connectivity of public institutions is almost inexistent, especially in remote areas. In addition to the challenge of availability of digital infrastructure, an important percentage of the population (49 percent) does not use internet services even if there is available coverage. The main barriers to accelerating digital adoption for households and SMEs are purchasing power, affordability linked to high prices of internet services and assets,⁴⁴ inadequate internet products, relevant content, lack of awareness and skills to use digital technologies, and even reluctance to use online services due to lack of trust.⁴⁵ And there are digital divides in the adoption of technology, where characteristics such as gender, age, education, employment status, and living in a rural area affect the likelihood of internet adoption.

This section documents the evolution of digital infrastructure in the region over the past decade, in terms of the coverage of broadband-capable mobile networks and the factors that constitute a barrier to greater rates of adoption—putting emphasis on affordability problems.⁴⁶ It then reviews recent firm-level evidence on the output and employment effects of adopting digital technologies in developing countries. The adoption and use of digital business solutions lead to firms having higher sales and productivity, and can be an entry point to broader, productivity-enhancing upgrading of technologies and capabilities across the economy to create better jobs for more people—one of the three pillars underlying the World Bank Group’s JET agenda. Digital technologies also enhance the welfare of households, thanks to increases in employment and higher earnings, lower consumer prices, and higher agricultural production and productivity. Finally, the section suggests that reaping the benefits of the digital economy requires a flexible regulatory framework and practices that promote competition and innovation among the different actors in the market (including transparency of market information), aims for universal access to high-speed internet, and addresses issues of consumer protection, data governance, and cybersecurity.

44 Competition in the information, communications, and technology sector can play an important role in lowering prices in the sector and encouraging new market entrants, leading to potential welfare gains, as shown by recent simulation exercises (Rodríguez-Castelán et al. 2020a, 2020b).

45 See Goldfarb and Prince (2008), Birba and Diagne (2012), and Rodríguez-Castelán, Ochoa, et al. (2020b).

46 This section looks at digital transformation from an infrastructure lens. It is an important but not exclusive dimension of the digital transformation with a significant contribution to productivity. An important driver of this transformation in Africa is the surge of digital tech startups over the past decade—especially agri-tech startups (Kim et al. 2020).

Digital Infrastructure: Sub-Saharan Africa Still Lags the Rest of the World

A dynamic, inclusive, and digitally safe economy is built upon five pillars, namely, digital infrastructure, digital skills, digital platforms, digital financial services, and digital entrepreneurship. Digital infrastructure is the first pillar to build a digital economy. It refers to the network services that are required for individuals, businesses, and governments to get online and link with local and global digital services.⁴⁷ Digital infrastructure includes connectivity (through high-speed internet and internet exchange points), the internet of things (mobile devices, computers, sensors, voice-activated devices, geospatial instruments, machine-to-machine communications, and vehicle-to-vehicle communications), and data repositories and computational facilities (data centers and clouds).⁴⁸

Trends of selected digital infrastructure indicators in Sub-Saharan Africa are compared with benchmark groups (industrial countries and non-Sub-Saharan African developing countries). Coverage and use of third generation (3G) and fourth generation (4G) networks are more limited in Africa, although they are increasing over time, and fifth generation (5G) network trials have been launched in a few countries. Unlike other regions, second generation (2G) networks are still in use, but there is potential to leapfrog directly to 4G, a technology that can be upgraded later to 5G, to enable high-speed communications that support advanced digital solutions.⁴⁹ The comparison is also made among country groups in Africa, such as East and Southern Africa (ESA), West and Central Africa (WCA), and North Africa. The evolution of digital infrastructure is captured by: (1) 3G network coverage and usage, (2) 4G network coverage and usage, and (3) the proportion of unique mobile internet subscribers and their market penetration. The data on network coverage and usage as well as unique (mobile internet and total mobile) subscribers were collected from the GSMA Intelligence database for a wide array of countries worldwide (including 48 Sub-Saharan African countries) for 2010–20.

3G Network Coverage

The evolution of 3G network coverage and population penetration (or usage) is depicted in figure 3.12.⁵⁰ Coverage is measured by the share of the population covered by the corresponding mobile network. Usage is proxied by the number of 3G connections per inhabitant. 3G network coverage has increased in all regions (industrial countries, Sub-Saharan Africa, and other developing countries) over the past decade, although at different speeds. The percentage of the population covered by 3G networks in industrial countries increased from 76 percent in 2010 to near universal coverage (98 percent) in 2020. The surge in network coverage is even steeper for other developing countries and Sub-Saharan Africa: 3G network coverage grew from 48 percent of the population in 2010 to 93 percent in 2020 in other developing countries, while it nearly tripled in Sub-Saharan Africa (rising from 26 percent of the population in 2010 to 77 percent in 2020). Although the region exhibits the lowest 3G network coverage over the past decade, it registers the fastest pace of progress, with an annual average growth rate of 12 percent. Actual access (or usage), as captured by the number of 3G connections per inhabitant, is typically lower than coverage and exhibits diverging trends between industrial countries and developing

47 It includes the spectrum of network, computation, and storage functions for successful operation of a connected economy.

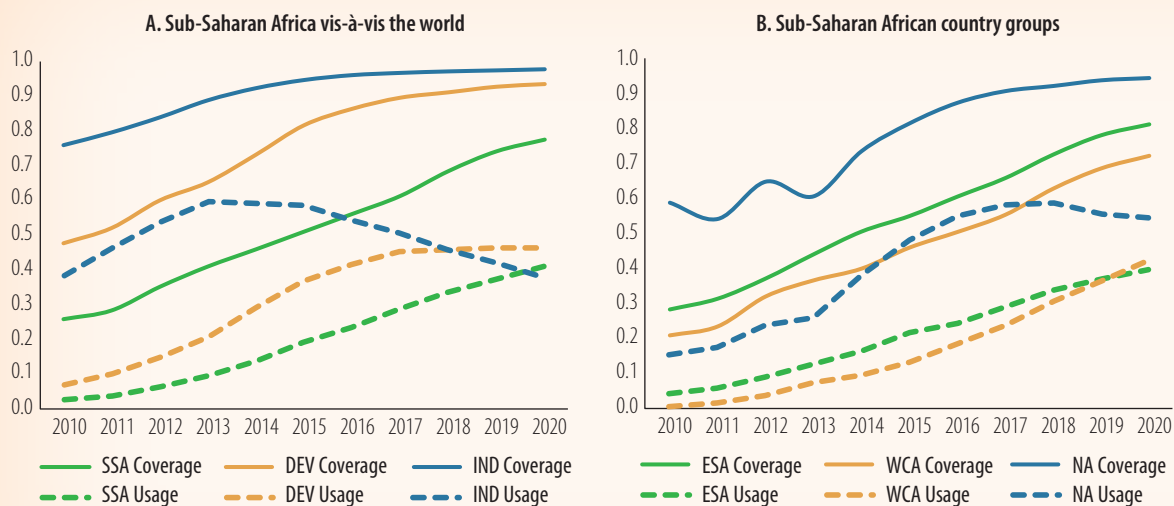
48 A more complete benchmarking of the digital economy in Africa—along its five foundational pillars—is presented in World Bank (2019).

49 An analysis of technological options finds that 4G using a wireless backhaul will likely be the most cost-efficient technology for deployment to achieve universal broadband coverage in Africa (Oughton 2020).

50 3G wireless mobile technology was the first to enable video calls and provided faster data transfer.

countries (including Sub-Saharan Africa). After reaching a peak in 2014, market penetration of 3G connections declined among industrial countries—thus reflecting the rollout of 4G technologies in these countries. Actual access in other developing countries and Sub-Saharan Africa has grown steadily, although at declining rates. Yet, actual access is considerably lower than coverage by 3G networks. On average, 3G networks covered 77 percent of the population in Sub-Saharan Africa by 2020, while the market penetration of 3G connections was slightly greater than 40 percent (figure 3.12, panel A).

FIGURE 3.12: Coverage and Usage of 3G Networks



Coverage and usage of 3G networks has increased in the region but there is a usage gap.

Source: GSMA Intelligence database.

Note: These figures report (simple) averages across country groups for each corresponding year. Coverage is defined as the percentage of the population covered by 3G networks. Usage is measured by the number of 3G connections per inhabitant. SSA=Sub-Saharan Africa; DEV=developing Countries excluding SSA countries; IND=industrial countries.

The evolution over time of 3G mobile network coverage and usage across country groups in Africa over 2010–20 is plotted in figure 3.12, panel B. There has been a sharp increase in 3G network coverage in the WCA region as well as the ESA region. The pace of progress in network coverage varies across groups. 3G mobile network in WCA expanded from 21 percent of the population in 2010 to 72 percent in 2020, while that in ESA grew from 28 percent of the population in 2010 to 81 percent in 2020. 3G mobile coverage in ESA and WCA trail that in North Africa throughout the decade. By 2020, the 3G wireless mobile network reached nearly 95 percent of the population in North Africa. The coverage of actual access to 3G networks in these country groups is lower. On average, the market penetration of 3G connections in North African countries has started to decline, while that of WCA countries has continued to grow at increasing rates. Yet, 3G networks covered 72 percent of the population, while there were only 42 connections per inhabitant by 2020.

BOX 3.3: Digital Sector Responses to COVID-19 in Sub-Saharan Africa

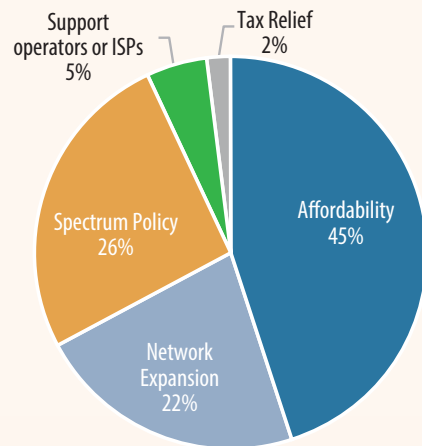
The internet has often been at the centerstage of the different measures undertaken by governments, businesses, and other communities to respond to COVID-19. Many of these measures are likely to persist in the aftermath of the pandemic, as they have elicited cheaper and more efficient ways to run many business functions and deliver education, health, social protection, civic education, and other services.

Heightened focus on access and affordability of voice and data connectivity, given the need to enforce rules on social distancing, is reflected in first-response government interventions and actions by mobile operators to reduce prices, avoid disconnections for lack of payment, and increase bandwidth. These measures have been accompanied later by actions to facilitate network expansion and reduce congestion, such as adoption of new technologies (for example, Google Loon in Kenya and Mozambique) and temporary release of additional spectrum (Ghana, South Africa, and Zambia).

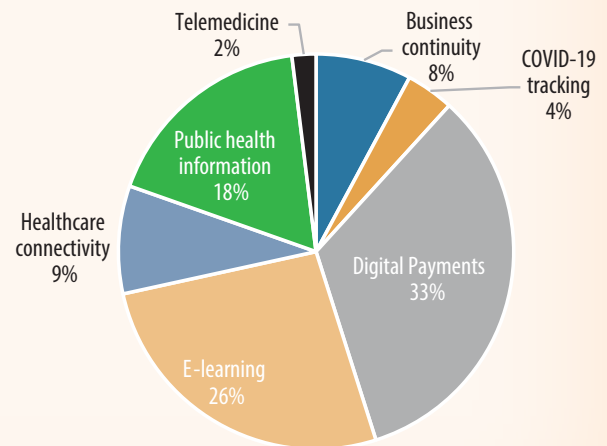
Governments are also strengthening public backbones and, in some cases, expanding the scope of small and medium-size enterprises, although this has the potential of crowding out private investment. Governments have also partnered with the private sector to deliver online services, such as public health information and e-learning, and ease the use of digital payments. Figure B3.3.1 shows the composition of 144 digital policy responses to COVID-19 pandemic recorded for 31 Sub-Saharan African countries from March to July 2020. Around half of the initiatives were launched by the private sector and the rest were led by governments or built on public-private partnerships. About three-quarters of the responses focus on digital services and the rest on digital infrastructure.

FIGURE B3.3.1: Digital Sector Responses to the COVID-19 Pandemic in Sub-Saharan Africa

A. Digital infrastructure responses to COVID-19 in Sub-Saharan Africa



B. Digital services responses to COVID-19 in Sub-Saharan Africa



Source: World Bank Group, Digital Development Global Practice, Digital COVID-19 Responses Database. Information as of August 2, 2020.

Note: Includes information on public and private sector responses to COVID since March 2020 collected through online research and therefore is not an exhaustive list of responses for all countries, but instead a subset of response types observed and recorded during the emergency and recovery phases of the pandemic.

The COVID-19 pandemic and the ensuing lockdown measures affected internet traffic around the world, including Sub-Saharan Africa. During the months of “stay-at-home” orders, there was a rapid and sustained increase in data traffic. For instance, internet exchange points in Cape Town, Johannesburg, and Durban showed an increase of 30 percent in internet traffic at the onset of the great lockdown. South Africa is still experiencing higher internet traffic, at around 45-48 percent above the pre-lockdown period. Increased traffic affected quality of services, but as public and private stakeholders responded swiftly with a series of measures to ease access to the internet, speed was restored and even increased in some countries. Private telecommunications operators in Sub-Saharan Africa implemented data capacity upgrades—for example, Orange doubled the capacity of all data plans for free in Mali. Public regulators updated their spectrum allocation policies—for example, the Zambia Information and Communications Technology Authority released additional spectrum for free to boost internet efficiency (Comini 2020).

4G Network Coverage

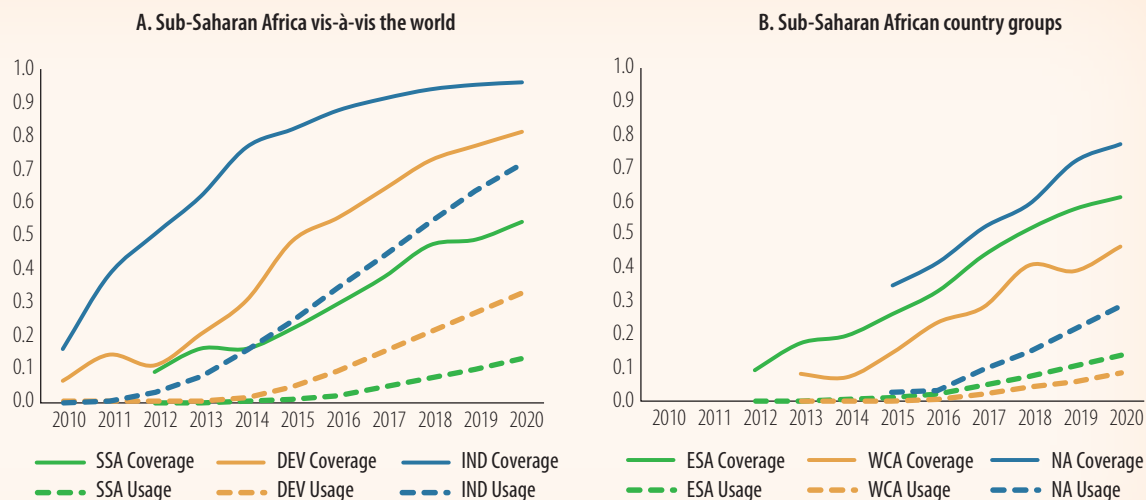
4G broadband cellular network coverage and usage (or actual access) is depicted in figure 3.13.⁵¹ The percentage of the population covered by 4G networks expanded rapidly across all regions—although later and at a faster pace in developing countries (figure 3.13, panel A). Over the past decade, the coverage of 4G mobile networks increased from 17 percent of the population in 2010 to 96 percent in 2020 among advanced countries (that is, growing at an annual average rate of 19 percent over the past decade). Growth was even faster among developing countries, with the percentage of the population covered increasing from 7 percent in 2010 to 81 percent in 2020. In the case of Sub-Saharan Africa, 4G network coverage grew from 9 percent in 2012 to 55 percent in 2020 (that is, it increased at an average annual rate of 25 percent). Yet, rates of market penetration (actual access) are considerably lower—especially among developing countries and Sub-Saharan Africa. The gap between coverage and actual access is not as marked among advanced countries: while 96 percent of the population is covered by 4G networks, market penetration is about 72 percent. In Sub-Saharan Africa, 4G networks cover on average 55 percent of the population, while market penetration is below 14 percent by 2020.

The trends of 4G network coverage and usage (as proxied by market penetration) across subregions in Africa over the past decade are presented in figure 3.13, panel B. There is a marked increase in network coverage across all subregions, with WCA growing at a faster pace. Network coverage expanded from 8.6 percent of the population in 2013 to 47 percent in 2020 across WCA countries, while it jumped from 18 percent in 2013 to 61 percent in 2020 across ESA countries. Again, North Africa has greater coverage than the two other subregions—providing access to 78 percent of the population in 2020. The access-coverage gap in 4G networks is even greater than that of 3G networks for all country groups. For instance, 4G networks cover 47 percent of the population in WCA countries, while the average market penetration of 4G connections is 8.6 percent. In the case of ESA countries, 61 percent of the population is covered by 4G networks, while there are 14 connections per 100 people by 2020.

51 4G wireless mobile technology was the first to provide ultra-broadband internet access.

Market penetration of 4G connections is still low in Sub-Saharan Africa.

FIGURE 3.13: Coverage and Usage of 4G Networks



Source: GSMA Intelligence database.

Note: These figures report (simple) averages across country groups for each corresponding year. Coverage is defined as the percentage of the population covered by 4G networks. Usage is measured by the number of 4G connections per inhabitant. SSA=Sub-Saharan Africa; DEV=developing Countries excluding SSA countries; IND=industrial countries.

4G mobile network coverage varies widely across countries in Sub-Saharan Africa. In 2020, 4G networks cover more than 90 percent of the population in three countries, namely, Mauritius, Rwanda, and South Africa (all of them in the ESA subregion).⁵² At the other extreme of the distribution, in four countries (Burkina Faso, the Central African Republic, Guinea, and Niger) 4G networks cover less than 20 percent of the population (these countries are in the WCA subregion). Finally, actual use of 4G networks (as proxied by market penetration) is considerably less than the coverage for most countries in the region. About half of the countries with available data (22 of 43 countries) have a market penetration that does not exceed 10 percent (that is, fewer than 10 connections per 100 inhabitants).

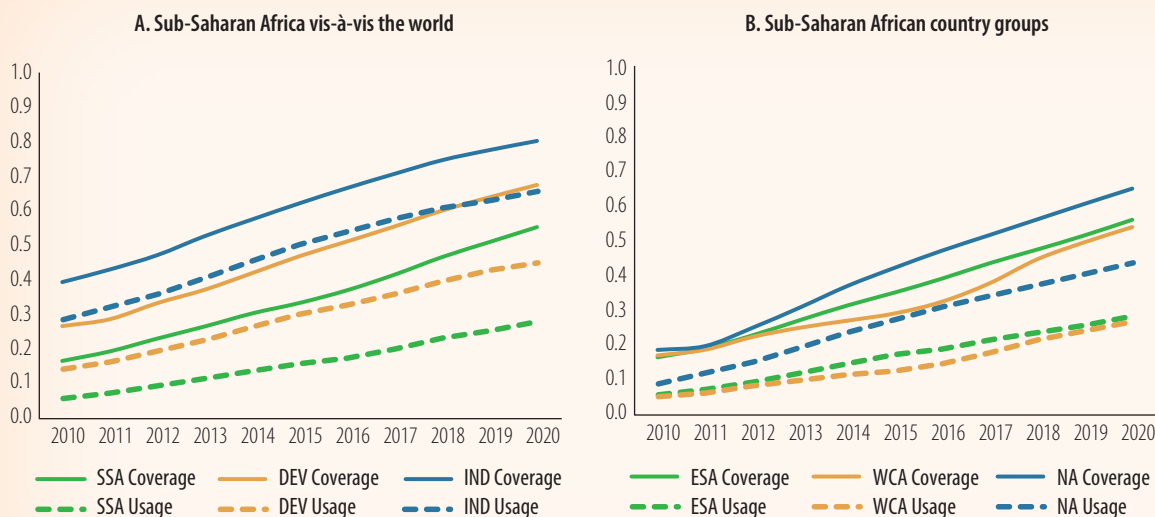
Share and Usage of Mobile Broadband-Capable Connections

The adoption of the internet in African countries can also be assessed by the penetration of mobile broadband-capable connections in the market (as a percentage of total connections and the population). The share of mobile internet connections is defined as the proportion of unique mobile internet subscribers in total unique subscribers. Usage is measured by the number of unique mobile internet subscribers per inhabitant. Figure 3.14 plots the proportion of mobile internet subscribers as a share of total mobile subscribers and the population across advanced countries, developed countries, and Sub-Saharan Africa (panel A). It shows that the share of subscribers with internet-enabled devices has increased across all regions (advanced countries, developing countries, and Sub-Saharan Africa). Declining mobile data costs and greater demand might explain this trend—and, in turn, the increase in demand responded to more relevant content and improved network quality (GSMA 2019). The share of mobile broadband-capable subscribers increased from 39 percent of total connections in 2010 to 80 percent in 2020 among

⁵² Although 4G networks cover nearly the entire population of Rwanda in 2020, the market penetration of 4G connections is 8.5 percent. The low usage might be attributed to the high price of 4G devices.

advanced countries. The share is lower in developing countries (68 percent in 2020, up from 27 percent in 2010), and Sub-Saharan Africa (56 percent in 2020, up from 17 percent in 2010). Still, the number of unique mobile internet subscribers per inhabitant is significantly lower. The percentage of mobile unique subscribers in the total population is about 66 percent among advanced countries by 2020, while it is 46 percent in developing countries and 28 percent in Sub-Saharan African countries.

FIGURE 3.14: Broadband-Capable Connections: Share and Usage



The share of subscribers with internet-enabled devices has increased in the region.

Source: GSMA Intelligence database.

Note: These figures report (simple) averages across country groups for each corresponding year. Coverage is defined as the percentage of the population covered by 4G networks. Usage is measured by the number of 4G connections per inhabitant. SSA=Sub-Saharan Africa; DEV=developing Countries excluding SSA countries; IND=industrial countries.

The evolution of the share of unique mobile internet subscribers in total subscribers as well as the population penetration within country groups in African is plotted in figure 3.14, panel B. The share of mobile internet in total mobile subscribers jumped from 17 percent in 2010 to 55 percent in 2020 across WCA countries, while it increased from 16 percent in 2010 to 56 percent in 2020 among countries in the ESA subregion. The share of unique subscribers that have mobile internet-enabled connections in North Africa has been higher (65 percent in 2020) than in the other African subregions. However, market penetration of mobile internet subscribers is low for the African country groups: the percentages of the population with a mobile internet subscription are, on average, 27 and 29 percent for the WCA and ESA subregions, respectively. Finally, there is greater variability in the share and penetration of unique mobile internet subscribers in Sub-Saharan Africa. The percentage of the population with a mobile internet subscription in 2020 exceeds 40 percent in six Sub-Saharan African countries (South Africa, Mauritius, Lesotho, the Seychelles, Botswana, and Cabo Verde). The population penetration fails to surpass 20 percent for nine countries in the region (the Comoros, the Central African Republic, Somalia, Burundi, Niger, Liberia, Chad, Malawi, and Madagascar).

Barriers to Mobile Internet Adoption

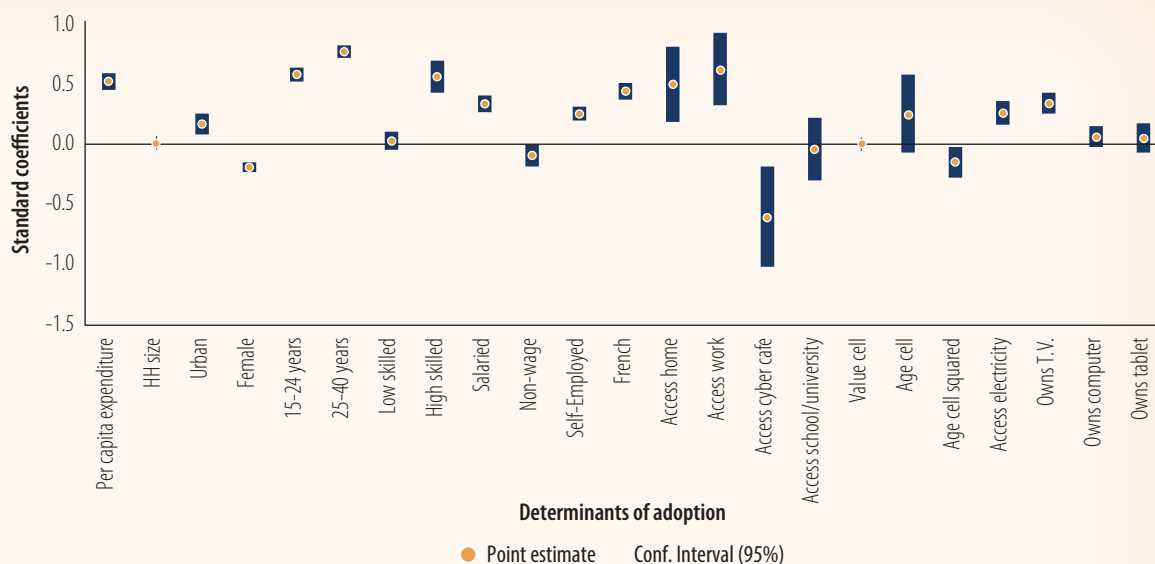
Mobile penetration has increased significantly across all regions, although at different speeds. Yet, mobile phone ownership in the Sub-Saharan Africa region has reached less than half of the population (a penetration rate of 45 percent in 2018). Mobile ownership in leading developing regions has exceeded three-quarters of the population—for example, Eastern Europe and Central Asia (84 percent) and East Asia and the Pacific (78 percent). The low levels of mobile phone ownership in Sub-Saharan Africa restrict mobile internet adoption.

Surveys undertaken by Research ICT Africa (RIA) show that the affordability of devices and lack of awareness are the main barriers to internet use in the nine survey countries.⁵³ Affordability of internet-enabled devices is the main barrier to access in Mozambique (76 percent of the population surveyed), Tanzania (64 percent), Uganda (51 percent), and Rwanda (43 percent). Lack of awareness is the main barrier in Ghana (43 percent of the population surveyed) and Nigeria (40 percent). Unaffordable service costs are a barrier for 15 percent of the population surveyed in South Africa and 33 percent in Rwanda (Research ICT Africa 2019).

Evidence from Senegal for 2018–19 shows that the main drivers of individual mobile internet adoption are household welfare (measured by consumption per capita), age, gender, tertiary education, living in an urban area, language, and employment status (figure 3.15). Thus,

Purchasing power, gender, tertiary education, and employment status determine internet adoption in Senegal.

FIGURE 3.15: Determinants of Mobile Internet Adoption in Senegal, 2018-19



Source: Rodríguez-Castelán et al. 2020b.

Note: Point estimates at 5 percent confidence interval of a probit model. Standard errors are clustered by enumeration area. Mobile internet access is defined as an individual's access the internet through their mobile phone or alternate mobile devices. Location baseline dummy refers to rural areas. The age baseline dummy is 41+ years. Unskilled is the base variable across education categories. Inactive and unemployed is the base variable across labor categories. The base category for read/write French refers to national languages, other languages, and those that cannot read and write. Price of cellphone is the median value of acquisition in the enumeration area. Age of cellphone is the median value of time the household has owned the device. High skilled is defined as individuals with tertiary education or more. Salaried workers are those employed who received remuneration. Self-employed are those individuals who responded that they are working on their own accord. Per capita expenditure, household size, access to electricity and owning a television are household-level variables. All results are statistically significant, with exception of low-skilled individuals, those with access to the internet at school, and for households that own a television set or a computer.

53 The countries included in the 2018 RIA survey on barriers to internet access were Ghana, Kenya, Lesotho, Mozambique, Nigeria, Rwanda, Senegal, South Africa, and Uganda.

purchasing power (ability to consume per capita) here plays a similar role to affordability in determining mobile internet adoption, in addition to affordability. The results show that increasing per capita expenditure by CFA 341,961 (equivalent to one standard deviation of the mean per capita expenditure) would increase mobile internet adoption by 14 percent. There are also digital skills gaps across socioeconomic groups in terms of gender, skills, and age. Being a woman lowers the likelihood of adoption by 5 percent, while having tertiary education or higher is associated with an additional 16 percentage points in the probability of adopting mobile internet, stressing the importance of education. Individuals who are between ages 25 and 40 years are 21 percentage points more likely to have access to mobile internet (Rodríguez-Castelán et al. 2020c). These findings highlight the need for gender-, skill-, and age-specific approaches in promoting digital technology adoption.⁵⁴

The finding that purchasing power is the one of the most important factors for mobile broadband internet adoption puts emphasis on the importance of competition in driving the adoption of digital technologies. Simulation exercises show that greater competition in the Senegalese mobile internet market would lower prices, which would raise households' purchasing power and lead to welfare gains (Masaki, Ochoa, and Rodríguez-Castelán 2020). Policies that increase competition among mobile network operators may lead to greater efficiency and affordability and increased quality of services.

Mobile data and internet-enabled devices are still expensive in Africa despite declining costs. The cost of acquiring mobile data as a share of (average) income has been declining over time; however, the cost of 1 gigabyte (GB) still exceeds 2 percent of monthly GDP per capita in more than half of the developing countries.⁵⁵ The (median) cost of 1 GB declined from 2.9 percent of monthly GDP per capita in 2016 to 2.2 percent across developing countries in 2018 (GSMA 2019). Still, there is wide variation across regions. Purchasing mobile data is more expensive in Sub-Saharan Africa (6.8 percent of monthly income per capita) than in South Asia. Within Sub-Saharan Africa, more than three-quarters of the countries have affordability levels that exceed the 2 percent target. Developing an inclusive digital economy requires mobile data to be affordable for the poorest. The cost of purchasing mobile data for the bottom quintile of the population is still expensive in developing areas (that is, it is above the 2 percent target for all regions) and it is particularly higher in Sub-Saharan Africa, at 39 percent of monthly income per capita (figure 3.16).

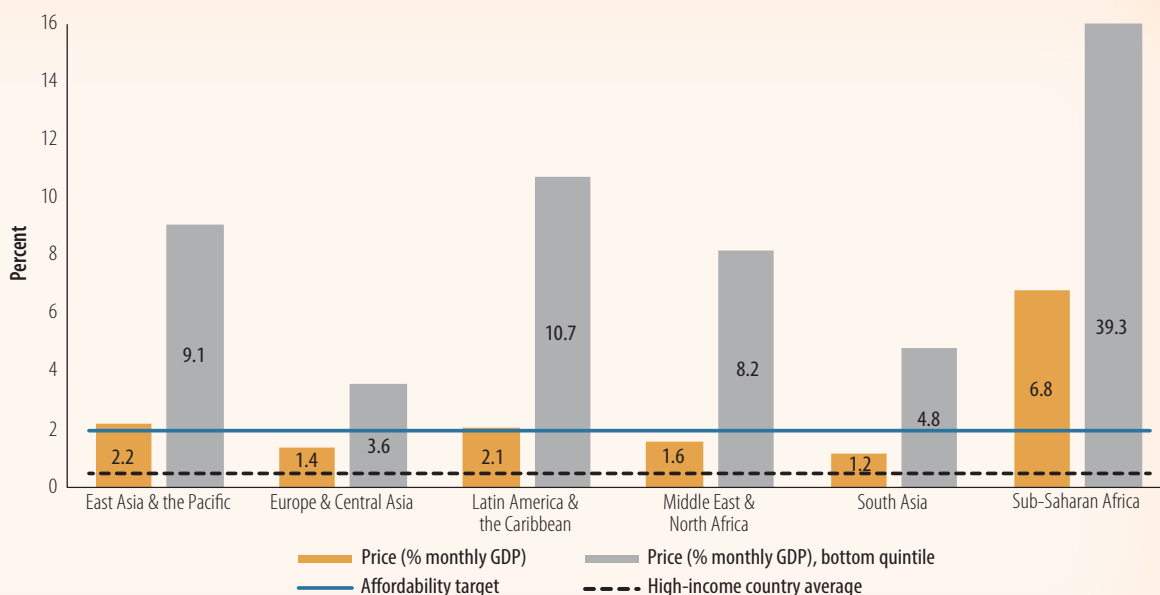
In contrast, the cost of internet-enabled devices has declined at a much slower pace than the cost of mobile data. The (median) cost of an entry-level device in developing countries dropped slightly, from 23.7 percent of monthly income per capita in 2016 to 23 percent in 2018. About one-quarter of developing countries face costs of entry-level devices that exceed 50 percent of monthly income. On average, the price of a mobile device as a percentage of personal income is the cheapest in Latin America (at 16 percent of monthly income per capita), while it is the most expensive in Sub-Saharan Africa (69 percent). The cost of a mobile device relative to income per capita is prohibitive for the poorest segments of the population. On average, the price of an internet-enabled feature phone for

⁵⁴ Box 3.4 provides additional evidence on the household welfare effects of internet-based business technologies in Senegal, as well as of the main drivers of mobile internet adoption.

⁵⁵ The Broadband Commission for Digital Development targeted entry-level broadband services to be made affordable in developing countries at less than 2 percent of monthly gross national income per capita by 2025.

Purchasing mobile data is more expensive in Sub-Saharan Africa.

FIGURE 3.16: Cost of 1GB Data in Developing Countries, by Region



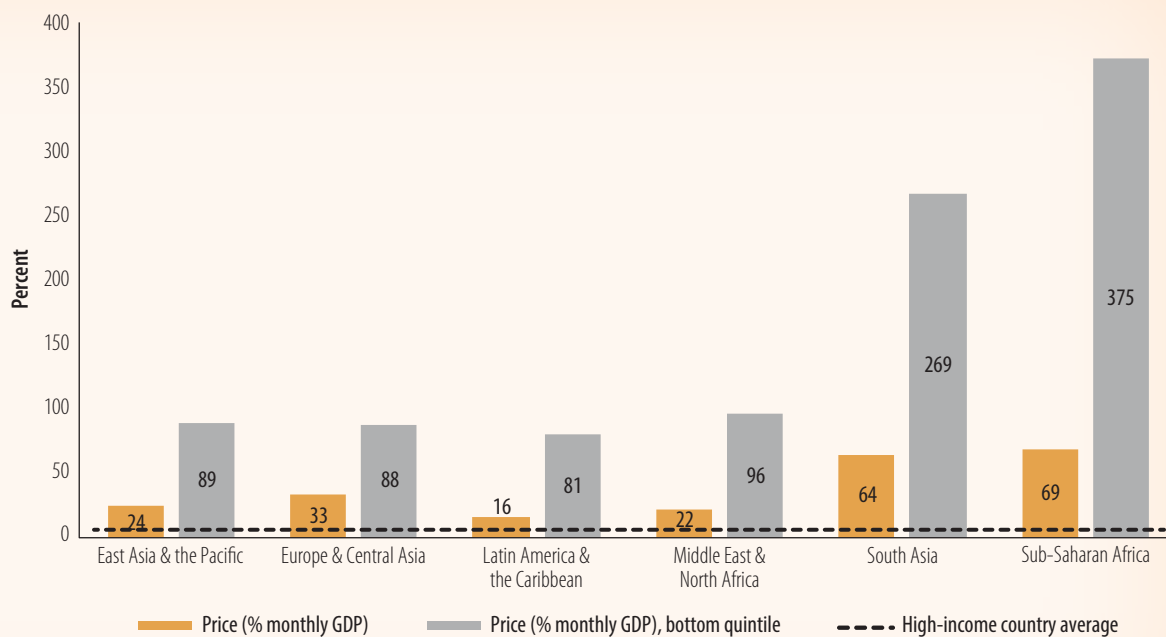
Source: GSMA 2019.

Note: The figure plots the average cost in 2018, from GSMA Intelligence calculations using pricing data from Tarifica. The data on income distribution (the bottom quintile) were collected from the World Bank's World Development Indicators; the GDP per capita data were obtained from the International Monetary Fund's World Economic Outlook. GB = gigabyte; GDP = gross domestic product.

the bottom quintile is approximately 81 percent of monthly income per capita in Latin America and 89 percent in East Asia. In Sub-Saharan Africa, the cost of such device among the poorest segments of the population is 375 percent of their monthly income (figure 3.17).

The cost of a mobile device relative to income per capita is prohibitive for the poorest segments of the population in the region.

FIGURE 3.17: Price of Internet-Enabled Devices in Developing Countries, by Region



Source: GSMA 2019.

Note: GSMA Intelligence calculations based on pricing data from Tarifica. The price of the device is the cheapest internet-enabled feature phone or smartphone available (at the time of data collection) sold by mobile operators or mobile phone retailers. Affordability is computed by dividing the price by monthly GDP per capita. The data on income distribution (the bottom quintile) were collected from the World Bank's World Development Indicators, and the data on GDP per capita were obtained from the International Monetary Fund's World Economic Outlook.

The high price of internet-enabled devices is not the only obstacle for mobile internet penetration in developing countries. Payment plans are not an option in most post-paid markets in developing countries. Consumers in these countries need significant resources, especially those in lower-income households, for one-off purchases rather than being able to purchase these devices in monthly installments. Fostering an inclusive digital economy includes connecting the unconnected by offering payment plans to acquire internet-enabled devices. For instance, Safaricom launched the Maisha Ni Digital (“Life is Digital”) campaign in partnership with Google to improve access to smartphones and the internet. In July 2019, Safaricom introduced affordable 4G devices in Kenya (ranging from US\$35 to US\$55) to provide the digital experience for customers without smartphones. Customers are also offered payment plans for phone upgrades and personalized data plans (GSMA 2019). Furthermore, technological advances are delivering new smartphones at lower prices. For instance, Orange partnered with Intel and KaiOS Technologies to launch a new 4G version of their Sanza phone, “Sanza XL,” in December 2019. It is being offered for US\$28 in Botswana, Cameroon, Côte d’Ivoire, Egypt, Jordan, Mali, and Senegal. Plans for expansion to other African countries were expected before the end of 2020.

Digital Economy as a Platform to Boost Productivity and Job Creation

Adopting digital business solutions can have an impact on firms’ sales and productivity and, through higher levels of production, on better jobs for more people. For instance, using an e-mail to connect with suppliers or clients, or having/gaining online presence through a business website can have an impact on the revenue productivity of firms through different channels. From the demand side, the reduction of search and transaction costs has an impact on the firm’s profitability by enhancing access to new clients (*extensive* margin) or bolstering the number of online transactions of existing clients (*intensive* margin). Greater profits, in turn, might enable firms to invest in innovation, managerial upgrading, or technological adoption. From the supply side, using an e-mail to connect with suppliers increases the (potential) group of input providers and boosts production efficiency.

Recent research has estimated the impact of the adoption of digital technology on productivity and factor demand in developing countries. Digital business solutions can have a significant impact on firms’ productivity and demand for labor and capital (Cusolito, Lederman, and Peña 2020).⁵⁶ Business digitization can potentially have a greater contribution to a firm’s revenue productivity (TFPR) than that of exporting (De Loecker 2013) and managerial experience (Bloom and Van Reenen 2007, 2010). Systematic evidence on the effects of adoption of digital technologies on firm productivity for a cross-section of developing countries is not ample. The gradual arrival of submarine internet cables has a positive impact on firm entry, productivity, and exporting. Employment also increases when fast internet arrives. Increases in skilled jobs do not occur at the expense of unskilled jobs across African countries. Yet, fast internet shifts employment shares to higher productivity occupations (Hjort and Paulsen 2019). Firms adopting digital technologies have also experienced an increase in TFP in Argentina (Brambilla and Tortarolo 2018), Brazil (Dutz et al. 2017), Chile (Almeida et al. 2017), and Mexico (Iacovone and Pereira-López 2018). With the exception of Brazil, firms that have adopted information and

⁵⁶ The authors gathered manufacturing firm-level data on sales, input usages, exporting status, managerial experience, and digital technology adoption from the World Bank’s Enterprise Surveys for 82 countries (of which 27 are in Sub-Saharan Africa) for 2002–19. This survey is nationally representative of the formal sector.

communications technology across these Latin American economies exhibit increases in total employment—especially, in low-skilled labor.

Empirical evidence for a large sample of developing countries shows that there is a productivity premium from business digitization; however, this premium varies across firms. Median estimates of the impact of digital technologies on firms' TFP suggest that these effects are comparable to the benefits of learning-by-exporting and greater than those associated with managerial experience. The (probability-adjusted) median TFP premium from using an e-mail is 1.6 percent and that of having a business website is 2.2 percent, while those of exporting and managerial experience are 1.6 and near zero percent, respectively. Furthermore, there is no evidence of job displacement from the adoption of these digital technologies. Instead, business digitization leads to a greater demand for labor and capital by firms (Cusolito, Lederman, and Peña 2020).

Adopting digital business solutions can affect the skill composition of labor demand by firms. Using an e-mail can improve a firm's efficiency to the extent that it boosts the firm's connectivity with suppliers of intermediate goods. The firm's improved efficiency leads to a greater demand for skilled workers in the manufacturing and service sectors. Having a business website, on the other side, will bolster productivity and the demand for skilled workers by boosting transaction volumes and attracting new clients. Recent evidence shows that digital technology adoption has an impact on productivity and the skill composition of labor demand in Sub-Saharan Africa's manufacturing and service sectors (Cusolito and Patiño Peña 2020).⁵⁷ Productivity premiums from using an e-mail have no significant differences between the manufacturing and service sectors in the region. In contrast, the premiums from having a presence online are larger across manufacturing firms relative to services firms. Additionally, adopting business digital solutions can have a scale effect for skilled and unskilled labor. However, there is a skill bias from e-mail adoption across manufacturing and services firms in Sub-Saharan Africa. In the case of having an online footing (a business website), there is greater demand for skilled labor in manufacturing, while there is a larger increase for unskilled workers in services.

The case of Senegal illustrates the drivers of digital adoption, the usage of more specialized digital technologies, and the extent of the digital divides across age and gender, and their association with the business outcomes of microenterprises (Atiyas and Dutz 2020).⁵⁸ Smartphones are being used by 16 percent of microentrepreneurial firms in Senegal, significantly lower than for firms with five or more workers (31 percent). Youth-owned microenterprises are twice as likely to use a smartphone than older-owned firms (27 versus 14 percent), while women-owned firms are slightly less likely to use a smartphone than men-owned firms. Microenterprises that have adopted mobile broadband typically have had a loan, have electricity, are more likely to produce services (other than retail trade, relative to agriculture), and are located in urban areas. Schooling is a positive inducement for women-owned firms to adopt. However, although vocational training increases the likelihood of smartphone adoption across the population of firms, its net effect on women seems to be closer to zero or negative. Furthermore, microenterprises using smartphones tend to exhibit higher labor productivity and

⁵⁷ The authors use firm-level data for 90 countries over 2002–19 from the World Bank Enterprise Surveys database. The survey provides information on the educational level of the workforce, which allows the calculation of the firms' share of skilled and unskilled workers. Digital technology adoption is proxied by the information on whether the firm uses business e-mail and a website.

⁵⁸ The authors use a nationally representative sample of more than 500 firms in Senegal over 2017–18. About 90 percent of these firms are not fully formal and more than 95 percent have five or fewer full-time employees—more than half of the firms in the sample are self-employed household enterprises without full-time paid employees.

sales and are more likely to export relative to those using 2G phones, controlling for having a loan, having electricity, and being fully informal, among other drivers of these outcomes.

The relationship between adoption/use of digital technologies and jobs in Senegal is explored from two dimensions: (1) “jobs for more people” (the extent to which use of digital technologies is positively associated with firms that support more full-time employees), and (2) “better jobs” (the extent to which use of digital technologies is associated with the generation of higher incomes, that is, higher worker wages and per-owner profits).⁵⁹ Having a smartphone per se does not matter for generating more jobs (or larger firm size). The largest statistically significant conditional correlate of productivity, sales, and jobs is a more specialized internal-to-the-firm management technology, which is a proxy for management capabilities more generally, namely inventory control/point-of-sale (POS) software—which facilitates documenting and tracking the changing levels of inventories and customer purchases over time, the lifeblood of small companies, rather than writing them on pieces of paper and not being able to consider what they mean for company profits and growth. Women-owned firms, with younger and older owners, are as likely to generate more jobs as men-owned firms. Use of more specialized digital technologies to facilitate external-to-the-firm transactions, namely using mobile money to pay suppliers and receive payments from customers, is also a statistically significant conditional correlate of productivity and sales. Higher average wages are not facilitated by using a smartphone nor by internal-to-the-firm or most external-to-the-firm more specialized uses of digital technologies when controlling for other drivers of labor market outcomes. Rather, the urban location of businesses and the transformational quality of entrepreneurs (whether they select themselves as entrepreneurs due to the profit-making opportunity that owning a business provides as opposed to a necessity or subsistence choice to supplement earnings or because there is no preferred wage job available) are the main variables associated with higher wages. And firms using more specialized digital technologies tend to exhibit higher profits per owner: the businesses that have adopted and used these specialized digital technologies have higher incomes per owner than businesses that generically use a smartphone, with differences ranging between 3.7 times for use of inventory control/POS software to 2.9 times for use of online banking. The largest statistically significant conditional correlate of profits per owner, controlling for other labor market drivers, is again inventory control/POS software—as it facilitates business planning and management. The other statistically significant (at least at the 5 percent level) correlates of profits per owner are two digital technologies that facilitate external-to-the-firm transactions, namely using mobile money to pay suppliers and receive payments from customers.

Skill-biased technological innovations have been shown to favor more educated workers and displace less educated ones, especially in more developed economies. However, the evidence for Sub-Saharan Africa so far has documented that digital technologies (for example, the internet) are associated with an expansion of jobs—with no clear displacement, on aggregate, of unskilled labor (Hjort and Paulsen 2019; Cusolito and Patiño Peña 2020).

⁵⁹ Micro informal firms using smartphones and more specialized digital technologies in all cases are associated with average and median wages above the monthly extreme poverty line; in contrast, the median business of all firms that do not use the available digital technologies—except those using the internet for better understanding customers, interacting with the government, and using accounting software—are only able to pay an average wage that is below the extreme poverty line. The average and median profits per owner across all micro informal firms are above the moderate and extreme poverty lines; entrepreneurial firms generate sufficient profits on average to support the well-being of their owners.

Digital Technologies Have Significant Positive Effects on Household Welfare

Until recently, most studies have focused almost exclusively on the welfare effects for households and workers of the use of phones and 2G technologies. Recent research has shifted toward assessing the household and individual welfare effects of broadband internet (fixed broadband and 3G), particularly among the poor. A recent study of multiple countries in Africa shows that the expansion of fixed broadband internet has enabled more rapid job creation and overall economic activity (Hjort and Poulsen 2019).

Mobile broadband coverage is shown to be welfare enhancing among Nigerian households, as captured by its positive effect on consumption and poverty reduction—especially for poorer rural households (Bahia et al. 2020).⁶⁰ Total consumption grows by 6 percent in households with at least one year of mobile broadband coverage. After two and three years of coverage, the positive consumption effect increases (at a decreasing rate over time). Access to and use of internet-enabled mobile networks reduce the proportion of households living in extreme poverty by 4.3 percentage points after a year of coverage, and by 6.9 percentage points after at least two years of coverage. The household welfare effects from internet access are progressive: the increase in total (and particularly food) consumption is larger for poorer rural households. The findings from Bahia et al. (2020) suggest that gains from access to mobile broadband networks are not circumscribed to households participating in modern sectors of the economy; they can also be accrued by poorer, rural households, potentially including subsistence agricultural workers.

Another recent study for Senegal, a country that has experienced a rapid expansion in fixed and mobile broadband internet infrastructure over the past decade, shows that 3G coverage is associated with a 14 percent increase in total consumption (Masaki, Granguillhome-Ochoa, and Rodríguez-Castelan 2020). These effects are larger among households in urban areas, male-headed households, and younger cohorts.⁶¹ The magnitude of the recent results for Nigeria and Senegal can be compared with results in other developing countries, such as Peru and the Philippines. In the case of Peru, rapid mobile phone expansion between 2004 and 2009 was found to increase household consumption by 11 percent and reduce poverty by 8 percentage points (Beuermann et al. 2012). In the Philippines, the introduction of new phone towers in rural areas between 2016 and 2018 led to increases in household income and expenditure of 17 and 10 percent, respectively.

The main mechanisms at play that explain these positive effects of internet access, particularly for those at the bottom of the welfare distribution, are better labor market outcomes, higher agricultural production and productivity, and access to mobile money. In the case of Nigeria, the welfare effects of the internet are driven, at least partly, by greater participation in the labor force and employment, particularly among women. There is also evidence that internet coverage in rural areas in Nigeria is associated with higher agricultural productivity, higher traded volumes of agricultural products, and better use of inputs such as fertilizer and equipment (Masaki, Raja, and Rodríguez-Castelán 2020). These results are linked to plot managers who are younger than age 50 years.⁶² In the case of Kenya, better access to mobile money services linked to the

60 The authors gathered data from longitudinal household living standards measurement surveys (three waves of the General Household Survey) and the deployment of mobile broadband coverage (only mobile broadband-capable 3G or 4G networks) over 2010–16.

61 Box 3.4 presents more detailed results of this study.

62 Porto (2020) finds significant welfare effects of digital technology adoption for farmers in Senegal and nonfarm workers in Kenya. He finds that the welfare-enhancing effects of digital technologies are transmitted through several channels. Digital technologies can reduce input prices and consumer prices, as well as provide better production prices. Reduced transaction costs and information asymmetries may explain these impacts. Digital technologies can also enhance welfare by boosting productivity (thanks to the use of better inputs and best practices as well as the adoption of technologies, innovation, and extension services).

rapid roll-out of M-PESA is shown to have increased household consumption and savings and, thus, reduced poverty rates (Suri and Jack 2017). This study finds that poverty rates declined by 2 percentage points as a result (196,000 households moved out of extreme poverty), and reductions were larger among female-headed households. They also find significant changes in occupation choice, largely among women who moved away from agriculture as their main occupation to business and retail. As a result of M-PESA, 186,000 women made this transition. Similarly, in Tanzania, training sessions for women-owned micro-firms on M-Pawa, a mobile savings account linked to M-Pesa, have helped women save almost four times more, and they were 16 percent more likely to obtain a loan than a comparison group.

As the Africa continent plunges into the digital age, understanding the potential welfare gains households can experience from harnessing digital technologies becomes an important consideration that African governments must take into account. This box focuses on the welfare effects of internet adoption on households.^a As Senegal gains headway in West Africa as a tech hub, it has significant potential to boost its labor market productivity, wage employment, and agricultural production by increasing internet access in the country. Achieving its 2025 target of 50 percent broadband penetration can have immense effects for different socioeconomic groups. Therefore, understanding how these effects will manifest and how to best achieve this goal is crucial.

BOX 3.4: Digital Technologies and Household Welfare: The Case of Senegal

Welfare Effects of Digital Adoption

Before examining the welfare effects of digital technologies, it is key to understand the channels of transmission through which digital technologies enhance household welfare and, to an extent, the drivers of adoption and use of digital technologies. One of the important channels through which mobile internet adoption affects household welfare is the labor market.^b Mobile broadband internet (3G coverage) is found to be positively correlated with salaried employment (Masaki, Granguillhome-Ochoa, and Rodríguez-Castelán 2020). Internet adoption also has positive effects on crop prices, agricultural production and productivity, and wage employment in rural areas (Goyal 2010; Kaila and Tarp 2019; Masaki, Raja, and Rodríguez-Castelán 2020). Another channel of transmission is e-commerce, which has implications for the expansion of mobile money accounts. In turn, the expansion of digital financial services can increase their delivery and affordability. This contribution leads to welfare gains for households, as it facilitates their access to markets and wider information sets, as consumers and producers.

Once adopted, mobile internet broadband coverage has positive effects on total household consumption and lowers poverty rates in Senegal. 3G coverage is associated with a 14 percent increase in total household consumption and a 10 percent decline in extreme poverty (Masaki, Granguillhome-Ochoa, and Rodriguez-Castelan 2020). The effects are larger in urban areas. Figure B3.4.1 summarizes the impacts of an expansion of 3G coverage on household consumption and poverty in Senegal.

Welfare Effects of Internet Adoption Are Different across Groups

Digital technologies have positive effects on welfare in Senegal, although these benefits are not shared equally across groups—thus creating a digital divide. Empirical evidence typically points to education, gender, digital literacy, and age as key determinants of adopting digital

BOX 3.4
Continued

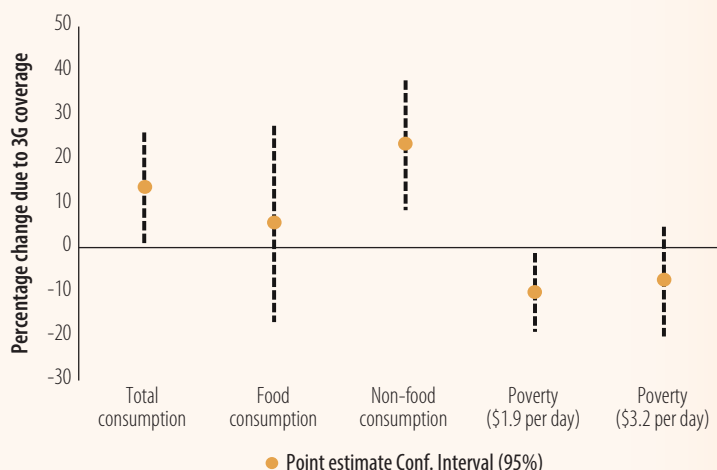
technologies. Purchasing power can also play a crucial role in determining mobile internet adoption. Not only do socioeconomic and demographic characteristics determine adoption of digital technologies, they also affect the magnitude of the welfare impact of digital technologies. This creates heterogeneous effects with varying magnitudes across different groups, including by gender and urban-rural households.

The main drivers of mobile internet adoption in Senegal are household welfare (measured by consumption per capita), gender, age, tertiary education, language, and employment status (Rodríguez-Castelán et al. 2020c). There is also evidence that adoption may be subject to strong network effects: an individual's likelihood of adoption is highly correlated with the number of friends who use messaging apps such as WhatsApp, Viber, or BBM (Atiyas and Dođanođlu 2020). The relationship between digital technology adoption and welfare effects, measured by household consumption, runs in both directions. While digital technology adoption has a positive impact on total household consumption, total household consumption also has an effect on digital technology adoption. Internet adoption has increased the gender divide. In urban Dakar, which has attained universal 3G coverage, women are less likely than men to spend money on mobile services. This highlights the need for gender-specific approaches in promoting digital technology adoption. The results showcase that despite the significant improvements in coverage in Senegal since 2016, gaps remain and the adoption of mobile data services and utilization of digital technologies still differs between individuals. Thus, internet access and adoption do not directly translate into usage.

Policy Implications

The above findings stress the importance of competition and lower prices in the information and communications technology (ICT) sector in driving digital technology adoption. Competition in the ICT industry can play an important role in encouraging new consumers who were previously priced out of the market. The results of a simulation exercise for Senegal show that increasing competition in the mobile internet market (from three to seven providers) would reduce prices by over 30 percent, which would in turn increase new market entrants as well as the purchasing power of existing customers, leading to gains in household welfare (Rodríguez-Castelán et al. 2020b). A similar study for Ethiopia shows that reducing the market share to 45 percent of the incumbent monopoly in mobile services (the state-owned enterprise Ethio Telecom) would likely reduce poverty by 0.31 percentage points (from 24.21 to 23.90 percent).

FIGURE B3.4.1: Impact of 3G Coverage on Consumption and Poverty in Senegal



Source: Masaki, Granguillhome-Ochoa, and Rodríguez-Castelán 2020.
Note: Point estimates at 5 percent confidence intervals. The estimates are from ordinary least squares across consumption types, with standard errors clustered by enumeration area and including household-level controls, demographic controls, and spatial controls.

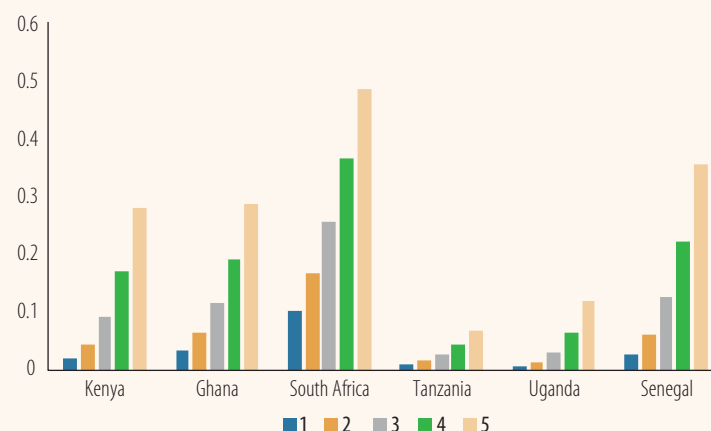
The study also finds that about one-third of the likely poverty reduction effect would be due to the impact on new users who were previously priced out of the market (Rodriguez-Castelan et al. 2020a). To realize the full welfare gains from adopting digital technologies, a competitive market structure is required, as it promotes efficiency, affordability, and increased quality of service. Given the potential gains from heightened competition, government policies should be aimed at increasing competition among mobile network operators—as outlined in Senegal’s current implementation of the infrastructure sharing policy.^c

Government policies, particularly those that promote social assistance, alleviate the budget constraint for lower-income households and thereby can help remove the financial barriers to adopting digital technologies. Another important area would be for policy to attempt to bridge the quality gap between urban-rural adoption with the promotion of local linguistic content. The Afrobarometer survey in 2018 reported that 46 percent of Senegalese considered Wolof as their first language. If the preferred language is not available online, it then becomes a barrier to internet adoption especially in rural areas and excludes non-French-speaking segments of the population. Evidence suggests

that individuals who can read and write in French are 12 percentage points more likely to access the internet through their mobile phones (Rodriguez-Castelan et al. 2020c). Analogous to the gender gap, this creates a target for policy in addressing vulnerable groups and cognitive requirements that promote adoption and usage. Another important policy consideration relates to the synergies between electricity access and internet adoption. Households’ access to

electricity is an important driver of internet adoption. Therefore, policies increasing the availability of affordable internet need to include improving the availability of electricity. Finally, evidence on the importance of network effects suggests that requiring providers to offer low-cost, entry-level “friends & family” type plans that would not be of interest to existing higher-paying customers may help encourage adoption. Digital social networks are an important driver of household uptake: an increase from one to five in the number of friends who use messaging apps is associated with a rise in the adoption probability for households from 1.6 to 29 percent in Ghana, 2.7 to 36 percent in Senegal, and 5.7 to 49 percent in South Africa (figure B3.4.2).

FIGURE B3.4.2: Effect of the Number of Friends Who Use Messaging on the Probability of Adopting Mobile Broadband



Source: Atiyas and Doganoglu 2020.

a. Welfare is approximated by total household consumption or consumption per capita. See, for example Masaki, Ochoa, and Rodriguez-Castelan (2020); Rodriguez-Castelan, Ochoa, Lach and Masaki (2020); and Rodriguez-Castelan, Lach, Masaki and Ochoa (2020).

b. Extending digital infrastructure and internet access may lead to more jobs created outside of the ICT sector through lower search times and decreased transaction costs for people finding jobs (World Bank 2016).

c. However, the Senegalese telecommunications market has been predominantly dominated by Orange group and has often been categorized as having low competition with higher prices. Based on the ITU (2019), Senegal ranked 164th of 182 most expensive countries for its high-consumption mobile-data-and-voice price basket. Mobile telecommunications bundles made up 25.3 percent of its gross national income per capita.

High-Speed Internet and Entrepreneurship

As the lines are blurred between households and micro-entrepreneurship in Africa, broadening household access to high-speed internet not only bolsters entrepreneurship, but also has stronger economic inclusion effects in the region (provided the productivity of entrepreneurs increases). Access to the internet can foster innovation through a series of channels: reduced information and search costs, lower production costs (say, through digitization), expanded business networks, and greater access to markets regardless of their geographical distance. Access to the internet can also bolster entrepreneurship. For instance, the use of digital technologies can alleviate or remove market entry costs faced by micro, small, and medium-size enterprises. These entrepreneurs can sell their products online rather than selling directly in neighboring local markets. In this context, entrepreneurs need to have a fast and reliable connection to reap the potential gains from internet access. Recent research assesses the causal impact of high-speed internet on entrepreneurship and innovation in Africa (Houngbonon, Mensah, and Traore 2020).⁶³ Specifically, it evaluates the effects of internet access on process and product innovation among firms and across sectors of economic activity. It also investigates whether (aggregate and sectoral) entrepreneurship rates are enhanced by having access to fast internet and the role of complementary analogs, such as access to reliable provision of electric energy.

The evidence shows that access to high-speed internet has a positive and significant impact on process innovation but not on product innovation among African firms. The likelihood of internet-adopting firms undertaking process innovation increases by 8.6 percentage points, and this effect is primarily driven by internet-related process innovation activities (for example, online sales and marketing, among others). Access to high-speed internet is also found to promote entrepreneurship in Africa. Once high-speed internet arrives to the community, the likelihood of an African household setting up and operating a nonfarm business is 4.7 percentage points higher. Compared with the mean, this impact can be translated to a nearly 12 percent increase in the entrepreneurship rate. The increase in entrepreneurship is primarily driven by households setting up firms in the service sector rather than in manufacturing and agribusiness. This finding might be attributed to the relatively low costs of setting up and operating service-related firms. Finally, the impact of high-speed internet on innovation and entrepreneurship is strengthened by the adequate provision of analog complements—particularly the provision of reliable and affordable electricity (Houngbonon, Mensah, and Traore 2020).

Universal access to mobile broadband in Africa. As argued above, the sizable welfare effects—which operate through productivity gains, job creation, and higher incomes—may incentivize policy makers in the region to pursue policies to achieve universal internet access in Africa. Yet, the infrastructure network of the digital economy is lagging across Sub-Saharan African countries—whether it is internet provision via fixed broadband technologies, cellular technologies, or satellite communications. For instance, the (median) 3G mobile network coverage of the region in 2020 is about 77 percent of the population (which is below the 93 percent in other developing countries), while the (median) 4G mobile network covers 55 percent

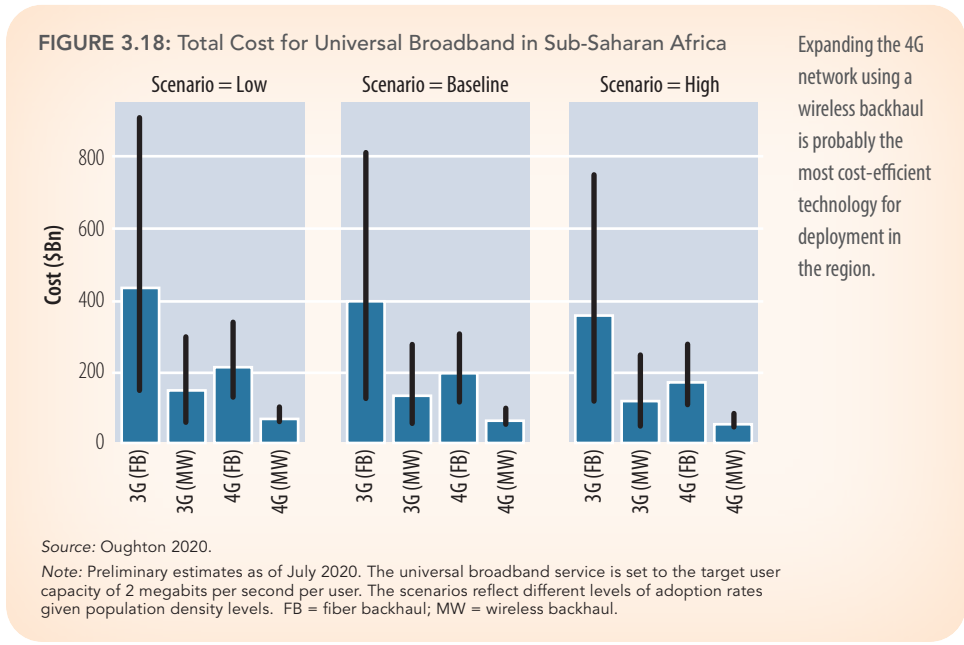
⁶³ Two sources of exogenous variation are used to address causality: (1) the staggered arrival of submarine fiber optic internet cables in Africa over 2009–14, and (2) the ensuing rollout of the terrestrial fiber internet backbone network across the continent. The spatial data on the deployment of high-speed internet are matched with georeferenced data on households and firms in African countries.

(as opposed to 81 percent in other developing countries). Thus, 4G mobile networks in Sub-Saharan Africa cover less than half of the population in 17 countries.

How much would it cost to provide universal broadband service in the region? According to the Broadband Commission, meeting the 2030 target of affordable universal access in Africa would require US\$100 billion to cover capital investment, network operation and maintenance, digital skills and content, and policy and regulation.⁶⁴ Moreover, recent research has estimated the cost of universal broadband provision using a combination of different technological solutions—say, cellular technologies (3G, 4G, or 5G) in areas that are not covered by existing internet connectivity (fiber optic cables or microwave for backhaul connections) or satellite communications in areas where the cost of deploying the underlying infrastructure is prohibitive (Oughton 2020).⁶⁵

Estimates of the median cost per user for universal broadband in Sub-Saharan Africa show that, first, it is more expensive to expand broadband coverage in areas with lower population density. This might be attributed to low initial investments in digital assets, high fixed costs (tower and equipment) per user, and long distance for backhaul connections. Second, the deployment of 4G technology is cheaper than 3G due to the higher spectral efficiency (that is, greater data transmission over the same spectrum capacity). The cost savings are sizable, especially in rural and remote locations. Expanding the 4G network using a wireless backhaul is probably the most cost-efficient technology for deployment in the region (Oughton 2020). Preliminary baseline estimates of the total cost of providing universal broadband across countries in the Africa region (set to a universal broadband service of 2 Mbps per user) suggest that the mean costs fluctuate from nearly US\$400 billion for 3G with fiber backhaul, down to US\$75 billion for 4G with wireless backhaul (figure 3.18).

Finally, the estimated gross investment needs to achieve universal broadband in Sub-Saharan Africa, by subnational region, show that less populated areas (that is, rural and remote locations) are typically characterized by smaller costs per square kilometer but with an extensive area that needs to be covered. Economies of scale are considerably diminished when compared with more densely populated areas. This implies that investment needs are larger in locations clustered in the



64 Broadband Commission for Sustainable Development (2019).

65 The author models the cost of six different strategies to expand 3G and 4G mobile networks in three East African countries (Kenya, Tanzania, and Uganda) and three West African countries (Côte d'Ivoire, Mali, and Senegal). These estimates are then projected to other areas based on population density—as this factor predominantly affects broadband viability. For more details on the different scenarios of adoption and the infrastructure strategies used to estimate the cost scenarios, see Oughton (2020).

Saharan region (for example, subnational areas in Mali, Niger, Chad, and Sudan) and Central Africa (including the Democratic Republic of Congo), among others (Oughton 2020).

*Policy Implications*⁶⁶

Mobile markets are developing fast in Sub-Saharan Africa and large investments have been undertaken in international connectivity, national backbones, and access networks. Digital technologies are also spreading rapidly. However, the adoption of digital technologies by households, firms, and governments in the region still lags that of other regions in the world; and there are large digital divides by urban-rural, gender, and size of enterprises differences. Further uptake of digital technologies is hindered by limited affordable and quality internet connectivity as well as a lack of widespread availability of adequate digital services to pull demand for digital technologies, coupled with low levels of digital literacy. Therefore, policies are needed across various areas: digital infrastructure for connectivity, digital business models and digital financial services to provide appropriate digital services across economic sectors, public digital platforms and e-government services to create an enabling environment for business and pull demand for digital technologies,⁶⁷ and digital skills and capacity to address digital literacy gaps.⁶⁸

More effective regulation is needed to expand digital infrastructure and make connectivity affordable, reliable, and universal. This entails using regulatory instruments and government interventions to eliminate barriers to entry (such as restrictive licensing and exclusivity rights) and promote competition on a level playing field (such as asymmetric regulation of dominant operators, infrastructure sharing, spectrum policy, and antitrust enforcement). Governments can also implement programs targeted at providing universal access through a combination of various instruments, including universal service funds to partner with the private sector, supply or demand subsidies, and public investments. Government subsidies and other incentives for broadband and mobile providers should be granted to all providers on equal terms without preferential treatment for state-owned enterprises. At the same time, regulatory frameworks in Sub-Saharan Africa should minimize undue regulatory burden on the sector, such as command and control rules that are not capable of accounting for the complexity of regulation and lack of adequate implementation or enforcement. Figure 3.19 provides a roadmap for universal access that highlights the roles of the public and private sectors. In general, in the digital sector, regulatory frameworks also need to shift toward a paradigm of fast adoption of technological change and more competitive market dynamics under an agile regulation approach. Hence, there is a need to address the persistence of dominant positions and onerous barriers to market entry, complex and burdensome tax and parafiscal fees schemes, and gaps in regional harmonization.

The COVID-19 pandemic has brought to the fore not only the vital importance of the digital economy in the lives and livelihoods of the different actors in society, but also having adequate rules and policies regulating the digital sector. In this context, there is an important agenda that needs to address issues such as: (1) universal affordable access to high-quality communications services as a common good, (2) support for critical functions (for example, hospital emergency

⁶⁶ This section draws heavily from the World Bank (2020h, 2020j)

⁶⁷ Design of apps tailored to Africans' needs should be encouraged to make digital adoption more attractive and accelerate the positive impact of digitization on productivity. Power and data-efficient apps that deliver real value for customers are critical. They can be instrumental in supporting areas such as education (Eco-Warriors and Mwabu), health (Vula, 54gene and Appy Saúde), and agriculture (GeoFarmer, Nuru and Promagric).

⁶⁸ These are the core pillars of the Digital Economy for Africa (DE4A) initiative. For more information, see <https://www.worldbank.org/en/programs/all-africa-digital-transformation>.

services and e-administration), (3) public warning systems, (4) effective privacy (personal data protection), and (5) high network resilience (cybersecurity and data protection). To face the challenges in the COVID-19 and post-COVID-19 era, countries need regulatory frameworks and practices that foster the emergence of competitive digital infrastructure markets, promote innovation, adapt swiftly to changes in the demand for electronic communications services, and pursue affordable universal access to high-quality services. Regulatory frameworks must be flexible to address competition and investment in markets shifting from voice to data, close the digital divide, protect personal data, and guarantee cybersecurity.⁶⁹

Digitalization creates risks for industries, governments, and citizens that require government

FIGURE 3.19: Roadmap for Universal Access to Affordable and Good Quality Broadband in Africa

- | | |
|--|--|
| <ol style="list-style-type: none"> 1 Ensure that the commercial broadband market is open and structurally prepared for competitive private investment 2 Reduce non-economic cost and risks of market entry and investment 3 Provide public/donor funding support for large, high-cost infrastructure investments to reduce risk and increase commercial viability 4 Expand the market through government procurement and implementation of broadband base digital services, networks, and facilities | <ol style="list-style-type: none"> 5 Provide direct funding support for extending affordable broadband access to commercially challenging rural and remote areas, to women, and low-income users under a Mobilizing Finance for Development approach 6 Increase ICT market commercial attractiveness through demand stimulation and affordability initiatives 7 Promote long-term sustainability by ensuring that appropriate technical skills to operate and maintain digital infrastructure are increasingly available on the continent |
|--|--|

Regulatory frameworks need to shift toward a paradigm of fast adoption of technological change and more competitive markets.

Source: Broadband Commission 2019.

policies to safeguard the integrity and security of digital data and ensure that the competitive process leads to better deals for consumers and users of services offered by digital business models (platforms and data-driven businesses). The vulnerabilities of digital communications to cybersecurity threats are becoming more important, given the increased use of digital solutions, but there are various legal, enforcement, and capacity challenges for effective cybersecurity policies in Africa.⁷⁰ Digital data regulations are nascent in Africa, with few countries having updated data protection frameworks and functional data protection authorities. Consumer protection frameworks, although in force across most African countries, are not always prepared to address issues related to online purchases of goods and services. Furthermore, small suppliers to digital platforms have few instruments for legal recourse. Although more than 30 countries and regions in Africa have competition authorities in operation, few cases involving digital markets have been handled, and in many cases legal frameworks need to be updated to allow for effective implementation in a digital economy.⁷¹ Digital IDs could facilitate citizens' use of digital government services and access to digital products, such as credit and insurance, but only 40 percent of African citizens have an ID, limiting the usage of integrated public platforms to

69 The World Bank's Regulatory Watch Initiative identifies the regulatory actions that can yield more competitive markets for electronic communications (World Bank 2020k): (1) establishing openness in licensing regimes (for example, competitive bidding of licenses and transparency in market information), (2) easing access to bandwidth (for example, competition for international capacity, wholesale price regulation, and open access rules for national connectivity), (3) removing taxes and price floors on incoming international traffic, and (4) avoiding "anti-over-the-top" (OTT) measures (for example, blocking access to OTTs and imposing taxes on social media, among others).

70 <https://www.itu.int/en/ITU-D/Cybersecurity/Pages/global-cybersecurity-index.aspx>.

71 See World Bank Group (2016, 2020f).

provide social services and deliver social protection measures (for example, cash transfers), such as the ones demanded by the COVID-19 crisis.

To facilitate resilient recovery in the medium term, deeper reforms are needed to boost the sector's performance in terms of access and affordability. Governments should focus efforts on achieving universal, affordable, and good quality broadband access by mobilizing private sector financing under a competitive environment and designing appropriate programs and rules to foster inclusive connectivity. Although most African countries have telecommunications regulators and relatively modern telecommunications frameworks,⁷² challenges persist to rules and effective enforcement in the following areas: regulating operators with significant market power, entering certain markets such as international gateways or facility-based internet services, granting access to public resources such as spectrum and rights of way, sharing infrastructure within the telecom sector and with other sectors, ensuring competitive neutrality in the treatment of state-owned enterprises and operators with state participation, having an effective universal service policy, and applying a balanced framework for taxation and parafiscal fees.

Public investments and mechanisms to incentivize digital technology adoption and the development of tailored digital solutions are needed to foster the digitalization of industries and government systems. Countries such as Senegal are designing frameworks to support digital startups, while other countries are interested in developing frameworks to facilitate the development of digital solutions and digitalization of government functions and industries, including SMEs. Worldwide, COVID-19 stimulus packages are targeting the digital economy. Countries have included digital and data infrastructure and technology innovation as centerpieces of national COVID-19 stimulus packages (for example, the European Union, the Republic of Korea, and China), while recovery plans have also covered increasing support for digitalizing SMEs and investing in innovation and research to build a digital-driven ecosystem (for example, Singapore, the European Union, Israel, Malaysia, Spain, Lithuania, and India).⁷³ African countries could benefit from designing specific programs and undertaking public investments to support the digital ecosystem while providing incentives for firms to innovate and build on international know-how and capital.

In addition to public investments and state support, effective regulatory frameworks that incorporate an agile approach are needed to regulate new digital business models, and enabling rules on cybersecurity, data governance, consumer protection, and competition policy are necessary to create trust for greater use of digital solutions.

⁷² According to the 2018 ITU regulatory index, around 85 percent of the countries in Sub-Saharan Africa include in their laws or regulations at least one provision on one of the following areas: regulation of significant market power, spectrum trading and neutrality, and infrastructure sharing. Preliminary analysis shows that these areas of policy are related to higher mobile penetration after controlling for other factors, such as market concentration, GDP per capita, and age of the regulator (Aviomoh et al. 2020).

⁷³ See Begazo and Tang (2020).

3.3 URBANIZATION AND SPATIAL INTEGRATION⁷⁴

Across the globe, well-functioning cities do one thing really well—they bring people and businesses together. Social and economic interactions are the hallmark of city life, making people more productive and often creating a vibrant market for innovations by entrepreneurs and investors. No country in the industrial age has ever achieved significant economic growth without well-managed urbanization (World Bank 2008).

Successful urbanization benefits the rural population as much as those who move to towns. Rural living standards are able to rise as people move to towns because each remaining person has more resources to work with, remittances from urban to rural areas increase, and higher urban demand for food raises rural earning power.

The COVID-19 pandemic is putting the brakes on urban economies and highlighting social and spatial disparities within cities like never before. An outsized burden of the pandemic on lives and livelihoods has been borne by the urban poor. Several factors put the urban poor, especially those living in slums, at high risk for contracting infectious diseases such as COVID-19 (Baker, Cira and Lall 2020). These risks are particularly linked to: (1) overcrowded living conditions (both within slums and within households); (2) limited access to basic services, particularly water, sanitation and health services; (3) reliance on crowded transport services; and (4) specific aspects of working in the informal sector (often in crowded places, with no social protection to fall back on).

Contagion risk is challenging in (Sub-Saharan) Africa where over 60 percent of the region's urban population lives in slums. Risk is exacerbated by cramped living conditions and inadequate public services, especially water and sanitation. In Dar es Salaam, 28 percent of the residents live at least three to a room; 50 percent of Abidjan is overcrowded. Residents lack open space and suffer from inadequate infrastructure, sharing taps and latrines, often with 200 people per communal facility. In South Africa, only 44 percent of the people have access to water inside their house and only 61 percent have access to a flush toilet (Lall, Henderson and Venables 2017).

Recent analytical work conducted at the World Bank shows that the COVID-19 virus has spread the fastest in urban zones where people lack access to indoor floor space, sound infrastructure, and the capacity to spend time safely outdoors distanced from others (Lall and Wahba 2020). A major concern is a city's economic geography: the interplay between its economic and physical setting. Unfortunately, many of Africa's cities share two characteristics that constrain their economic geography: they are crowded and disconnected, not economically dense and connected.

One of the most striking features is that Africa is urbanizing in people, but not in capital. Cities are experiencing rapid population growth, yet their economic growth has not kept pace. Here, Africa's cities are *crowded* because they lack formal, planned housing that is connected to jobs and services. A major part of the challenge is that Africa is urbanizing at lower incomes levels—it is strikingly poorer than other developing regions with similar urbanization levels. In 1994, when countries in the East Asia and Pacific region surpassed the same threshold, their per capita GDP was \$3,600. By contrast, Africa, with 40 percent urbanization, today has a per capita GDP of just \$1,000. Housing

⁷⁴ This section was prepared by Somik V. Lall and Aparajita Goyal.

investment in Africa has also lagged behind that in other low- and middle-income economies. Between 2001 and 2011, African low income countries invested 4.9 percent of GDP in housing, compared with 5.5 percent elsewhere; and African middle-income countries invested 6.5 percent of GDP in housing, compared with 9 percent elsewhere (Dasgupta, Lall, and Lozano-Gracia 2014).

Africa's cities are also growing under a patchwork of constraints — inefficient land markets, overlapping property-rights regimes, and suboptimal and ineffective zoning regulations — that hinder the drive toward dense concentrations for whatever structures that do exist. The resulting scattered disconnected neighborhoods lack planned transport and infrastructure connections (Lall, Henderson and Venables 2017). The constraints also make it challenging for city authorities to provide network services, such as water supply systems and sewers that rely on scale economies. Limited transport infrastructure further disconnects the cities.

Such features of *crowded and disconnected* cities increase contagion risk and vulnerability during the pandemic and have been increasing costs for households and businesses over several decades. African cities are 29 percent more expensive than cities in countries at similar income levels. The need for higher wages in the formal sector to pay higher living costs makes firms less productive and competitive, keeping them out of tradable sectors. As a result, African cities are avoided by potential regional and global investors and trading partners. The cities remain local in scope—dampening their competitive potential.

Policies and investments to manage the employment and economic shocks from COVID-19 in urban areas can be organized around (1) immediate interventions to manage COVID-19 risk, and (2) medium-term measures to tackle broader structural and institutional challenges that shape the visible symptoms.

Immediate interventions to manage COVID-19 economic risks. Labor-intensive public works are part of the short-term solutions for managing the employment impacts,⁷⁵ particularly when other options, such as wage subsidies and access to unemployment insurance are limited. Purely as a short-term safety net, public works in this case intend to provide cash incomes to self-selected participants in times of need and do not typically include other developmental roles such as skills development. The priorities would be to focus on activities that are labor intensive (e.g.) as well as modify the technologies and increase the labor intensities of selected construction activities. Considering the major infrastructure and service deficit in Africa's cities, particularly in informal settlements, these interventions would help in longer term development.

Medium-term priorities for effective spatial development, laying the foundations to reap economic benefits from urbanization. These priorities include strengthening rural urban linkages to support rural diversification; simplifying and clarifying transfers of property rights among land market participants (freeing these procedures from today's unclear, overlapping property-rights regimes); supporting the effective management of urban development through foresighted planning, realistic regulation, and predictable enforcement; and making infrastructure investments early and coordinating them with land market intentions and plans and regulations that guide physical structures. Their aim should be to achieve urban and spatial development *at scale* and *for scale*, while fostering economic specialization.

⁷⁵ See link: <https://www.jobsanddevelopment.org/where-theres-no-unemployment-insurance-the-public-works-response-to-livelihood-shocks/>

Boosting Agricultural Productivity and Food Security

An important part of Africa's urbanization challenge has been the lack of opportunities in the countryside. With no accumulated savings to make significant investments in housing, the default option has been to build shacks in urban centers. Consequently, 60 percent of the region's urban population lives in slums. With Africa's urban population likely to double over the next 25 years, there is an urgent need to make cities livable and productive. Important preconditions for successful urbanization are boosting agricultural productivity and improving living conditions in rural areas, with food security especially in the aftermath of the pandemic becoming critical.

The pandemic arrived when the number of acutely food-insecure people in the world was already rising over the past four years, largely due to conflict, climate change, and economic downturn. Through the supply and demand shocks of the pandemic and compounding existing vulnerabilities, COVID-19 continues to have a profound impact on the number of people facing acute food insecurity. Domestic disruptions in supply chains were the dominant factor affecting food security as countries went into lockdowns due to the spread of COVID-19. Mitigation measures put food security at risk through increased prices, high transportation costs, and loss of income, as is analyzed in volume 21 of *Africa's Pulse*. Since then, many countries have acted to remove the obstacles and keep food moving. The situation appears to be improving in many places in Sub-Saharan Africa, but some issues continue to linger. The focus on increasing productivity remains centerstage, and the role of digital technologies in helping countries and food systems build back better after the pandemic has become even more important.⁷⁶

The stark contrast between food surpluses rotting on farms and food shortages in retail markets throughout the lockdowns highlights the high transaction costs and information asymmetries that are pervasive throughout the food system. Segmented markets and supply chains make it difficult and costly for buyers and sellers to find each other and transact. This becomes a problem in the face of a shock, like COVID-19, when traditional markets lack the agility to respond to the supply and demand mismatches. Digital platforms can offer producers and consumers more options and connections, improve efficiencies through cost reductions, and promote transparency throughout the food logistics system. During the pandemic, agri-tech start-ups have provided significant services to farmers and supply chains. More broadly, countries with better digital ecosystems had fewer disruptions in food systems and were more resilient (Kim et al. 2020). By accelerating the move to digital technologies, COVID-19 physical lockdown measures have created an unexpected opportunity to usher in change in the sector. Now is the time for all-hands-on-deck engagement to improve food systems and move toward a more sustainable future going forward.

Evidence from high-frequency phone surveys tracking the socioeconomic impacts of the pandemic in Malawi, Uganda, and Ethiopia, for instance, shows that food security remains a significant challenge during the pandemic, particularly for the countries' poorest. The agriculture sector has been affected by the pandemic in diverse ways. The sector seems to have grown, with families entering farming as a way to cope with the economic downturn. This change was particularly pronounced among households in the top 20 percent of the pre-pandemic per capita consumption distribution in Uganda. Additionally, 23 percent of farming households

⁷⁶ This section draws from Torero (2020).

noted that the pandemic has changed their crop cultivation decisions, by increasing land under cultivation and the diversity of crops planted. Farmers who sell their produce (44 percent), however, reported difficulties in their ability to sell produce in the markets (41 percent of all produce-selling households) in Uganda.

The desert locust infestation in Ethiopia continues to impose significant damage to crops, leading to a deterioration of the food security situation and a threat to livelihoods.⁷⁷ Additionally, heavy rains are causing ongoing flooding in several parts of Ethiopia, impacting nearly 600,000 people, with more than 220,000 people displaced to date. In Malawi, 88 percent of the businesses in urban areas in the service sector reported lower or no sales revenue, with a similarly widespread reported decrease in sales revenue in rural areas.

Although the global food price index remains stable, reflecting well supplied markets, food security risks persist at the local and national levels. For instance, Sudan has continued to register increasing food prices, with staple food prices five to six times above the five-year average. Lockdowns and social distancing measures impede countries' functioning of land governance systems, preventing people from registering land and settling disputes. In Ethiopia, for example, land registration and land dispute resolution ceased after the government declared a state of emergency on April 8. As of June 26, no active mediation or litigation services were addressing land conflicts in Ethiopia, and most grassroots organizations were not operating. The closure of public land and public administration services also undercuts people's access to information—especially in countries with non-digital land administration—which in turn undermines land transaction transparency and government accountability. Inclusiveness is an important element for building resilient food systems for the future.

There is a growing consensus that human, animal, and environmental health are indivisible conditions and that the pandemic presents an opportunity for governments to build back better toward such a holistic paradigm. Stressing the need for resilient value chains, policy makers should incentivize value chain investments that diversify the sources of risk. In response to the pandemic, most governments have prioritized the movement of food and agricultural products by exempting the sector from lockdown restrictions. Nevertheless, implementation shortcomings have restricted the smooth functioning of food supply chains in many places (Ethiopia, Ghana, the Democratic Republic of Congo, the Republic of Congo, Kenya, the Central African Republic, the Comoros, Liberia, Madagascar, and Guinea). Agricultural input markets (seed and fertilizers) have also been impacted, restricting access to critical inputs for planting the next crop (Ghana and Côte d'Ivoire) and imported inputs (Cameroon, Ethiopia, Kenya, Liberia, Malawi, Nigeria, Guinea, Uganda, Tanzania, Zambia, and Zimbabwe).

Food systems, which directly employ more than one billion people, are also at risk of losing jobs in food processing, services, and distribution, disproportionately affecting female workers. Food supply chains must keep moving. Health is a precondition for economic recovery, and food is a precondition for health. Building output and input supply chain resilience and urban and rural planning to improve local food production and distribution are critical elements for increasing long-term productivity as well.

⁷⁷ A catastrophic locust outbreak is projected to force 25 million people in Ethiopia, Kenya, Somalia, Uganda, and Sudan to go hungry. A swarm covering one square kilometer contains 80 million insects and consumes more food in 24 hours than 35,000 people.

Governments urgently need to use cash transfers and mobilize food banks. Parallel to this, they should increase food production, reduce food losses, and create employment. Public works projects throughout agri-food systems can provide people with livelihoods. It is important that the rural poor, especially women among them, benefit from this policy combination. It is equally critical that smallholder farmers and micro, small, and medium-size enterprises keep operating. In poorer countries, they play a crucial role in supplying food to poor consumers.

For Africa, intraregional trade is especially important, because the countries in the region can create demand to compensate the weak demand from Europe. African countries should develop food safety standards across the value chain and ramp up access to infrastructure. The first is vital, as it would reduce NTBs and prevent governments from imposing blanket import restrictions. COVID-19 has amplified the voices of anti-globalization. It is setting off calls for food self-sufficiency as well. This is understandable, but no country has all the natural resources to produce the food it needs in the variety it needs. Facilitating global trade, not promoting self-sufficiency, is key to boosting food security. The pandemic has also given us an opportunity to make investments that will lay the foundation to reset food systems and whose returns will accrue far into the future.

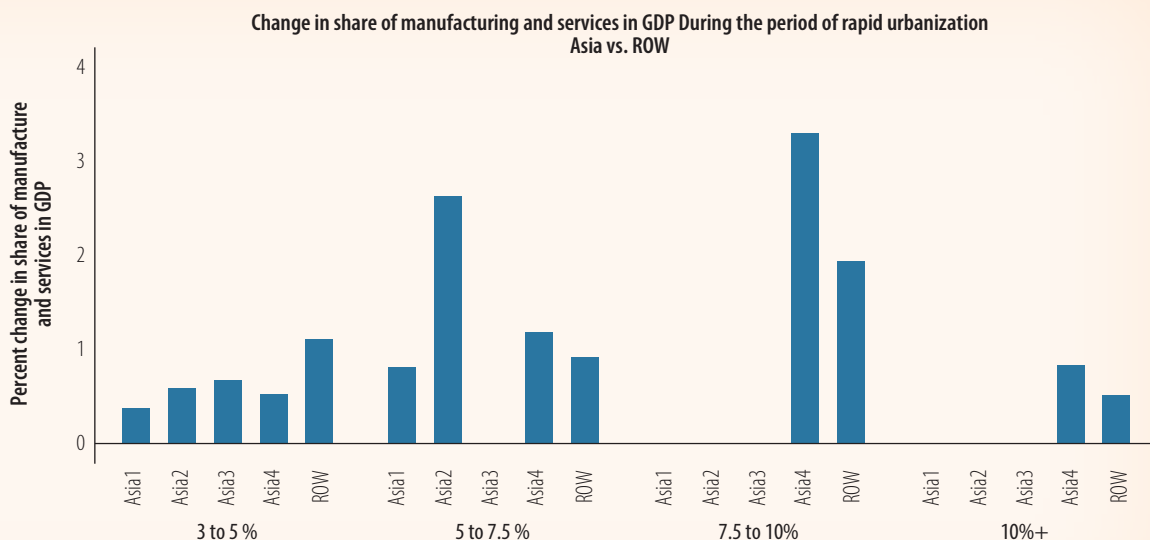
Africa's Sluggish Spatial Transformation

Sub-Saharan Africa's urban population doubled during the past 20 years, reaching 450 million in 2019. Despite its high urban growth, the region is experiencing low urbanization of people and sluggish spatial transformation of its economies. The share of the urban population rose from 31 percent in 2000 to 41 percent in 2019, but much of that population growth was a natural effect of fertility rather than an economic effect involving migration. Although rural-to-urban migration has occurred for decades, the rapid increase in Africa's urban population in recent years is largely attributed to natural growth; rural-to-urban migration is estimated to contribute less than 40 percent (Jedwab, Christiansen, and Gindelsy 2017).

Urbanization has traditionally been strongly correlated with the expansion of jobs and economic activity in the more productive industrial and service sectors —thus, boosting per capita income growth. Figure 3.20 shows the case for Asia's transformation. From Japan to the Asian Tigers, there was a clear strategy of concentrated economic development in urban concentrations. Economic activities located in these cities were as connected with the rest of the world as with their hinterlands, if not more. Following the success of the Tigers, in the 1980s the Cubs (Thailand, Indonesia and Malaysia) concentrated economic activity in the metropolitan cities of Bangkok, Jakarta and Kuala Lumpur. As in Japan, export-oriented economic activity concentrated in large urban areas; economic and spatial transformation went hand in hand. For most countries, manufacturing as a share of GDP rises with the urban share until about 60 percent of the population lives in cities and manufacturing accounts for about 15 percent of GDP (Lall, Henderson, and Venables 2017).

Urbanization in Asia has come along with an expansion of jobs and economic activity in more productive industrial and service sectors.

FIGURE 3.20: Urbanization and Economic Transformation Have Gone Hand in Hand in Asia



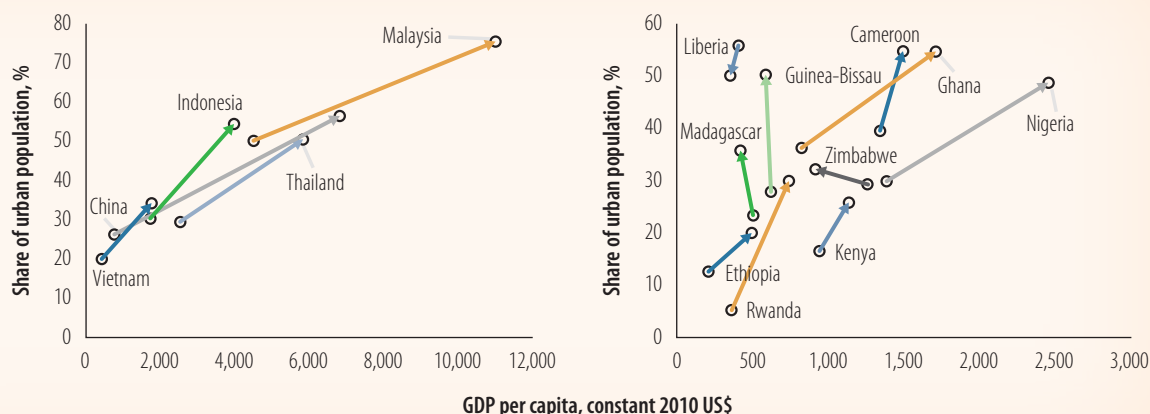
Source: Lall, Henderson, and Venables (2017).

Note: Asia 1 = the Republic of Korea Singapore (Tigers); Asia 2 = Indonesia (Cub); Asia 3 = China, India, and Vietnam (today's rapid urbanizers); Asia 4 = Afghanistan, Bangladesh, Bhutan, the Islamic Republic of Iran, Jordan, Maldives, Mongolia, Nepal, Pakistan, Papua New Guinea, the Philippines, Saudi Arabia, the Syrian Arab Republic, Thailand, and the United Arab Emirates.

Most Sub-Saharan African countries, however, have not seen large reallocation of economic activity away from the agriculture sector, contributing to urbanization without growth (figure 3.21). In general, most of Sub-Saharan Africa has not developed a manufacturing sector beyond the production of traditional goods for within-country consumption (Henderson and Turner 2020). A particularly striking feature of the region's spatial development is that urban incomes are significantly higher than rural incomes even in the absence of significant spatial economic transformation. Poverty is substantially lower in urban than in rural areas and, although poverty is falling in the region overall, it is declining fastest in large cities (Nakamura, Paliwal, and Yoshida 2018).

Urban incomes are higher than rural incomes in Sub-Saharan Africa even in the absence of significant spatial economic transformation.

FIGURE 3.21: Urbanization Has Been Associated with Uniform Growth in East Asia, but the Story Is a Mixed Bag for Sub-Saharan Africa



Source: Calculations based on World Development Indicators.

Note: The data correspond to changes between 1990 and 2016.

Higher urban incomes alongside weak structural transformation can largely be attributed to extremely low rural productivity and service provision rather than the economic benefits of urban density. Lall et al. (2017) show that compared with other developing cities, African cities produce few goods and services for trade on regional and international markets. Unlike nontradables, tradable goods and services face elastic global demand. They may also allow for agglomeration economies, which increase returns to employment (box 3.5). Rapidly growing cities require growth in employment—and the returns to expanding employment are highest in tradable sectors.

What is an urban agglomeration economy, and how does it arise from economic density?

A simple case is the reduction of transport costs for goods: when suppliers are close to their customers, shipping costs decline. In the late 19th century, 80 percent of Chicago's jobs were compactly located within four miles of State and Madison Streets—near residences and infrastructure (Grover and Lall 2019). And in the early 1900s, New York and London were manufacturing powerhouses because factories were built there to access customers and transport services. Many agglomeration benefits increase with scale: each doubling of city size increases productivity by 5 percent, and the elasticity of income with respect to city population is between 3 and 8 percent (Rosenthal and Strange 2004).

Productivity gains are closely linked to urbanization through their ties to structural transformation and industrialization. As countries urbanize, workers move from rural to urban areas in search of better paid and more productive jobs. Similarly, entrepreneurs locate their firms in cities where agglomeration economies will increase their productivity. Close spatial proximity has many benefits. Certain public goods—like infrastructure and basic services—are cheaper to provide when populations are large and densely packed together. Firms located near each other can share suppliers, lowering input costs. Thick labor markets reduce search costs, giving firms a larger pool of workers from which to choose. And spatial proximity makes it easier for workers to share information and learn from each other. International evidence shows that knowledge spillovers play a key role in boosting the productivity of successful cities.

Evidence from East Asia (China, the Republic of Korea, and Vietnam) points clearly to a close association between episodes of rapid urbanization and economic development. Unfortunately, these links appear weak in Sub-Saharan Africa. Cities in Africa are not delivering agglomeration economies or reaping urban productivity benefits; instead, they suffer from high costs for food, housing, and transport. These high costs—rising from coordination failures, poorly designed policies, weak property rights, and other factors that lower economic density—lock firms into producing nontradable goods and services.

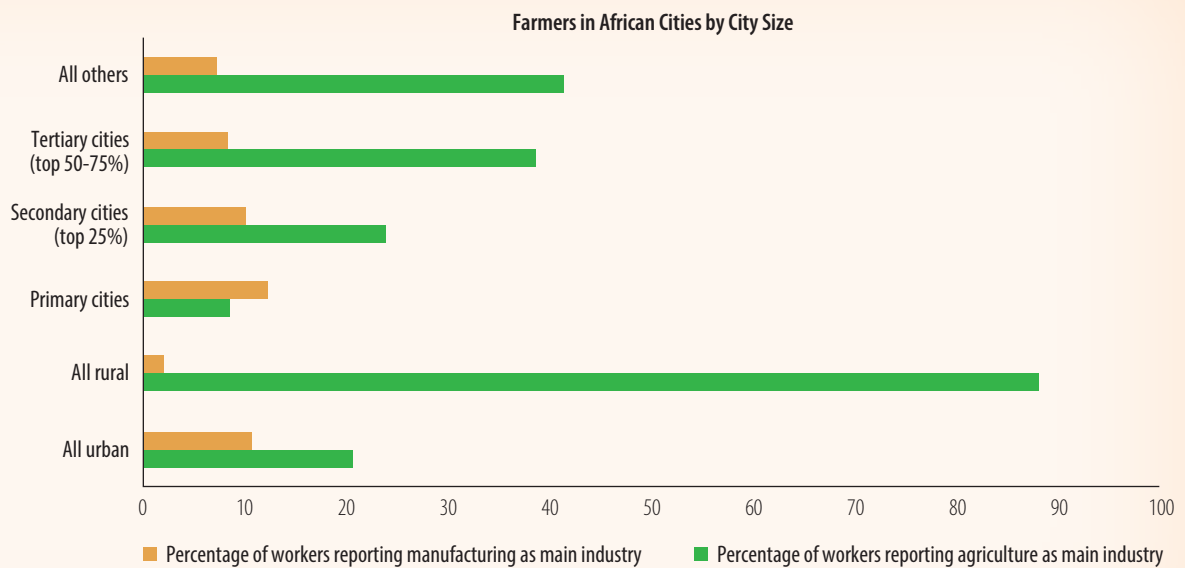
BOX 3.5: The Promise of Cities: Agglomeration Economies and Returns to Scale

Agricultural productivity in the region is low by global standards, reflecting low irrigation rates, low input usage, and limited upgrading to new seed technologies compared with other regions (Fuglie et al 2020; Goyal and Nash 2017; Ray et al. 2012). Cereal yields in Sub-Saharan Africa are half those in South Asia, which in turn are half those in high-income countries, and well below those in East Asia and Latin America. Similarly, Sub-Saharan Africa consistently lags behind other regions in agricultural TFP growth (Goyal and Nash 2017). Low rural productivity can help in explaining why urban incomes are comparatively so much higher than rural incomes in the region (Henderson, Kriticos, and Nigmatulina 2019). Access to services is also better in urban areas: moving from a rural area to an urban one is associated with a differential of improved access to water, sanitation, and electricity of about 45, 35, and 50 percent, respectively (Hommann and Lall 2019).

A puzzling feature of Sub-Saharan Africa’s spatial landscape is the nature of its jobs. Around 25 percent of the urban population in the region—and about 30 percent in Mozambique, Sierra Leone, and Tanzania—is still employed in agriculture as the main occupation. In contrast, in Brazil, India, and Malaysia, shares of urban farmers are all under 7.5 percent (Henderson and Kriticos 2017; Henderson and Turner 2020). In Sub-Saharan African countries this share has been rising rather than falling (Hommann and Lall 2019). Figure 3.22 shows that in these Sub-Saharan African countries, almost 90 percent of rural sector employment is in farming. This is far higher than what is seen in other countries, where rural services, construction, and even manufacturing employment are more important. Finally, it is important to consider the particularly small manufacturing share in smaller cities and towns.

Almost 90 percent of rural sector employment in Sub-Saharan Africa is in farming.

FIGURE 3.22: High Share of Urban Farmers in Sub-Saharan Africa



Source: Henderson and Kriticos 2018, figure 3 and supplemental figure 2.

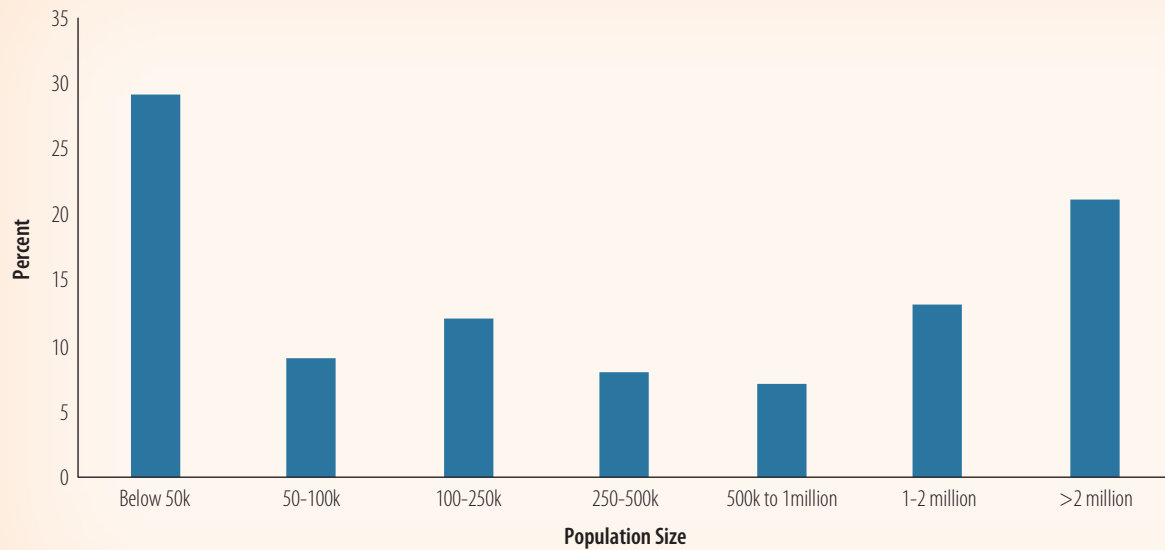
Note: Data from Integrated Public Use Microdata Series for the most recent census for Ethiopia, Tanzania, Mozambique, Ghana, Cameroon, Mali, Malawi, Zambia, Sierra Leone, Liberia, and Botswana. Small cities are in the bottom 50 percent of cities by size and tertiary cities are in the 50th-75th percentiles. Cities are defined by night-light boundaries to which population is assigned.

Need to Identify Nonfarm Job Opportunities in Small Towns

Residents of smaller towns are disproportionately employed in agriculture. Although the agricultural share of employment remains significant across all urban areas, it becomes even larger for the lower hierarchy of urban systems. It is likely that any manufacturing in these places is traditional food processing, non-metallic minerals, locally made furniture, weaving, and the like for local consumption (Henderson and Turner 2020). The economic scope of towns remains local.

Small towns are important in Africa’s urbanization narrative as they dominate the urban landscape. Smaller cities and towns with fewer than 250,000 people account for about half of the urban population (figure 3.23). Among this group, small towns with fewer than 50,000 people account for almost one-third. Their failure to diversify limits job creation and dampens livability across the spatial continuum.

FIGURE 3.23: Almost a Third of the Urban Population Lives in Towns with Fewer Than 50,000 People



Smaller cities and towns with fewer than 250,000 people account for about half of the urban population.

Source: Hommann and Lall 2019.

Note: Based on data for 39 countries in Sub-Saharan Africa for which censuses were available after 2004, excluding therefore Angola, the Central African Republic, the Comoros, Equatorial Guinea, Eritrea, Eswatini, Nigeria, and Somalia.

For small towns, a critical issue is to identify and support economic opportunities that offer employment to the growing population outside farming. Developing rural–urban linkages is part of a coherent strategy: towns could be places that bridge rural and urban economies. The obvious place to start is to consider existing agricultural value chains and how much value added could be stimulated to generate off-farm employment in agroprocessing or other agriculture-related activities (box 3.6). Less clear is why this approach has not happened at scale, given Africa’s agricultural potential.

Agroprocessing and horticulture, like manufacturing, benefit from agglomeration economies. Governments can support agglomerations by concentrating investments in high-quality institutions and infrastructure aimed at improving agricultural productivity and agroprocessing value chains. Opportunities for the agribusiness industry suggest that targeted investment in processing, logistics, market infrastructure, and retail networks could help support the development and expansion of commercial value chains throughout the region.

BOX 3.6: Most Agroprocessing in Sub-Saharan Africa Is Small in Scale and Thus Inefficient and Relatively Unproductive

Today, agro-industry in Sub-Saharan Africa mostly misses scale and thus cannot weather risks easily, nor can it unleash innovation and orientation toward global markets. Agroprocessing industries equally lack scale. About 75 percent of agroprocessing in Sub-Saharan Africa (except in South Africa) is by micro or small enterprises that cater to low-income households within the towns or neighborhoods. Entrepreneurs of that size cannot take advantage of innovation to enhance productivity and resilience, and they cannot connect to markets beyond their towns, let alone beyond country borders.

BOX 3.6
Continued

South Africa is an illuminating exception. Although the country has more than 7,000 agroprocessing firms with their own commodity value chains, the sector is dominated by a few large, diversified firms. A key characteristic of agroprocessing in South Africa is its strong upstream and downstream links. Upstream, the sector links to primary agriculture across a variety of farming models and products. Downstream, agroprocessing outputs are intermediate products (to which further value is added) and final goods (marketed through wholesale and retail chains as well as a diverse array of restaurants, pubs, bars, and fast food franchise outlets).

For the most part, Sub-Saharan Africa currently relies on commodity trading rather than adding value to its commodities, which could bring more prosperous economic development. Africa's commitment to smallholder agriculture needs alternatives to advance the commercialization of production and bring in more reliable inputs.

Source: ACET 2017.

Assessing Options for Developing Midsize Cities

Secondary cities, the middle class of cities, are largely absent from Africa's urban landscape or, if they are present, they are stagnating without an industrial role. Africa clearly deviates from world trends by having most of its urban population living in small towns or large cities of more than one million people.⁷⁸ This implies a considerable lack of secondary city development—cities that many consider to be better facilitators of labor mobility, job creation, and the transition from rural to nonrural activities. Secondary cities are growing much more slowly than the bottom 50 percent of urban settlements by size. Although secondary cities thrive in many parts of the developing world as they receive industry decentralized from the metropolitan giants, Sub-Saharan African countries have so little industry that secondary cities have a small role at this time.

Although targeted development of secondary cities is seen by many of the region's governments and policy advisors as being key to economic growth in the region (see, for example, Christiaensen and Kanbur 2016), recent research questions the efficacy of this approach. A global analysis on the distribution of economic activity *within countries* shows that the spatial development patterns unfolding in low- and middle-income countries are unlikely to follow the same pattern observed in today's advanced countries that urbanized earlier (Henderson et al. 2018). In today's advanced countries, the process of agglomeration and structural transformation began early, when transport costs were still relatively high, so urban agglomerations arose in multiple agricultural regions. High costs of trade protected local markets. In later developing countries, transport costs had fallen well before structural transformation started. To reap urban scale economies, economic activity tended to agglomerate in relatively few, often coastal, locations. With structural transformation, these initial coastal locations grew, while cities formed more rarely in the agricultural interior.

⁷⁸ We do know that the midsize cities are reflective of economic development and the processes of economic development create the demand for midsize cities. China's middle size city development went hand in hand with economic transformation (see Urban China 2017).

A key takeaway is that agricultural fundamentals drove the location of economic activity in advanced countries, while cost-of-trade fundamentals play a much bigger role in developing countries (Henderson et al 2018). Africa’s domestic transport costs may be considered to be very high. Atkins and Donaldson (2015) show that the costs of intranational trade are approximately four to five times larger in Ethiopia and Nigeria than in the United States. Teravaninthorn and Raballand (2009) conduct a survey of truckers and also find that transport costs in Africa today are higher than in developed countries such as France and the United States by a factor of two or three. These high costs, particularly for places far from a major port, can dampen the extent of intra-national trade and limit the growth of secondary cities.

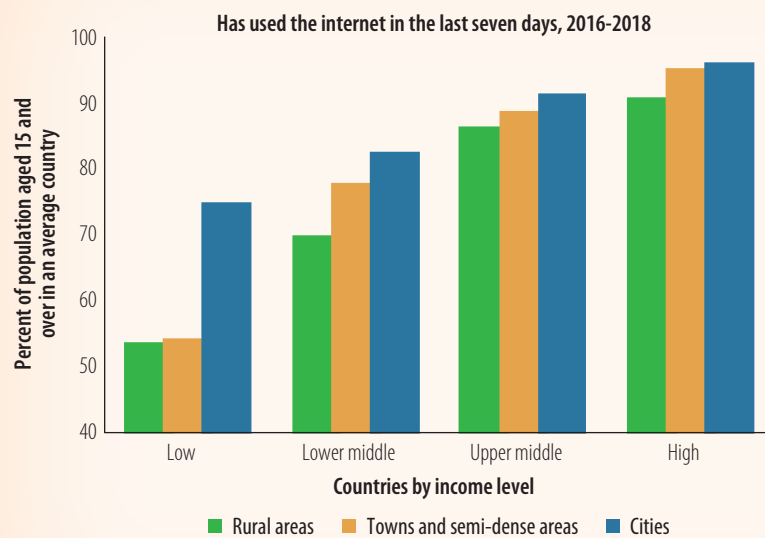
However, comparing recent domestic transport costs between developing and advanced countries is likely to be misleading. In fact, Given the major decline in transports costs in advanced countries and regions over the past 150 years, transport costs in Africa are far lower than they were in developed countries during their periods of rapid agglomeration (Henderson et al 2017). Inland areas of Africa are connected to world markets at costs that are low by historical standards. Thus, Africa’s urbanization is taking place in a relatively low transport cost environment in comparison with early developers. In applying their model, Henderson et al (2017) simulate that interior areas of the region, such as

the Congo Basin and the Ethiopian Highlands, would have had higher economic concentration if they were “early developers” than under the later development situations (which is what applied to them). Similarly, areas around navigable rivers, particularly the Nile and Niger, have higher predicted economic concentration under late development than if the region had developed early.

At the other end of the spectrum, Africa’s large cities have not broken into the markets of tradable industrial sectors benefiting from localization economies.

Countries such as China have been witnessing suburbanization of standardized industry out of large metropolitan cores, with investments in rail and road networks. With better transportation, businesses chose to leave high-priced urban cores and move to suburban locations. However, the engine for such transformation has not yet fired in most of Sub-Saharan Africa. It is plausible that digital technologies could reduce information and other transaction costs, making the development of medium-size cities less challenging. However, these would need to supported

FIGURE 3.24: Internet Use Is Low in Sparsely Populated Towns and Rural Areas in Low-Income Countries



Investments in digital infrastructure are needed to improve access of sparsely populated areas.

Source: Degree of Urbanization (European Commission).

by (1) major investments in digital infrastructure to improve access to sparsely populated areas (figure 3.24), (2) complementary investments in human capital to enhance the returns from digital development, and (3) coordinated investments in urban infrastructure to support city development.

Supporting Large Cities Break into Tradable Sectors by Supporting Dense and Connected Development

Large cities of more than one million people account for 34 percent of Sub-Saharan Africa's urban population. However, in contrast with the economically dense and connected urban forms that are visible in many middle-income cities, Africa's large cities are growing under a patchwork of constraints that hinder the drive toward dense concentrations of structures.

Using satellite and geographic information system data covering large cities across the region, the evidence suggests that cities in Africa today cannot be characterized as being economically dense, connected, and livable (Lall et al. 2017). Instead, they are crowded, disconnected, and therefore costly for households and firms. These high costs—related to their urban form—are keeping cities from growing their economies. Specifically, Africa's cities are *crowded and not economically dense*. Investments in infrastructure and industrial and commercial structures have not kept pace with the concentration of people, nor have investments in affordable formal housing.

Cities are *disconnected* as they have developed in small and fragmented neighborhoods, which lack reliable transportation and limit workers' job opportunities while preventing firms from reaping scale and agglomeration benefits. For example, heavy congestion, high rates of walking, informal collective transportation, and the spatial distribution of jobs and residents lead to low employment accessibility in Nairobi and the misallocation of labor (Avner and Lall 2016). *Matatu* (privately owned minibuses) users on average can access only 4 percent of jobs within 30 minutes, 10 percent within 45 minutes, and 20 percent within 60 minutes. These figures are very low: in metropolitan Buenos Aires, the equivalent accessibility figures using public transportation are 7, 18, and 34 percent for the same time thresholds (Peralta Quiros 2015). In Ugandan cities, 70 percent of work trips are on foot (Uganda Bureau of Statistics 2010), with the average share of jobs reachable within one hour standing at just 19 percent (Bernard 2016).⁷⁹

Cities in Sub-Saharan Africa fail to realize their potential gains from agglomeration and economic density, and they cannot efficiently match employers and job seekers through connections. Such inefficiency stymies agglomeration economies, keeping costs high and closing the doors of African cities to regional and global trade and investment. Cities are also *costly*, as there are few investments in structures imposing high living costs on workers and households, resulting in indirect costs and other constraints for firms: it is costly to live and do business in African cities.⁸⁰

⁷⁹ Conversely, car accessibility is very high in the United States—very few metropolitan areas have less than 100 percent average accessibility to employment within an hour (Levinson 2013)—and public transit accessibility is much lower. The city in the United States with the highest average employment accessibility via public transit is Salt Lake City, with only 25.4 percent of jobs reachable within 60 minutes (Owen and Levinson 2014). In many cities the average is far less: only 2.2 percent of jobs in Riverside, California and 2.8 percent in Atlanta, Georgia are accessible by public transit within 60 minutes. These numbers reflect the shaping of U.S. cities by cars and roads, which decentralize people and jobs. In such contexts, efforts to connect workers and firms through transit are unlikely to succeed.

⁸⁰ A 1 per cent reduction in spatial fragmentation measured is associated with a 12 per cent reduction in urban costs, controlling for income levels and city population (Lall et al. 2017).

For African cities to grow economically as they have grown in size, public policy and investment need to support *scale* and *specialization*, which would raise the level and sustain the growth of productivity. The urbanization process and urban areas are being hobbled by a myriad of constraints. Thus, the following priority areas for policy and investment merit consideration. These priorities are cognizant of the fact that urbanization is not a linear process; as countries in Sub-Saharan Africa reach middle incomes, their pace of urbanization (not urban growth) will accelerate and many countries will be two-thirds urbanized in a matter of decades. If economic development stagnates, urbanization is likely to stagnate as well. The priority is to create the enabling conditions for urbanization to accommodate and stimulate jobs and economic transformation.

Clarifying and Securing Land and Property Rights

Strengthening land rights is a precondition for the emergence of a formal land market. Informal, nonlegal markets can function in any condition, but informality in land markets is distinctively limiting because—unlike most informal businesses—land is an asset. Asset transactions are viable only if the purchaser can rely on some enduring, extralegal means whereby new ownership is recognized, such as sanction by the local community. In contrast, a formal market does not merely offer purchasers with the protection of the state; rather, because transactions are readily observable and recorded, it generates the public good of accurate valuation. African cities struggle with overlapping and sometimes contradictory property rights systems—formal, customary, and informal. Under the customary rules for land tenure that control much of the peri-urban and urban land in Africa, property rights depend on the consent of local chiefs or family elders. One example is Durban, South Africa (see the online appendix). Other examples are in Ghana, Lesotho, Mozambique, and Zambia.

When barriers to urban land access arise from an overly complex property rights regime, they impede the consolidation of plots and the transfer of land among users—and among uses. Firms cannot readily buy land to convert it from low-density residential use into higher-density apartments, or to build clusters of new commercial structures. Land transactions are long, costly, and complicated. Such market constraints reduce the collateral value of structures, giving developers little incentive to invest in residential height—while tempting all parties to enter informal arrangements (Lall et al. 2017).

Unclear land rights are severely constraining urban and rural land redevelopment throughout Africa, imposing high costs for businesses. Even where formal titles or clear land rights exist, basic mapping, geographic, or ownership information is often inaccurate or land records are poorly maintained, causing disputes. Applying for formal recognition can also be a tedious process. In Mozambique, an application for land plot concession from the relevant municipal directorate or municipal cadaster services involves as many as 103 administrative steps and may be protracted over several years (UN-Habitat 2008). The lack of a proper registration system prevents urban land markets from functioning well and creates obstacles to raising capital for development and investment—and to the local authority raising of revenue.

Across Africa, land databases and other systems to record information are inadequate and opaque. An African city is likely to struggle with overlapping systems of land tenure—formal, customary, and informal—in a single urban space, where they often conflict with each other and constrain land markets by creating confusion and disputes over land rights. These disfunctions distort the price and availability of land for efficient urban development. Finally, land administration systems (such as registries and cadaster records) are incomplete and underused for enforcing legal claims and landholders' fiscal obligations, so lenders cannot always use land as collateral. In Sub-Saharan Africa, only 10 percent of total land is registered (UN-Habitat forthcoming). In West Africa, only 2–3 percent of land is held with a government-registered title (Toulmin 2005).

Strengthening Urban Planning and Land Use Regulation

To get land development at scale, there is need for effective coordination among different plans to ensure the effectiveness of planning and the efficiency of investments. Coordination and alignment are needed vertically across different layers of plans—including *upstream* (aligning local development initiatives with regional and national priorities, under available budgets and resources) and *downstream* (trickling down from macrolevel strategic plans to local, detailed plans and leading to capital investment plans)—and horizontally across different sectors, especially between land use plans and infrastructure (particularly transport) investment plans. Such coordination requires constant engagement with economic, social, environment, and infrastructure agencies, as well as service providers, a key function of urban and regional planning.

The quality and appropriateness of planning instruments depend heavily on access to accurate information. Without such information, city leaders will be unable to plan for the future or take coordinated actions across institutions. Spearheading disruptive technologies can help largely on data collection and analysis, fostering evidence-based policy making, better governance, and efficiency. For example, in Nigeria, Sierra Leone, and Somalia, remote sensing technology has been used to estimate losses and damages in difficult-to-access places. In Kampala and Addis Ababa, satellite imagery has been used to monitor changes in land use patterns and identify vacant or underused land.

Investment planning will differ for larger cities and smaller towns because they often require different sets of investments. Large Sub-Saharan African cities need to scale up investments in infrastructure to contend with existing infrastructure and settlements. Because of higher density, some infrastructure solutions that are acceptable in low-density environments may not be sufficient in larger cities, often requiring more capital-intensive collective solutions. Smaller towns, in contrast, need support for extending access to basic infrastructure services, which can be delivered either through the subnational system (where such system performs reasonably) or direct investments.

Scaling Up Infrastructure Investments, Making Them Sustainably Financed and More Efficient

Even if Sub-Saharan African countries can strengthen planning and regulatory institutions for better coordination of their urban infrastructure investments, how will they finance these investments? This question has no easy answer. Local government revenues in Sub-Saharan Africa are generally low—with limited own-source revenues and modest amounts from intergovernmental transfers. Central government coffers are depleted, and local infrastructure is already financed through the government transfer system. Foreign aid is limited and often uncoordinated, and the private sector is risk averse in the face of political instability and low returns.

Average annual infrastructure spending of Sub-Saharan African countries was equal to 2 percent of GDP between 2009 and 2015. This amount was lower than annual infrastructure spending in China (8.8 percent of GDP in 2008-13), South Africa (4.7 percent), and the United Kingdom (2.2 percent), to mention a few examples.⁸¹ Two-thirds of spending by Sub-Saharan African countries was on roads; electricity and water supply and sanitation each accounted for one-sixth. Such public spending levels for infrastructure are far too low to address the region's deficit (World Bank 2017a).

Increase the sources of local government revenue. Only a handful of large cities with rich tax bases have substantial own-source revenues, and these are often related to having regional government status. Examples include Addis Ababa, Ethiopia, with US\$124 in per capita revenue for fiscal year 2011/12; Nairobi county, Kenya (US\$118 per capita for fiscal year 2015/16); and Kampala, Uganda (US\$59 per capita for fiscal year 2013/14). In contrast, the average local government had much lower revenue in Uganda (average US\$26 per capita, excluding Kampala); Ghana (average US\$14 per capita for 2015, including rural district governments); and Côte d'Ivoire (US\$6 per capita for 2013).

Property tax administration in Sub-Saharan Africa is extremely poor, with astonishingly low yields—for example, urban councils in Uganda received only US\$6 per capita for Kampala and an average of US\$4 per capita for other municipalities, and average annual receipt in Tanzania were as low as US\$0.38 per capita. The low yields are attributed to caps on property tax rates imposed by the central government, weak tax administration, and political resistance. Many local governments also lack the institutional capacity to perform the critical functions of tax administration—recording, valuation, and collection—so the process fails at every stage.

Given the low property tax revenues, most Sub-Saharan African countries permit local governments to impose further taxes on business activity—although most are not explicitly called “taxes”—and these account for a larger share of local urban revenues than property taxes. For example, Tanzania allows local governments to impose a “service levy” on registered businesses at a rate of 0.3 percent of their turnover net of value-added tax. Other countries impose annual “license fees” on various business categories.⁸² With local tax revenues being low, intergovernmental transfers account for most of the urban local government revenues—as

⁸¹ See Statista: <https://www.statista.com/statistics/566787/average-yearly-expenditure-on-economic-infrastructure-as-percent-of-gdp-worldwide-by-country/>.

⁸² In addition to property taxes and “business taxes,” a few countries such as Uganda also attempt to tax income, but these revenues are low; similarly, utility service charges may be assessed but they are typically too low to cover operating costs.

much as 80–90 percent, including shared taxes (those collected by the central government but returned at least partly to the originating jurisdictions).

Looking farther ahead, Sub-Saharan African countries will need to increase the domestic revenue available to local governments—but the challenges are daunting. The predominance of the informal economy in African cities makes it difficult to tax local businesses or personal income on a significant scale. And the sorry state of property tax administration—combined with the political obstacles to imposing property taxes at significant rates—suggests that it will take time to increase yields from this source. It may also call for a review of employing more land-related taxation (as opposed to property taxation) to simplify the burden of valuation and as a tool to incentivize better land use in prime urban areas.

Strengthen land valuation. Land pricing on the market partly depends on policies, which must be designed with great care. Taxes, charges, and subsidies can be used to complement regulatory controls on land use, creating financial incentives and disincentives. Revenues—such as those from land-based financing—can also be used to finance administrative costs and infrastructure. Implementation tools, such as capital investment, budget, and phasing plans, can help with upstream planning.

Most cities in Sub-Saharan Africa lack the capacity to raise revenues from land: laws prohibit, or severely limit land fees and taxes (World Bank 2015b). Even with different laws in place, cities would have little power to leverage land for revenue, as fiscal cadaster records and capacities are weak. And cities' reliance on central government transfers means that they have few incentives to make such efforts. Given the inadequacy of revenues from intergovernmental transfers, Africa's cities should consider land and property taxes to finance urban infrastructure and public services.

Crowd in private sector finance. In principle, local governments could finance investments through municipal public-private partnerships (PPPs).⁸³ In Tanzania, for example, several urban local governments have agreements with private investors to provide bus terminals, municipal markets, shopping centers, and hotel and conference centers. The private partners assumed responsibility for building and operating the facilities. In some instances, local governments contributed to the construction cost or provided the land. The agreements establish the share of revenues, standards for maintenance and operations of the facilities, and penalties for not meeting the terms and conditions of the agreement. To crowd in larger infrastructure investments, more innovative fund and deal structures need to be offered to mitigate risk. These structures could include guarantees and other risk-sharing designs, or blended finance instruments that can leverage private sector funding for infrastructure development.

Tap central government resources and foreign aid. In the short term, central governments could spend more—directly by investing in infrastructure projects and indirectly by scaling up transfers. Central governments have an overwhelming comparative advantage in mobilizing resources—in part because they are the negotiators of foreign assistance, an important source of funding for most Sub-Saharan African countries, with the share of the overall capital budget

⁸³ In generic terms, a municipal PPP is a contract between a municipality and a private party in which the private party assumes substantial financial, technical, and operational risk in the design, financing, building, and operation of a service.

allocations funded through foreign aid registering 36 percent in 2015 (World Bank 2017a). Most central governments also monopolize the main tax instruments, so local governments should not appropriate these instruments.

Foreign aid in support of transfers through government systems may support better coordination of investments at the local level and increase accountability and ownership. With major infrastructure projects being mostly undertaken directly by central government ministries or parastatals, the result often triggers poor coordination and lack of institutional coherence with local government efforts. Countries have experimented with different types of transfers for capital investment financed by foreign aid: a move supported by the World Bank in more than a dozen countries, with mixed results. Such interventions often bring important opportunities to reform the procedures for distributing these transfers, reducing the role of political considerations and making the allocation more objective and transparent.

Raise investment efficiency. Strong infrastructure governance plays an important role in boosting the output multiplier of infrastructure investment in developing countries. The positive growth and private investment impacts of increases in public investment are larger in countries with stronger infrastructure governance. In contrast, output and private investment decreases while public debt increases, in response to increased public investment in countries with weaker governance, possibly suggesting problems with project selection and costing, and with the crowding out of private investment (Schwartz et al. 2020).

Scaling up infrastructure investment requires better public financial management capacity, including countries' capacity to select and appraise projects on the basis of economic returns analyses and to monitor their implementation to minimize leakages. It also entails the inclusion of operation and management expenditure for existing and future infrastructure to ensure that such expenditure systems are sufficiently budgeted and avoid the early decay of built infrastructure (World Bank 2017a). In addition to enhancing the infrastructure governance managing large-scale infrastructure, the allocative efficiency of central government transfers must be reconsidered. Among these transfers, the most urgent need is to reform the unconditional transfers that fail to meet any efficiency criteria. Such a reform would include four steps: first, make the total amount of central government transfers more predictable—for example, by fixing them as a percentage of total central government revenues (or GDP); second, make the criteria for distributing unconditional transfers among individual jurisdictions more transparent; third, give less weight to variables in transfer formulas that are biased against cities; and fourth, ensure that transfers are distributed according to their enabling legislation.

Appendix: Country Classifications

TABLE A1: Country Classification by Resource Abundance in Sub-Saharan Africa

Resource-rich countries		Non-resource-rich countries		
Oil	Metals & minerals			
Angola	Botswana	Benin	Gambia, The	São Tomé and Príncipe
Chad	the Democratic Republic of Congo	Burkina Faso	Ghana	Senegal
Republic of Congo	Guinea	Burundi	Guinea-Bissau	the Seychelles
Equatorial Guinea	Liberia	Cabo Verde	Kenya	Somalia
Gabon	Mauritania	Cameroon	Lesotho	Sudan
Nigeria	Namibia	Central African Republic	Madagascar	Tanzania
South Sudan	Niger	the Comoros	Malawi	Togo
	South Africa	Côte d'Ivoire	Mali	Uganda
	Sierra Leone	Eritrea	Mauritius	Zimbabwe
	Zambia	Eswatini	Mozambique	
		Ethiopia	Rwanda	

Note: Resource-rich countries are those with rents from natural resources (excluding forests) that exceed 10 percent of gross domestic product.

TABLE A2: West and Central Africa

Resource-rich countries		Non-resource-rich countries	Fragile countries
Oil	Metals & minerals		
Chad	Guinea	Benin	Burkina Faso
Equatorial Guinea	Liberia	Burkina Faso	Cameroon
Gabon	Mauritania	Cabo Verde	the Central African Republic
Nigeria	Niger	Cameroon	Chad
Republic of Congo	Sierra Leone	the Central African Republic	The Gambia
		Côte d'Ivoire	Guinea-Bissau
		The Gambia	Liberia
		Ghana	Mali
		Guinea-Bissau	Niger
		Mali	Nigeria
		Senegal	the Republic of Congo
		Togo	

Note: Since July 2020, for operational purposes, the World Bank Africa Region has been split into two subregions—West and Central Africa and East and Southern Africa. The analysis in this report reflects this setup.

TABLE A3: East and Southern Africa

Resource-rich countries		Non-resource-rich countries	Fragile countries
Oil	Metals & minerals		
Angola	Botswana	Burundi	Burundi
South Sudan	the Democratic Republic of Congo	the Comoros	the Comoros
	Namibia	Eritrea	the Democratic Republic of Congo
	South Africa	Eswatini	Eritrea
	Zambia	Ethiopia	Mozambique
		Kenya	Somalia
		Lesotho	South Sudan
		Madagascar	Sudan
		Malawi	Zimbabwe
		Mauritius	
		Mozambique	
		Rwanda	
		São Tomé and Príncipe	
		the Seychelles	
		Somalia	
		Sudan	
		Tanzania	
		Uganda	
		Zimbabwe	

Note: Since July 2020, for operational purposes, the World Bank Africa Region has been split into two subregions—West and Central Africa and East and Southern Africa. The analysis in this report reflects this setup.

References

- Abreha, K. G., P. Jones, E. Lartey, T. Mengistae, and A. Zeufack. 2019. "Manufacturing Job Growth in Africa: What Is Driving It? The Cases of Côte d'Ivoire and Ethiopia." World Bank, Washington, DC.
- ACET (African Center for Economic Transformation). 2017. *African Transformation Report 2017: Agriculture Powering Africa's Economic Transformation*. Accra, Ghana: ACET.
- Adelino, Manuel, Song Ma, and David Robinson. 2017. "Firm Age, Investment Opportunities and Job Creation." *Journal of Finance* 72 (3): 999–1038.
- Aksoy, Cevat Giray, Michael Ganslmeier, and Panu Poutvaara (2020) "Public Attention and Policy Responses to COVID-19 Pandemic," IZA Discussion Paper No. 13427, June.
- Allard, Céline, Jorge Iván Canales Kriljenko, Wenjie Chen, Jesus Gonzalez-Garcia, Emmanouil Kitsios, and Juan Treviño. 2016. *Trade Integration and Global Value Chains in Sub-Saharan Africa: In Pursuit of the Missing Link*. Washington, DC: Africa Department, International Monetary Fund.
- Almeida, Rita, Ana M. Fernandes, Mariana Viollaz, and Rita Kullberg Almeida. 2017. "Does the Adoption of Complex Software Impact Employment Composition and the Skill Content of Occupations? Evidence from Chilean Firms." Policy Research Working Paper 8110, World Bank, Washington, DC.
- Arnold, Jens Matthias, Beata Smarzynska Javorcik, Molly Lipscomb, and Aaditya Mattoo. 2016. "Services Reform and Manufacturing Performance: Evidence from India." *Economic Journal* 126 (590): 1–39.
- Arnold, Jens Matthias, Beata Smarzynska Javorcik, and Aaditya Mattoo. 2011. "Does Services Liberalization Benefit Manufacturing Firms? Evidence from the Czech Republic." *Journal of International Economics* 85 (1): 136–46.
- Atiyas, İzak, and Toker Doganoglu. 2020. "Using the RIA Data Set to Explore Correlates of Mobile Internet Use in Sub-Saharan Africa." Sabanci University, Istanbul, Turkey.
- Atiyas, İzak, and Mark Dutz. 2020. "Digital Technology Use among Informal Micro-Entrepreneurial Firms: Productivity, Profits, Exports and Inclusive Jobs Outcomes in Senegal." World Bank, Washington, DC.
- Atkin, D., and D. Donaldson. 2015. "Who's Getting Globalized? The Size and Implications of Intranational Trade Costs." NBER Working Paper No. 21439, National Bureau of Economic Research, Cambridge, MA.
- Bahia, Kalvin, Pau Castells, Genaro Cruz, Takaaki Masaki, Xavier Pedrós, Tobias Pfutze, Carlos Rodríguez-Castelán, and Hernan Winkler. 2020. "The Welfare Effects of Mobile Broadband Internet: Evidence from Nigeria." Policy Research Working Paper 8298, World Bank, Washington, DC.
- Baker, J., D. Cira, and S. Lall. 2020. "COVID-19 and the Urban Poor: Addressing Those in Slums," <http://pubdocs.worldbank.org/en/304801589388481883/Addressing-COVID-19-and-the-Urban-Poor-SHORT-version-rev3-logos.pdf>.
- Baldwin, R., and E. Tomiura. 2020. "Thinking Ahead about the Trade Impact of COVID-19." *Economics in The Time Of COVID-19* 59.
- Bastian, Gautam, Iacopo Bianchi, Markus Goldstein, and Joao Montalvao. 2018. "Short-Term Impacts of Improved Access to Mobile Savings, with and without Business Training: Experimental Evidence from Tanzania." Working Paper 478, Center for Global Development, Washington, DC.
- Benmelech, Efraim, and Nitzan Tzur-Ilan. 2020. "The Determinants of Fiscal and Monetary Policies during the COVID-19 Crisis." Working Paper 27461, National Bureau of Economic Research, Cambridge, MA.
- Berkmen, S. Pelin, Gaston Gelos, Robert Rennhack, and James P. Walsh. 2012. "The Global Financial Crisis: Explaining Cross-Country Differences in the Output Impact." *Journal of International Money and Finance* 31: 42–59.

- Bernard, Jean-Marc, Brahim Sangafowa Coulibaly, and Rebecca Winthrop. 2020. "Education Is Crucial to Africa's COVID-19 Response." Brookings Institutions, blogpost, June 4.
- Bery, Suman, Sybrand Brekelmans, and Alicia García-Herrero. 2020. "Debt Relief for Sub-Saharan Africa: What Now?" Bruegel, blogpost, July.
- Beuermann, D. W., C. McKelvey, and R. Vakis. 2012. "Mobile Phones and Economic Development in Rural Peru." *Journal of Development Studies* 48: 11: 1617–28.
- Beverelli, C., M. Fiorini, and B. Hoekman. 2017. "Services Trade Policy and Manufacturing Productivity: The Role of Institutions." *Journal of International Economics* 104: 166–82.
- Bigsten, Arne, and Mulu Gebreeyesus. 2009. "Firm Productivity and Exports: Evidence from Ethiopian Manufacturing." *Journal of Development Studies* 45 (10): 1594–1614.
- Birba, O., and A. Diagne. 2012. "Determinants of Adoption of Internet in Africa: Case of 17 Sub-Saharan Countries." *Structural Change and Economic Dynamics* 23: 463–72.
- Bloom, Nicholas, and John Van Reenen. 2007. "Measuring and Explaining Management Practices across Firms and Countries." *Quarterly Journal of Economics* 122 (4): 1351–1408.
- . 2010. "Why Do Management Practices Differ across Firms and Countries?" *Journal of Economic Perspectives* 24 (1): 203–24.
- Blumenstock, J., N. Keleher, A. Rezaee, and E. Troland. 2020. "The Impact of Mobile Phones: Experimental Evidence from the Random Assignment of New Cell Towers." University of California, Berkeley
- Bodewig, Christian, Ugo Gentilini, Zainab Usman, and Penny Williams. 2020. "COVID-19 in Africa: How Can Social Safety Nets Help Mitigate the Social and Economic Impacts?" Africa Can End Poverty, blogpost, World Bank, Washington, DC, April.
- Bolton, Patrick, Lee C. Buchheit, Pierre-Olivier Gourinchas, G. Mitu Gulati, Chang-Tai Hsieh, Ugo Panizza, and Beatrice Weder di Mauro. 2020. "Born Out of Necessity: A Debt Standstill for COVID-19." Policy Insight No. 103, Center for Economic and Policy Research, Washington, DC.
- Borchert, Ingo, Batshur Gootiiz, and Aaditya Mattoo. 2014. "Policy Barriers to International Trade in Services: Evidence from a New Database." *World Bank Economic Review* 28 (1): 162–88.
- Brambilla, Irene, and Darío Tortarolo. 2018. "Investment in ICT, Productivity, and Labor Demand: The Case of Argentina." Policy Research Working Paper 8325, World Bank, Washington, DC.
- Christiaensen, Luc, and Ravi Kanbur. 2016. "Secondary Towns and Poverty Reduction: Refocusing the Urbanization Agenda." Policy Research Working Paper 7895, World Bank, Washington, DC.
- Combes, Pierre-Philippe, and Laurent Gobillon. 2015. "The Empirics of Agglomeration Economies." In *Handbook of Regional and Urban Economics*, volume 5, edited by Gilles Duranton, J. Vernon Henderson, and William C. Strange, 247–348. North Holland: Elsevier.
- Comini, Niccolò. 2020. "The Effect of COVID-19 Lockdown Measures on Internet Speed: An Empirical Analysis for 18 African Countries." Digital Development Analytical Insight, World Bank, Washington, DC.
- Coulibaly, Souleymane, Woubet Kassa, and Albert G. Zeufack. 2020. *Africa in the New Trade Environment: Market Access in Troubled Times*. Washington, DC: Office of the Chief Economist of the Africa Region, World Bank.
- Crisuolo, Chiara, and Jonathan Timmis. 2017. "The Relationship between Global Value Chains and Productivity." *International Productivity Monitor, Centre for the Study of Living Standards* 32: 61–83.

- Cusolito, Ana Paula, Daniel Lederman, and Jorge Peña. 2020. "The Effects of Digital-Technology Adoption on Productivity and Factor Demand: Firm-level Evidence from Developing Countries." Policy Research Working Paper 9333, World Bank, Washington, DC.
- Cusolito, Ana Paula, and Fausto Patiño Peña. 2020. "How Digital-Technology Adoption Affects the Skill Composition of the Workforce: Firm-level Evidence for Manufacturing vs. Service Sectors in Sub-Saharan Africa." World Bank, Washington, DC.
- Daly, Jack, and Gary Gereffi. 2018. "Tourism Global Value Chains and Africa." In *Industries without Smokestacks: Industrialization in Africa Reconsidered*, edited by Richard Newfarmer, John Page, and Finn Tarp, 68–89. Oxford University Press.
- Dasgupta, B., S. Lall, and N. Lozano Gracia. 2014. "Urbanization and Housing Investment." Policy Research Working Paper 7110, World Bank, Washington, DC.
- De Loecker, Jan. 2013. "Detecting Learning by Exporting." *American Economic Journal: Microeconomics* 5 (3): 1–21.
- De Waal, A. 2020. "COVID-19: Know Your Epidemic, Act on Its Politics." London School of Economics, London, UK.
- Duarte, Margaride, and Diego Restuccia. 2010. "The Role of the Structural Transformation in Aggregate Productivity." *Quarterly Journal of Economics* 125 (1): 129–73.
- . 2018. "Structural Transformation and Productivity in Sub-Saharan Africa." University of Toronto, Canada.
- Dutz, Mark A., Lucas Ferreira Mation, Stephen D. O'Connell, and Robert D. Willig. 2017. "Economywide and Sectoral Impacts on Workers of Brazil's Internet Rollout." *Forum for Social Economics* 46 (2): 160–77.
- Economist Intelligence Unit. 2020. "Africa Weekly Brief: Pandemic Leads to Slump in Remittances." Economist Intelligence Unit, August.
- Ferrantino, Michael Joseph, and Emine Elcin Koten. 2019. "Understanding Supply Chain 4.0 and Its Potential Impact on Global Value Chains." In *Global Value Chain Development Report 2019: Technological Innovation, Supply Chain Trade, and Workers in a Globalized World*, 103–19. Geneva: World Trade Organization.
- Freund, C., A. Mattoo, A. Mulabdic, and M. Ruta. 2020. "The Supply Chain Shock from COVID-19: Risks and Opportunities." *COVID-19 In Developing Economies*.
- Fuglie, Keith, Madhur Gautam, Aparajita Goyal, and William F. Maloney. 2020. *Harvesting Prosperity: Technology and Productivity Growth in Agriculture*. Washington, DC: World Bank.
- Fuglie, Keith, and Nicholas Rada. 2013. "Resources, Policies, and Agricultural Productivity in Sub-Saharan Africa." USDA-ERS No. 145, U.S. Department of Agriculture Economic Research Service, Washington, DC.
- Gelb, Alan, and Anit Mukherjee. 2020. "Digital Technology in Social Assistance Transfers for COVID-19 Relief: Lessons from Selected Cases." CGD Policy Paper 181, Center for Global Development, Washington, DC.
- Gentilini, Ugo, Mohamed Almenfi, Pamela Dale, Robert Palacios, Harish Natarajan, Guillermo Alfonso Galicia Rabadan, Yuko Okamura, John Blomquist, Miglena Abels, Gustavo Demarco, and Indhira Santos. 2020. "Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures." World Bank, Washington, DC.
- GMSA (Global System for Mobile Communications). 2019. *Mobile Connectivity Index: Methodology*. London, UK: Global System for Mobile Communications, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/GSMA-Mobile-Connectivity-Index-Methodology-2019.pdf>.
- . 2020. *The Mobile Economy: Sub-Saharan Africa 2020*. London, UK: Global System for Mobile Communications.

- Goyal, Aparajita. 2010. "Information, Direct Access to Farmers, and Rural Market Performance in Central India." *American Economic Journal: Applied Economics* 2 (3): 22–45.
- Goyal, Aparajita., and John Nash. 2017. *Reaping Richer Returns: Public Spending Priorities for African Agriculture Productivity Growth*. Washington, DC: World Bank and Agence Francaise de Developpement.
- Gruszczynski, L. 2020. "The COVID-19 Pandemic and International Trade: Temporary Turbulence or Paradigm Shift?" *European Journal of Risk Regulation* (April): 1–6.
- Guerrieri, Veronica, Guido Lorenzoni, Ludwig Straub, and Iván Werning. 2020. "Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages?" NBER Working Paper No. 26918, National Bureau of Economic Research, Cambridge, MA.
- Hale, Thomas, Sam Webster, Anna Petherick, Toby Phillips, and Beatriz Kira. 2020. "Oxford COVID-19 Government Response Tracker." Blavatnik School of Government, Oxford, UK.
- Harding, Torfinn, and Beata Javorcik. 2013. "Foreign Direct Investment and Export Upgrading." *Review of Economics and Statistics* 94 (4): 964–80.
- Henderson, J. Vernon, and Sebastian Kriticos. 2017. "The Development of the African System of Cities." *Annual Review of Economics* 10: 287–314.
- Henderson, J. Vernon, Dzhamilya Nigmatulina, and Sebastian Kriticos. 2019. "Measuring Urban Economic Density." *Journal of Urban Economics*, <https://doi.org/10.1016/j.jue.2019.103188>.
- Henderson, J. Vernon, Tim Squires, Adam Storeygard, and David N. Weil. 2018. "The Global Distribution of Economic Activity: Nature, History, and the Role of Trade." *Quarterly Journal of Economics* 133 (1): 357–406.
- Henderson, J. Vernon, and Matthew A. Turner. 2020. "Urbanization in the Developing World: Too Early or Too Slow?" *Journal of Economic Perspectives* 34 (3): 150–73.
- Herrendorf, Berthold, Richard Rogerson, and Akos Valentinyi. 2014. "Growth and Structural Transformation." In *Handbook of Economic Growth*, volume 2, edited by Philippe Aghion and Steven Durlauf, 855–941. Elsevier.
- Hoekman, B., and B. Shepherd. 2017. "Services Productivity, Trade Policy and Manufacturing Exports." *World Economy* 40 (3): 499–516.
- Hommann, Kirsten, and Somik V. Lall. 2019. *Which Way to Livable and Productive Cities? A Road Map for Sub-Saharan Africa*. International Development in Focus. Washington, D.C: World Bank Group.
- Houngbonon, Georges V., Justice Tei Mensah, and Nouhoum Traore. 2020. "High-Speed Internet, Innovation and Entrepreneurship: Evidence from Africa." World Bank, Washington, DC.
- Huria, Sughandha, Ruchita Manghnani, Sebastian Saez, and Eric van der Marel. 2019. "Servicification of Indian Manufacturing." World Bank, Washington, DC.
- Iacovone, Leonardo, and Mariana Pereira-López. 2018. "ICT Adoption and Wage Inequality: Evidence from Mexican Firms." Policy Research Working Paper 8298, World Bank, Washington, DC.
- ITU (International Telecommunication Union). 2018. "The Economic Contribution of Broadband Digitization and ICT Regulation." ITU, Geneva, Switzerland.
- . 2019a. "Economic Impact of Broadband in LDCs, LLDCs and SIDS: An Empirical Study." ITU, Geneva, Switzerland.
- . 2019b. "Measuring Digital Development ICT Price Trends 2019." ITU, Geneva, Switzerland.
- Javorcik, B. 2020a. "Global Supply Chains Will Not Be the Same in The Post-COVID-19 World." In *COVID-19 and Trade Policy: Why Turning Inward Won't Work*, edited by Richard Baldwin and Simon Evenett, 111. Washington, DC: Center for Economic and Policy Research.

- . 2020b. “Eight Things Development Professionals Should Know about Foreign Direct Investment.” PEDL Synthesis Series, Private Enterprise Development in Low-Income Countries, Center for Economic and Policy Research, Washington, DC.
- Jedwab, R., L. Christiansen, and M. Gindelsy. 2017. “Demography, Urbanization and Development: Rural Push, Urban Pull and . . . Urban Push?” *Journal of Urban Economics* 98: 6–16.
- Jones, Patricia, Emmanuel K. K. Lartey, Taye Mengistae, and Albert G. Zeufack. 2019. “Sources of Manufacturing Productivity Growth in Africa.” Policy Research Working Paper 8980, World Bank, Washington, DC.
- Kaila, Heidi, and Finn Tarp. 2019. “Can the Internet Improve Agricultural Production? Evidence from Viet Nam.” *Agricultural Economics* 50 (6): 675–91.
- Kalenzi, Cornelius, and Mekuria Haile Teklemariam. 2020. “It’s Time for a Great Reset of Africa’s E-Health Systems: Here’s How.” World Economic Forum, COVID Platform Action, blogpost, July 17. <https://www.weforum.org/agenda/2020/07/great-reset-africas-e-health-systems/>.
- Kassa, W. 2020. “COVID-19 and Trade in SSA: Impacts and Policy Response.” Policy Brief, June, World Bank, Washington, DC.
- Kim, Jeehye, Parmesh Shah, Joanne Catherine Gaskell, Ashesh Prasann, and Akanksha Luthra. 2020. “Scaling Up Disruptive Agricultural Technologies in Africa.” International Development in Focus, World Bank, Washington, DC.
- Kowalski, Przemyslaw, Javier Lopez Gonzalez, Alexandros Ragoussis, and Cristian Ugarte. 2015. “Participation of Developing Countries in Global Value Chains: Implications for Trade and Trade-Related Policies.” OECD Trade Policy Papers No. 179, Organisation for Economic Co-Operation and Development, Paris.
- Kowlessur, Sudhirsan, Bhushan Ori, Paul Zimmet, Jaakko Tuomilehto, Pierrot Chitson, and Yogeshwaree Ramphul. 2020. “Tackling the COVID-19 Pandemic in Paradise: The Mauritian Experience.” *The Lancet*, September 24, [https://doi.org/10.1016/S2213-8587\(20\)30336-3](https://doi.org/10.1016/S2213-8587(20)30336-3).
- Lagakos, David. 2020. “Urban-Rural Gaps in the Developing World: Does Internal Migration Offer Opportunities?” *Journal of Economic Perspectives* 34 (3):174–92.
- Lall, Somik Vinay, J. Vernon Henderson, and Anthony J. Venables. 2017. *Africa’s Cities: Opening Doors to the World*. Washington, DC: World Bank.
- Lall, S., and S. Wahba. 2020. “No Urban Myth: Building Inclusive and Sustainable Cities in the Pandemic Recovery,” <https://www.worldbank.org/en/news/immersive-story/2020/06/18/no-urban-myth-building-inclusive-and-sustainable-cities-in-the-pandemic-recovery>.
- Lind, Jo Thori, and Halvor Mehlum. 2010. “With or Without U? The Appropriate Test for a U-Shaped Relationship.” *Oxford Bulletin of Economics and Statistics* 72 (1): 109–18.
- Liu, Xuepeng, Aaditya Mattoo, Zhi Wang, and Shang-Jin Wei. 2018. “Services Development and Comparative Advantage in Manufacturing.” Policy Research Working Paper 8450, World Bank, Washington, DC.
- Lopez-Acevedo, Gladys, and Raymond Robertson. 2016. *Stitches to Riches? Apparel Employment, Trade, and Economic Development in South Asia*. Directions in Development: Poverty. Washington, DC: World Bank.
- Lu, S. 2019. “2019 Fashion Industry Benchmarking Study.” United States Fashion Industry Association, Washington, DC.
- Masaki, Taakaki, Chandni Raja, and Carlos Rodríguez-Castelán. 2020. “Mobile Internet and Agricultural Productivity in Nigeria.” World Bank, Washington, DC.

- Masaki, Takaaki, Rogelio Granguillhome-Ochoa, and Carlos Rodríguez-Castelán. 2020. "Broadband Internet and Household Welfare in Senegal." Policy Research Working Paper 9386, World Bank, Washington, DC.
- McKinsey Global Institute. 2020. *Risk, Resilience, and Rebalancing in Global Value Chains*. McKinsey Global Institute.
- Mold, Andrew, and Anthony Mveyange. 2020. "Crisis? What Crisis? COVID-19 and the Unexpected Recovery of Regional Trade in East Africa." Brookings Institution, blogpost, Washington, DC, September 28.
- Nakamura, S., B. Paliwal, and N. Yoshida. 2018. *Overview of the Trends of Monetary and Non-Monetary Poverty and Urbanization in Sub-Saharan Africa*. Washington, DC: World Bank.
- Ndubuisi, Gideon, and Solomon Owusu. 2020. "How Important Is GVC Participation to Export Upgrading?" MERIT Working Papers 2020-026, United Nations University – Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT). Maastricht, Netherlands.
- Nguimkeu, P., and A. G. Zeufack. 2019. "Manufacturing in Structural Change in Africa." Policy Research Working Paper 8992, World Bank, Washington, DC.
- Nye, Alexander. 2020. "Who's Afraid of Some (Not So Big or Bad) Debt Relief?" Yale School of Management, blogpost, July.
- Oughton, Edward J. 2020. "Universal Broadband for Africa." World Bank, Washington, DC.
- Pahl, Stefan, Marcel P. Timmer, Reitze Gouma, and Pieter J. Woltjer. 2019. "Jobs in Global Value Chains: New Evidence for Four African Countries in International Perspective." Policy Research Working Paper 8953, World Bank, Washington, DC.
- Porto, Guido. 2020. "Digital Technologies and Poorer Households' Income Earning Choices in Sub-Saharan Africa: Analytical Framework and a Case Study for Senegal and Kenya." Department of Economics, Universidad de La Plata, La Plata, Argentina.
- Psacharopoulos, George, Harry Patrinos, Victoria Collis, and Emiliana Vegas. 2020. "The COVID-19 Cost of School Closures." Brookings Institutions, Education plus Development, blog, April 29.
- Quirós, T. P., and S. R. Mehdiratta. 2015. "Accessibility Analysis of Growth Patterns in Buenos Aires, Argentina: Density, Employment, and Spatial Form." *Transportation Research Record. Journal of the Transportation Research Board* 2512: 101–09.
- Ray, D., N. Ramankutty, and N. Mueller. 2012. "Recent Patterns of Crop Yield Growth and Stagnation." *Nature Communications* 3: 1293.
- Reijnders, Laurie S. M., and Gaaitzen J. de Vries. 2018. "Technology, Offshoring and the Rise of Non-Routine Jobs." *Journal of Development Economics* 135: 412–32.
- Research ICT Africa. 2019. "After Access 2018: A Demand-Side View of Mobile Internet from 10 African Countries." Research ICT Africa, Cape Town, South Africa, https://researchictafrica.net/2019_after-access_africa-comparative-report/.
- Rodríguez-Castelán, Carlos, Abdelkrim Araar, Rogelio Granguillhome Ochoa, and Eduardo A. Malásquez. 2020a. "The Welfare Effects of Competition Reform in the Telecommunications Sector in Ethiopia." World Bank, Washington, DC.
- Rodríguez-Castelán, Carlos, Samantha Lach, Takaaki Masaki, and Rogelio Granguillhome-Ochoa. 2020b. "Digital Technologies and Household Welfare in Senegal." World Bank, Washington, DC.
- Rodríguez-Castelán, Carlos, Rogelio Granguillhome Ochoa, Samantha Lach, and Takaaki Masaki. 2020. "Internet Adoption in Senegal." World Bank, Washington, DC.

- Rodríguez-Castelán, Carlos, Rogelio Granguillhome Ochoa, Samantha Lach, and Takaaki Masaki. 2020c. "Internet Adoption in West Africa." World Bank, Washington, DC.
- Rodrik, Dani. 2016. "Premature Deindustrialization." *Journal of Economic Growth* 21 (1): 1–33.
- . 2018. "New Technologies, Global Value Chains, and Developing Economies." NBER Working Paper No. 25164, National Bureau of Economic Research, Cambridge, MA.
- Sanchez P. A. 2010. "Tripling Crop Yields in Tropical Africa." *Nature Geoscience* 3: 299–300.
- Schwartz, Gerd, Manal Fouad, Torben Hansen, and Geneviève Verdier, eds. 2020. *Well Spent: How Strong Infrastructure Governance Can End Waste in Public Investment*. Washington, DC: International Monetary Fund.
- Soppelsa, Maria Edisa, Nancy Lozano Gracia, and L. Colin Xu. 2019. "The Effects of Pollution and Business Environment on Firm Productivity in Africa." Policy Research Working Paper 8834, World Bank, Washington, DC.
- Suri, Tavneet, and William Jack. 2017. "The Long-Run Poverty and Gender Impacts of Mobile Money." *Science* 354 (6317): 1288–92.
- Taglioni, Daria, and Deborah Elisabeth Winkler. 2016. *Making Global Value Chains Work for Development*. Washington, DC: World Bank Group.
- Teravaninthorn, Supee, and Gaël. Raballand, Gaël. 2009. *Transport Prices and Costs in Africa: A Review of the International Corridors*. Directions in Development: Infrastructure. Washington, DC: World Bank.
- Torero, Maximo. 2020. "Prepare Food Systems for a Long-Haul Fight Against COVID-19." COVID-19 Food Security Updates, Food and Agriculture Organization, International Food Policy Research Institute, and World Bank, Washington, DC.
- Travaly, Youssef, and Aretha Mare. 2020. "Learning from the Best: Evaluating Africa's COVID-19 Responses." Africa in Focus, Brookings Institution, Washington, DC.
- UNCTAD (United Nations Conference on Trade and Development). 2020. *Economic Development in Africa Report 2020: Tackling Illicit Financial Flows for Sustainable Development in Africa*. Geneva: UNCTAD.
- UNECA (United Nations Economic Commission for Africa). 2020. *Creating a Unified Regional Market: Towards the Implementation of the African Continental Free Trade Area in East Africa*. Kigali, Rwanda: UNECA.
- UNWTO (UN World Tourism Organization). 2020a. "How Are Countries Supporting Tourism Recovery?" UNWTO Briefing Note. Tourism and COVID-19, Issue 2, June. UNWTO, Madrid.
- . 2020b. "UNWTO Adapts Agenda for Africa to Accelerate Tourism Recovery." UNWTO, Madrid, <https://www.unwto.org/news/unwto-adapts-agenda-for-africa-to-accelerate-tourism-recovery>.
- Van Biesebroeck, Johannes, and Emmanuel Buadi Mensah. 2019. "The Extent of GVC Engagement in Sub-Saharan Africa." Policy Research Working Paper 8937, World Bank, Washington, DC.
- Vegas, Emiliana. 2020. "School Closures, Government Responses, and Learning Inequality around the World during COVID-19." Brookings Institutions, Brief, April 14.
- World Bank. 2008. *World Development Report 2009: Reshaping Economic Geography*. Washington, DC: World Bank.
- . 2016. *Breaking Down Barriers: Unlocking Africa's Potential through Vigorous Competition Policy*. Washington, DC: World Bank Group.

- . 2017a. *Global Economic Prospects: A Fragile Recovery*, June. Washington, DC: World Bank.
- . 2017b. "Jobs in Global Value Chains." Jobs Notes No. 1, World Bank, Washington, DC.
- . 2019. "Jobs and Economic Transformation (JET): Drivers, Policy Implications and World Bank Group Support." World Bank, Washington, DC.
- . 2020a. *Africa's Pulse*, no. 21. Washington, DC: World Bank.
- . 2020b. *The African Continental Free Trade Area: Economic and Distributional Effects*. Washington, DC: World Bank.
- . 2020c. *Boosting Productivity in Sub-Saharan Africa*. Washington, DC: World Bank.
- . 2020d. "COVID-19 Crisis through a Migration Lens." Migration and Development Brief 32, World Bank, Washington, DC.
- . 2020e. "Ethiopia COVID-19 Response Emergency Development Policy Financing." Washington, DC: The World Bank.
- . 2020f. "Getting the Competition Game Right in Mobile Communications and Radio Spectrum in West Africa." World Bank, Washington, DC.
- . 2020g. *Industrialization for Jobs*. Washington, DC: World Bank.
- . 2020h. "Jobs and Economic Transformation – JET in the time of COVID." World Bank, Washington, DC.
- . 2020i. "Nigeria COVID-19 Federal Fiscal and Economic Response Development Policy Financing." World Bank, Washington, DC.
- . 2020j. *Poverty and Shared Prosperity Report*. Washington, DC: World Bank.
- . 2020k. "Regulatory Watch Initiative (RWI) Phase 2 Report Task 1: Thorough Legal, Regulatory and Competitive Analyses of Issues Related to Licensing, OTTs, International Gateways, Spectrum Management and Regulatory Governance." World Bank, Washington, DC.
- . 2020l. "South Africa COVID-19 Response Development Policy Operation." World Bank, Washington, DC.
- . 2020m. "Understanding Social Contracts in Sub-Saharan Africa." World Bank, Washington D.C.
- . 2020n. "World Bank Response to COVID-19." Digital Development Global Practice, World Bank, Washington, DC.
- . 2020o. *World Development Report 2020: Trading for Development in the Age of Global Value Chains*. Washington, DC: World Bank.
- . 2020p. *Senegal Digital Sources of Growth*. Washington, DC: World Bank.
- Xu, Jiayun, and Qilin Mao. 2018. "On the Relationship between Intermediate Input Imports and Export Quality in China." *Economics of Transition & Institutional Change* 26 (3): 429–67.

*This report was produced by the Office of the
Chief Economist for the Africa Region.*

www.worldbank.org/africaspulse

