SUB-SAHARAN AFRICA

Growth in Sub-Saharan Africa moderated to a slower-than-expected 2.4 percent in 2019. Activity was dampened by softening external demand, heightened global policy uncertainty, and falling commodity prices. Domestic fragilities in several countries further constrained activity. Growth is projected to firm to 2.9 percent in 2020 and strengthen to 3.2 percent in 2021-22—notably weaker than previous projections. The growth pickup is predicated on improving investor confidence in some large economies, a strengthening cyclical recovery among industrial commodity exporters along with a pickup in oil production, and robust growth among several exporters of agricultural commodities. Nonetheless, these growth rates will be insufficient to make significant progress in reducing poverty in many countries in the region, highlighting the need for lasting improvements in labor productivity to bolster growth over the medium term. Downside risks to the outlook include a sharper-than-expected deceleration in major trading partners; increased investor risk aversion and capital outflows triggered by elevated debt burdens; and growing insecurity.

Recent developments

The feeble economic recovery in Sub-Saharan Africa has lost momentum, with growth in 2019 estimated to have edged down to 2.4 percent, from 2.6 percent in 2018. This was a weaker pace than anticipated in June (Figure 2.6.1.A). Intensifying global headwinds such as decelerating activity in major trading partners, elevated policy uncertainty, and falling commodity prices, have been compounded by domestic fragilities in several countries.

In Angola, Nigeria, and South Africa—the three largest economies in the region—growth was subdued in 2019, remaining well below historical averages and contracting for a fifth consecutive year on a per capita basis. Activity in Nigeria was lackluster, as both macroeconomic policy and the business environment remain unconducive to strong domestic demand. Growth in 2019 is estimated to have remained broadly unchanged at 2 percent, as the agricultural sector continued to underperform due to lingering insurgency in the Northeast and farmers-herdsmen clashes, while unreliable electricity supply constrained manufacturing activity. Some of this weakness was, however, offset by increased oil production.

In South Africa, growth remained anemic in 2019 as it fell to an estimated 0.4 percent. Weak growth momentum has reflected an array of overlapping constraints. These include persistent policy uncertainty, constrained fiscal space, subdued business confidence, infrastructure bottlenecks—especially in electricity supply—and weakening external demand, particularly from the Euro Area and China. In addition, financial stresses at the public energy utility have worsened the government budget balance and raised debt sustainability concerns, weighing further on sentiment (Figure 2.6.1.B).

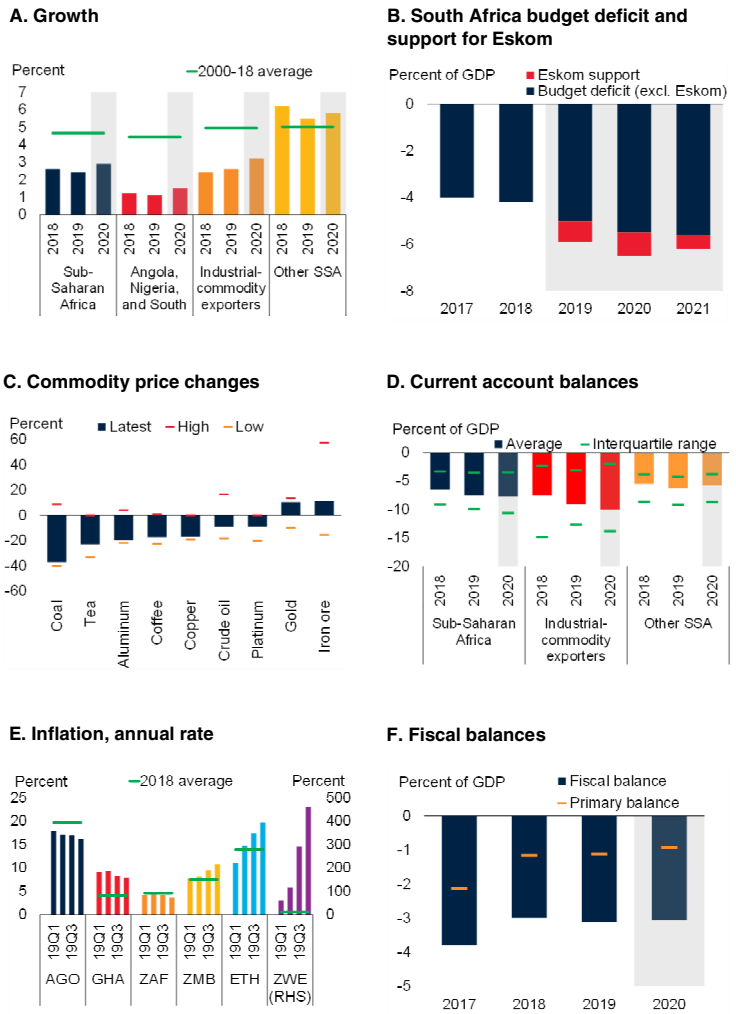
Activity in Angola is estimated to have contracted by 0.7 percent in 2019, as oil output declined for the fourth consecutive year due to lower yields from aging fields and postponed investment in new capacity. Nonetheless, growth in the non-oil sector strengthened further as several key reforms continued to improve the business environment.

In Sudan, the fourth largest economy in the region, political instability, alongside an ongoing currency crisis, has caused activity to contract

Note: This section was prepared by Rudi Steinbach. Research assistance was provided by Jankeesh Sandhu.

FIGURE 2.6.1. SSA: Recent developments

The recovery in Sub-Saharan Africa has stalled, as intensifying global headwinds have compounded domestic weakness in several economies. In South Africa, power cuts and financial stress constrained growth and worsened fiscal deficits. More broadly, lower commodity prices are weighing on activity in commodity exporters and contributing to deteriorating current account balances. Inflation has been mostly subdued—helped in part by lower oil prices. Persistent budget deficits have partly reflected weaker commodity revenues and growing interest burdens.



Source: Haver Analytics; National Treasury, Republic of South Africa; *World Economic Outlook*, International Monetary Fund; World Bank; World Bank Pink Sheet; Zimbabwe National Statistics.
Note: "Industrial-commodity exporters" represents oil and metal exporting countries. "Other SSA" includes agricultural commodity exporting and commodity importing countries.
A. Aggregate growth rates calculated using GDP weights at 2010 prices and market exchange rates. "Industrial-commodity exporters" excludes Angola, Nigeria, and South Africa.
B. Eskom is the South African public energy utility. Years represent fiscal years; for example, the year 2017 is the 2017/18 fiscal year.
C. Bars represent the percentage change in the November 2019 monthly price relative to January 2018. "High" and "Low" represent the respective peaks and troughs of price changes, in percent, since January 2018.
D. Unweighted averages of country groupings.
E. AGO = Angola, GHA = Ghana, ZAF = South Africa, ZMB = Zambia, ETH = Ethiopia, ZWE = Zimbabwe. 2019Q4 reflects the average of October and November.
F. Unweighted averages.
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sharply. However, the formation of a three-year interim government to oversee the country's transition to democracy helped improve stability in the second half of last year.

Beyond the large economies, growth deteriorated in several industrial commodity exporters in 2019 as weaker prices and softer demand dampened activity in extractives sectors (Democratic Republic of Congo, Liberia, Namibia; Figure 2.6.1.C). In contrast, growth accelerated in some countries as investments in new oil and mining capacity boosted activity (Ghana, Guinea, Mauritania).

Among exporters of agricultural commodities, growth rates have been more robust, notwithstanding some mild slowdowns. Estimates for 2019 indicate that growth averaged in excess of 5 percent, as sustained public investment in infrastructure continued to support activity (Togo, Uganda). Yet, growth softened in some other countries as decelerating external demand and lower commodity prices constrained export revenues (Madagascar, Rwanda). In others, agricultural production suffered from severe drought (Senegal, Zimbabwe), or late rains (Kenya). Zimbabwe also suffered a sharp rise in inflation that continued to squeeze real incomes, resulting in a large contraction in economic activity, estimated at 7.5 percent. Activity has been further constrained by persistent shortages of food, fuel, electricity, and foreign exchange.

Current account deficits are estimated to have widened, on average, across the region (Figure 2.6.1.D). In several countries, capital imports related to large infrastructure projects underpinned deficits (Mauritania, Mozambique, Niger, Uganda). In others, weaker export performances, due to softening external demand and lower commodity prices, were responsible for larger external balances (Angola, Chad, Republic of Congo). In some countries, current account balances improved as a result of import compression due to weak domestic demand (Namibia, South Africa, Zambia). In others, infrastructure improvements and reforms in export-oriented industries led to increased exports and an improved trade balance (Burkina Faso, Côte d'Ivoire). Current account financing was

more challenging for most of 2019, as growing concerns over global growth prospects and heightened trade tensions weighed on investor sentiment and capital inflows. Eurobond issuances during the first ten months of 2019 were down by one-third compared to the same period in 2018.

Inflation continued to moderate in most of the region last year, partly reflecting lower oil prices as well as earlier monetary policy tightening in some countries (Figure 2.6.1.E). This allowed authorities in several countries to adopt more accommodative monetary policy stances (Angola, Botswana, Kenya, Mauritius, Mozambique, Namibia, South Africa). In some countries, however, inflation accelerated amid rising food prices (Ethiopia, Zambia, Zimbabwe) and exchange rate pressures (Zambia, Zimbabwe).

Large and persistent budget deficits have reflected growing interest burdens, as well as weaker commodity revenues among industrial-commodity exporters and sustained public investment among exporters of agricultural commodities (Figure 2.6.1.F). In several countries, budget balances have improved due to a combination of fiscal discipline, more efficient domestic resource mobilization, tax administration reforms, and reforms of energy subsidies (Benin, Cabo Verde, Cote d'Ivoire, Gabon, Mali, Sierra Leone).

Outlook

Growth in the region is expected to firm to 2.9 percent in 2020, and accelerate further to an average of 3.2 percent in 2021-22 (Figure 2.6.2.A). The pickup assumes that investor confidence improves in some large economies, that energy bottlenecks ease, that a pickup in oil production contributes to a cyclical recovery among industrial commodity exporters, and that robust growth continues among exporters of agricultural commodities. However, the forecast for 2020-22 is 0.4 percentage point lower than previously projected, reflecting weaker demand from key trading partners, lower commodity prices, and adverse domestic developments in several countries.

On a per capita basis, the outlook translates into Sub-Saharan Africa growth of 0.3 percent in 2020, firming to an average of 0.7 percent in 2021-22. In the projection, per capita incomes rise by more than 4 percent per year in several countries that, together, account for one-tenth of the region's poor (e.g., Côte d'Ivoire, Ethiopia, Rwanda, Senegal). However, per capita incomes contract among some of the largest economies that account for one-third of the region's poor (Angola, Nigeria, Sudan). Projected per capita growth for the region is insufficient to yield significant progress in poverty alleviation. Lasting improvements in labor productivity are needed to bolster growth over the medium term (Box 2.6.1; Figure 2.6.2.B).

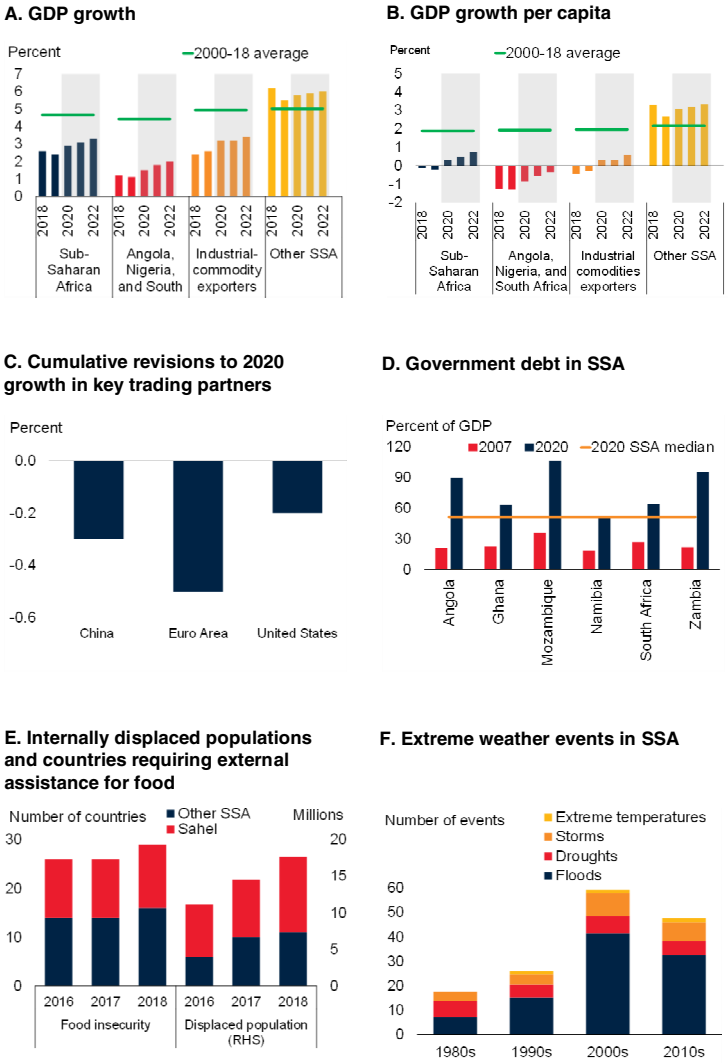
Growth in Nigeria is expected to remain subdued. The macroeconomic framework—characterized by multiple exchange rates, foreign exchange restrictions, high persistent inflation, and a central bank targeting manifold objectives—does not provide a firm anchor for confidence. Growing uncertainty about the direction of government policies is expected to further dampen the outlook. Growth is projected to remain broadly unchanged, rising only to an average of 2.1 percent in 2020-22. This is weaker than previous projections, reflecting softer external demand, lower oil prices, and a slower-than-previously-expected improvement in oil production in view of the lack of much-needed reforms.

In South Africa, growth is expected to firm to 0.9 percent in 2020, before strengthening to an average of 1.4 percent in 2021-22. This assumes that the new administration's structural reform agenda gathers pace, that policy uncertainty wanes, and that investment—both public and private—gradually recovers. The outlook is, however, markedly weaker than previous projections. Increasingly binding infrastructure constraints—notably in electricity supply—are expected to inhibit domestic growth, while export momentum will be hindered by weak external demand.

Growth in Angola is projected to rise to 1.5 percent in 2020 and to average 2.7 percent in 2021-22. This projection assumes that ongoing structural reforms—supported by prudent monetary policy and fiscal consolidation—provide greater macroeconomic stability, continue to

FIGURE 2.6.2 SSA: Outlook and risks

Growth in the region is projected to firm somewhat as investor confidence in some of the large economies improves and oil production in major oil exporters picks up, while activity among exporters of agricultural commodities remains solid. Per capita growth, however, will remain below 1 percent. Several downside risks could materialize, including slower-than-expected growth in major trading partners, episodes of financial stress given rising debt vulnerabilities, and disruptions to activity amid increased displacement of populations and growing climate risks.



Source: The Emergency Events Database; Université Catholique de Louvain; United Nations Food and Agricultural Organization; United Nations High Commissioner for Refugees (UNHCR); World Bank; *World Economic Outlook*, International Monetary Fund.

A.-B. Aggregate growth rates calculated using GDP weights at 2010 prices and market exchange rates. "Industrial-commodity exporters" excludes Angola, Nigeria, and South Africa.

C. Cumulative revisions to the 2020 growth forecasts since the June 2018 *Global Economic Prospects* report.

D. "2020 SSA median" reflects the median of 47 countries.

E. "Food insecurity" reflects countries in SSA requiring external assistance for food. These countries are expected to lack the resources to deal with reported critical problems of food insecurity. The sample includes countries with a lack of food availability, widespread lack of access to food, or severe but localized problems. "Displaced population" reflects only internally displaced populations (IDPs) who are protected or assisted by UNHCR. These are also not necessarily representative of the entire IDP population in a given country.

F. Data reflect annual averages of extreme weather events in SSA as of October 31, 2019.

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improve the business environment and bolster private investment. In particular, recently announced oil-sector reforms are expected to support a recovery in oil production.

Elsewhere in the region, growth is forecast to strengthen, stabilizing just below 5 percent in 2021-22. In the West African Economic and Monetary Union (WAEMU), growth is expected to average 6.7 percent. Among the region's exporters of agricultural commodities, sustained strong public infrastructure spending, combined with increased private sector activity (Madagascar, Rwanda, Uganda), or continued reforms to raise the productivity and competitiveness of export-oriented sectors (Burkina Faso, Côte d'Ivoire), will continue to support output. In Kenya, growth is expected to remain solid, but soften somewhat as accommodative monetary policy does not fully offset the impact of a fiscal tightening.

In contrast, the ongoing cyclical recovery among oil and metals exporters will be more sluggish, reflecting weaker external demand and softer commodity prices. In some countries, growth is projected to moderate somewhat over the forecast, in part due to slowing resource production (Democratic Republic of Congo, Ghana). Activity in Ghana—the region's fifth largest economy—is expected to soften from the 7 percent growth of 2019 partly due to slowing oil production as much-needed maintenance on various oil fields is carried out to ensure their long-term viability. Longer-term growth prospects will, however, be supported by the improved strength of the financial sector following much-needed reforms implemented during 2018-19. Despite the global headwinds, investments in new oil and mining capacity are expected to support faster growth in several oil and metals exporters (Botswana, Cameroon, Chad, Guinea, Mozambique, Namibia). In Sudan, the business climate is expected to improve if tensions continue their recent easing during the 3-year political transition.

Risks

The balance of risks for Sub-Saharan Africa is firmly to the downside. A sharper-than-expected deceleration in major trading partners such as

China, the Euro Area, or the United States, would substantially lower export revenues and investment. Together these economies account for 40 percent of the region's goods exports and one-third of FDI inflows, and their growth prospects continue to be downgraded (Figure 2.6.2.C). China, in particular, accounts for one-half of global metals demand and one-quarter of global oil demand (World Bank 2018o). A faster-than-expected slowdown in China would cause a sharp fall in commodity prices and, given Sub-Saharan Africa's heavy reliance on extractive sectors for export and fiscal revenues, weigh heavily on regional activity.

Government debt in the region is expected to reach 62 percent of GDP, on average, in 2020, up from its trough of 39 percent of GDP in 2011. This broad-based rise in government debt has led to sharp increases in interest burdens, crowding out non-interest expenditure and raising concerns about debt sustainability. Countries with elevated debt burdens are susceptible to sudden increases in investor risk aversion (Angola, Ghana, Mozambique, Namibia, South Africa, Zambia; Figure 2.6.2.D). This can lead to sizable currency depreciations, capital outflows, and increases in borrowing costs as risk premia rise sharply. Where debt is largely denominated in foreign currency, sharp currency depreciations would make servicing debt more challenging.

Ballooning debt burdens of state-owned enterprises represent substantial contingent liability risks in several countries (Ethiopia, Ghana, South Africa, The Gambia); materialization of these risks could damage already-fragile fiscal outlooks (Bachmair and Bogoev 2018; Bova et al. 2016). In addition to raising fiscal sustainability concerns, economic activity can be directly affected by potential disruptions at state-owned enterprises, particularly if they provide essentials such as electricity. Some countries are, however, implementing reforms to improve the functioning of state-owned enterprises and to alleviate their government's exposure to contingent liabilities (Ethiopia, Ghana, The Gambia).

Insecurity, conflicts, and insurgencies—particularly in the Sahel—would weigh on economic activity and food security in several economies (Burkina Faso, Chad, Ethiopia, Mali, Niger, Nigeria), if they were to intensify further or spread geographically (Figure 2.6.2.E; FAO 2019; UNHCR 2019). Moreover, the large populations that are forcibly displaced by these conflicts cluster in areas that often become a source of further instability, with poverty rates being worse than in their places of origin (Beegle and Christiaensen 2019).

Extreme weather events are becoming more frequent as the climate changes, posing a significant downside risk to activity due to the disproportionate role played by agriculture in many economies in the region (Figure 2.6.2.F). The devastation caused by the tropical cyclones that hit low-income countries in East and Southern Africa in 2019 bear testimony to this, as do persistent drought conditions, particularly in the Sahel and Southern Africa. As droughts continue to suppress agricultural output, they increase food insecurity, raise food price inflation, exacerbate poverty levels, and often contribute to forced displacement of populations (IPCC 2019).

TABLE 2.6.1 Sub-Saharan Africa forecast summary

(Real GDP growth at market prices in percent, unless indicated otherwise)

	2017	2018	2019e	2020f	2021f	2022f	Percentage point differences from June 2019 projections 2019e	2020f	2021f
EMDE SSA, GDP[1]	**2.7**	**2.6**	**2.4**	**2.9**	**3.1**	**3.3**	**-0.5**	**-0.4**	**-0.4**
(Average including countries with full national accounts and balance of payments data only)[2]									
EMDE SSA, GDP[2,3]	2.7	2.6	2.5	2.9	3.1	3.3	-0.4	-0.4	-0.4
GDP per capita (U.S. dollars)	-0.1	-0.1	-0.2	0.3	0.5	0.7	-0.4	-0.4	-0.4
PPP GDP	2.9	2.8	2.7	3.1	3.3	3.5	-0.4	-0.4	-0.4
Private consumption	2.5	2.4	2.1	2.6	2.8	2.8	-0.1	-0.1	0.0
Public consumption	1.2	2.5	2.7	2.4	2.5	2.6	0.1	-0.1	-0.2
Fixed investment	4.5	6.2	3.1	3.1	4.1	5.5	-2.8	-3.0	-2.6
Exports, GNFS[4]	6.1	3.1	1.6	1.5	2.6	3.0	-0.7	-1.6	-0.4
Imports, GNFS[4]	1.0	5.9	2.4	2.5	3.1	3.6	-0.6	-0.9	-0.6
Net exports, contribution to growth	1.5	-0.7	-0.2	-0.3	-0.1	-0.1	0.0	-0.2	0.1
Memo items: GDP									
SSA excluding Nigeria, South Africa, and Angola	4.8	4.4	4.1	4.6	4.7	4.8	-0.5	-0.3	-0.3
Oil exporters[5]	1.5	1.4	1.7	2.3	2.3	2.4	-0.4	-0.2	-0.3
CFA countries[6]	3.5	4.2	4.6	5.1	5.2	5.2	-0.4	0.1	0.1
CEMAC	0.0	1.4	2.3	3.3	3.4	2.9	-0.8	0.2	0.1
WAEMU	6.6	6.6	6.4	6.4	6.5	6.9	-0.2	-0.1	0.0
SSA3	1.0	1.2	1.1	1.5	1.8	2.0	-0.5	-0.5	-0.4
Nigeria	0.8	1.9	2.0	2.1	2.1	2.1	-0.1	-0.1	-0.3
South Africa	1.4	0.8	0.4	0.9	1.3	1.5	-0.7	-0.6	-0.4
Angola	-0.1	-1.2	-0.7	1.5	2.4	3.0	-1.7	-1.4	-0.4

Source: World Bank.

Note: e = estimate; f = forecast. EMDE = emerging market and developing economies. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries' prospects do not differ at any given moment in time.

1. GDP and expenditure components are measured in 2010 prices and market exchange rates. Excludes Central African Republic, São Tomé and Príncipe, Somalia, and South Sudan.
2. Subregion aggregate excludes Central African Republic, São Tomé and Príncipe, Somalia, and South Sudan, for which data limitations prevent the forecasting of GDP components.
3. Subregion growth rates may differ from the most recent edition of Africa's Pulse (https://www.worldbank.org/en/region/afr/publication/africas-pulse) due to data revisions and the inclusion of the Central African Republic and São Tomé and Principe in the subregion aggregate of that publication.
4. Exports and imports of goods and non-factor services (GNFS).
5. Includes Angola, Cameroon, Chad, Republic of Congo, Gabon, Ghana, Nigeria, and Sudan.
6. Includes Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Mali, Niger, Senegal, and Togo.

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TABLE 2.6.2 Sub-Saharan Africa country forecasts[1]

(Real GDP growth at market prices in percent, unless indicated otherwise)

	2017	2018	2019e	2020f	2021f	2022f	Percentage point differences from June 2019 projections 2019e	2020f	2021f
Angola	-0.1	-1.2	-0.7	1.5	2.4	3.0	-1.7	-1.4	-0.4
Benin	5.8	6.7	6.4	6.7	6.7	6.7	-0.1	0.2	0.2
Botswana	2.9	4.5	4.0	4.1	4.2	4.2	-0.2	0.2	0.2
Burkina Faso	6.3	6.8	6.0	6.0	6.0	6.0	0.0	0.0	0.0
Burundi	0.5	1.6	1.8	2.0	2.1	2.2	0.0	-0.1	0.1
Cabo Verde	3.7	5.1	5.0	5.0	5.0	5.0	0.6	0.4	0.3
Cameroon	3.5	4.1	4.0	4.2	4.3	4.5	-0.2	-0.2	-0.3
Chad	-3.0	2.6	3.0	5.5	4.8	4.8	-0.4	-0.1	0.0
Comoros	3.8	3.4	1.7	4.8	3.7	3.6	-1.4	1.6	0.5
Congo, Dem. Rep.	3.7	5.8	4.3	3.9	3.4	3.6	-1.6	-2.6	-3.4
Congo, Rep.	-1.8	1.6	2.2	4.6	1.9	2.4	-3.2	3.1	0.0
Côte d'Ivoire	7.7	7.4	7.3	7.0	7.1	7.1	-0.1	-0.3	-0.2
Equatorial Guinea	-4.7	-6.1	-4.3	-2.3	1.0	-4.8	-2.1	-0.4	2.8
Eswatini	2.0	2.4	1.3	2.6	2.5	2.5	0.2	1.0	0.8
Ethiopia[2]	10.0	7.9	9.0	6.3	6.4	7.1	1.1	-1.9	-1.8
Gabon	0.5	0.8	2.9	3.0	3.2	3.3	0.1	-0.7	-0.7
Gambia, The	4.8	6.6	6.0	6.3	5.8	5.5	0.6	1.1	0.8
Ghana	8.1	6.3	7.0	6.8	5.2	4.6	-0.6	-0.2	-0.6
Guinea	10.0	5.8	5.9	6.0	6.0	6.0	0.0	0.0	0.0
Guinea-Bissau	5.9	3.8	4.6	4.9	5.0	5.0	0.3	0.1	-0.5
Kenya	4.9	6.3	5.8	6.0	5.8	5.8	0.1	0.1	-0.2
Lesotho	-0.4	1.5	2.6	0.7	2.1	2.8	1.1	0.3	-2.0
Liberia	2.5	1.2	-1.4	1.4	3.4	4.2	-1.8	-0.2	2.1
Madagascar	4.3	5.1	4.7	5.3	4.4	5.0	-0.5	0.0	-0.7
Malawi	4.0	3.5	4.4	4.8	5.2	5.3	-0.1	0.1	0.1
Mali	5.3	4.7	5.0	5.0	4.9	4.9	0.0	0.1	0.1
Mauritania	3.0	3.6	6.4	5.7	5.8	8.7	-0.3	-0.1	-0.2
Mauritius	3.8	3.8	3.9	3.9	4.0	4.0	0.0	0.0	0.5
Mozambique	3.7	3.4	2.0	3.7	4.2	4.4	0.0	0.2	0.0
Namibia	-0.9	-0.1	-0.5	0.9	1.7	1.9	-1.4	-0.6	-0.2
Niger	4.9	6.5	6.3	6.0	5.6	11.9	-0.2	0.0	0.0
Nigeria	0.8	1.9	2.0	2.1	2.1	2.1	-0.1	-0.1	-0.3
Rwanda	6.1	8.6	8.5	8.1	8.0	8.0	0.7	0.1	0.5
Senegal	7.1	6.8	6.3	6.8	7.0	7.0	-0.5	-0.2	0.0
Seychelles	4.3	4.1	3.5	3.3	3.3	3.4	0.1	0.3	0.1
Sierra Leone	3.8	3.5	4.8	4.9	4.9	5.0	-0.6	-0.5	-0.3
South Africa	1.4	0.8	0.4	0.9	1.3	1.5	-0.7	-0.6	-0.4
Sudan	4.3	-2.3	-2.6	-1.4	-0.6	0.2	-0.7	-0.1	0.2
Tanzania	6.8	5.4	5.6	5.8	6.1	6.2	0.2	0.1	0.0
Togo	4.4	4.9	5.3	5.5	5.5	5.5	0.3	0.3	0.4
Uganda[2]	3.9	5.9	6.1	6.5	5.9	6.0	0.0	0.0	0.1
Zambia	4.1	3.1	1.8	2.6	2.6	4.0	-0.7	-0.2	-0.2
Zimbabwe	4.7	3.5	-7.5	2.7	2.5	2.8	-4.4	-0.8	-2.4

Source: World Bank.

Note: e = estimate; f = forecast. World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries' prospects do not significantly differ at any given moment in time.

1. GDP and expenditure components are measured in 2010 prices and market exchange rates. Excludes Central African Republic, São Tomé and Príncipe, Somalia, and South Sudan.

2. Fiscal-year based numbers.

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BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers

Since 2013, Sub-Saharan Africa has experienced a broad-based slowdown in labor productivity growth. Productivity growth has all but stalled amid falling commodity prices, weakening external demand, and growing domestic fragilities. In the decade prior to the global financial crisis, productivity growth benefited from strengthening institutions, stronger investment, infrastructure development, improving human capital, and better macroeconomic policy frameworks, but the pace of improvement has stagnated. Productivity in the region is still only one-half of that in EMDEs and roughly one-tenth of that in advanced economies. Ambitious policy efforts will be needed to generate the productivity growth required for per capita incomes in Sub-Saharan Africa to reach those of its EMDE peers, let alone those of advanced economies. To stimulate labor productivity growth, the region needs to implement policies that boost agricultural productivity, increase resilience to climate change, broaden economic diversification, and continue human capital development.

Introduction

In one of the steepest declines of any emerging market and developing economy (EMDE) region, labor productivity growth has slowed sharply in Sub-Saharan Africa (SSA) since the global financial crisis, from about 2.9 percent during the pre-crisis period of 2003-2008 to 0.5 percent during 2013-18 (Figure 2.6.1.1.A). The slowdown was particularly sharp among industrial commodity exporters—exporters of oil and metals account for roughly 80 percent of the region's GDP—whereas productivity growth continued to accelerate among several agricultural commodity exporters.[1] This deceleration returns productivity growth to near its 1990s average (-0.4 percent) and ends a period of solid growth of 2-3 percent throughout the pre-crisis period, when it was supported by a favorable external environment, strengthening institutions, improving human capital, and better macroeconomic policy frameworks.

SSA's productivity levels are low, at around one-half of the EMDE average and 11 percent of the advanced-economy average in 2018 (Figure 2.6.1.1.B). However, if a few high -productivity countries are excluded, SSA's productivity levels are far lower, at a mere 3 percent of the advanced-economy average. At near-nil productivity growth, SSA's productivity levels have now started to further diverge from advanced-economy averages. Among EMDE regions, only the Middle East and North Africa has a slower pace of convergence, but starting from productivity levels that average about four times those of Sub-Saharan Africa. Absent major policy efforts to lift productivity growth, its stagnation offers dim prospects for the nearly 60 percent of the global extreme poor that currently reside in SSA.

Against this backdrop, this box addresses the following questions:

1. How has productivity evolved in the region?
2. What are the factors associated with productivity growth in the region?
3. What policy options are available to boost productivity growth?

This box defines productivity as labor productivity, represented by real GDP per person employed (at 2010 prices and exchange rates). Growth in labor productivity is decomposed into the contributions made by changes in the standard factor inputs (human and physical capital per worker) and the effective use of these inputs, as captured by total factor productivity, assuming a Cobb-Douglas production function. Cross-country comparisons of labor productivity use market exchange rates in 2010 to convert national currency units into U.S. dollars. Data are available for 44 EMDEs in SSA, of which 21 are oil or metals exporters, 19 are exporters of agricultural commodities, and 5 are commodity importers.[2]

Evolution of regional productivity

Robust pre-crisis productivity growth. Productivity growth in SSA started improving in the mid-1990s, as the region recovered from some of the adverse factors that had weighed heavily on activity in the 1980s and early 1990s.[3] Prior to the crisis, productivity growth rose sharply, to 2.9

Note: This box was prepared by Rudi Steinbach, with contributions from Sinem Kilic Celik, and builds upon analysis in Chapter 3. Research assistance was provided by Jankeesh Sandhu and Shijie Shi.

[1] An economy is defined as a commodity exporter when, on average in 2012-14, either (1) total commodities exports accounted for 30 percent or more of total goods exports or (2) exports of any single commodity accounted for 20 percent or more of total goods exports. Economies for which these thresholds are met as a result of reexports are excluded. Commodity importers are economies not classified as commodity exporters.

[2] One country, Chad, is classified as both an oil and an agricultural-commodity exporter.

[3] Adverse developments in the 1980s and early 1990s included a multitude of sovereign debt, banking, and currency crises, debt overhang, low commodity prices, weak investment, and severe conflicts and political instability in several countries (Calderón and Boreux 2016; Reinhart and Rogoff 2009; Straus 2012).

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

percent, on average during 2003-08. Growth was supported by a favorable external environment, including a commodity price boom between 2001-11 that fueled an inflow of foreign capital and unprecedented investment and benefited many of the region's low-income countries (Figure 2.6.1.2.A; Khan et al. 2016; Steinbach 2019; World Bank 2019a). Faster productivity growth was also supported by improvements in education, health care, infrastructure, financial access, and trade openness (Calderón and Servén 2010; Cole and Neumayer 2006; Shiferaw et al. 2015; World Bank 2018k, 2019z).

In the 2000s, productivity growth in the region's industrial commodity-exporting countries picked up sooner and more sharply than in agricultural commodity exporters and commodity importers. In addition to the higher export revenues brought about by rising commodity prices, oil and metal exporting countries benefited from substantial investments in commodity production and exploration (Khan et al. 2016; Schodde 2013). The productivity growth pick-up in industrial-commodity exporters was also driven by country-specific developments. In South Africa—the region's largest metal exporter—productivity growth accelerated sharply after the country's transition to democracy in 1994, thanks in part to improving policy frameworks, increased trade openness and foreign capital inflows (Arora 2005; Du Plessis and Smit 2007). By the mid-2000s, the more than 20 percent decline in productivity during the final decade of Apartheid had been fully reversed.

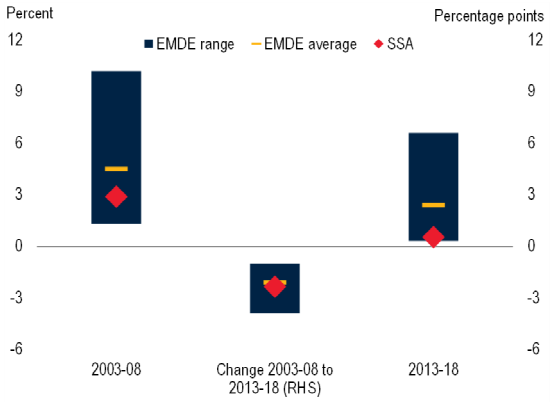
Stalling post-crisis productivity. Since the global financial crisis, productivity growth has fallen sharply in SSA, to near-nil (0.5 percent) on average during the post-crisis period (2013-18). Productivity growth slowed in a broad range of economies, with post-crisis productivity growth falling below its pre-crisis average in over 60 percent of countries. Oil- and metal-exporting countries experienced the steepest slowdowns amid the commodity price slump of 2014-16, as productivity growth fell to 0 percent in the post-crisis period, from 3.2 percent growth pre-crisis.

Post-crisis productivity growth in agricultural commodity-exporters and commodity importers was more resilient, particularly among the former for whom it strengthened to 2.3 percent. Despite the sharp fall in agricultural commodity prices during the commodity price slump—albeit less severe than the drop in industrial commodity prices—sustained productivity growth was supported by improving macroeconomic policy frameworks, investment in infrastructure, and continuous efforts to improve business environments. Doing Business rankings improved

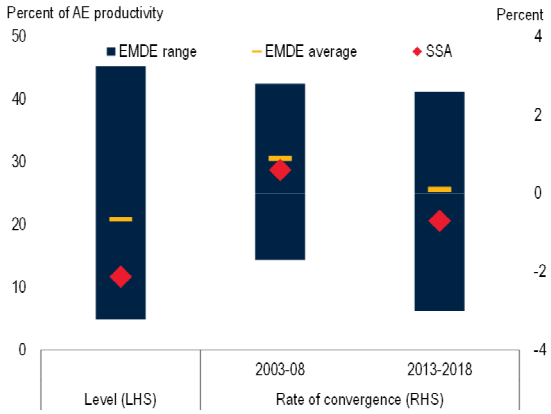
FIGURE 2.6.1.1 Productivity in SSA in regional comparison

Productivity growth in Sub-Saharan Africa (SSA) rose sharply in the pre-crisis period, reflecting a favorable external environment and improvements in key drivers of productivity. Stronger productivity growth also allowed a large productivity gap between advanced economies and SSA EMDEs to narrow slightly over this period. Since then, productivity growth in the region has slowed sharply. At near-zero productivity growth, the region's productivity levels have, on average, diverged from advanced economy levels during the post-crisis period.

A. Productivity growth



B. Productivity gap and convergence



Source: Penn World Table; The Conference Board; *World Development Indicators*, World Bank.

Note: Unless specified otherwise, productivity is defined as labor productivity, (real GDP per person employed).

A. Sample includes range and simple average for the 127 EMDEs and simple average for 44 Sub-Saharan Africa countries.

B. Sample includes 35 advanced economies (AE) and 127 EMDEs. Rate of convergence is calculated as the difference in productivity growth rates over the log difference in productivity levels between SSA and advanced economies. Blue bars and orange dashes show the range and average of the six EMDE regional aggregates. "Level" of productivity refers to the GDP-weighted average of regional productivity as a share of the average advanced economy during 2013-2018.

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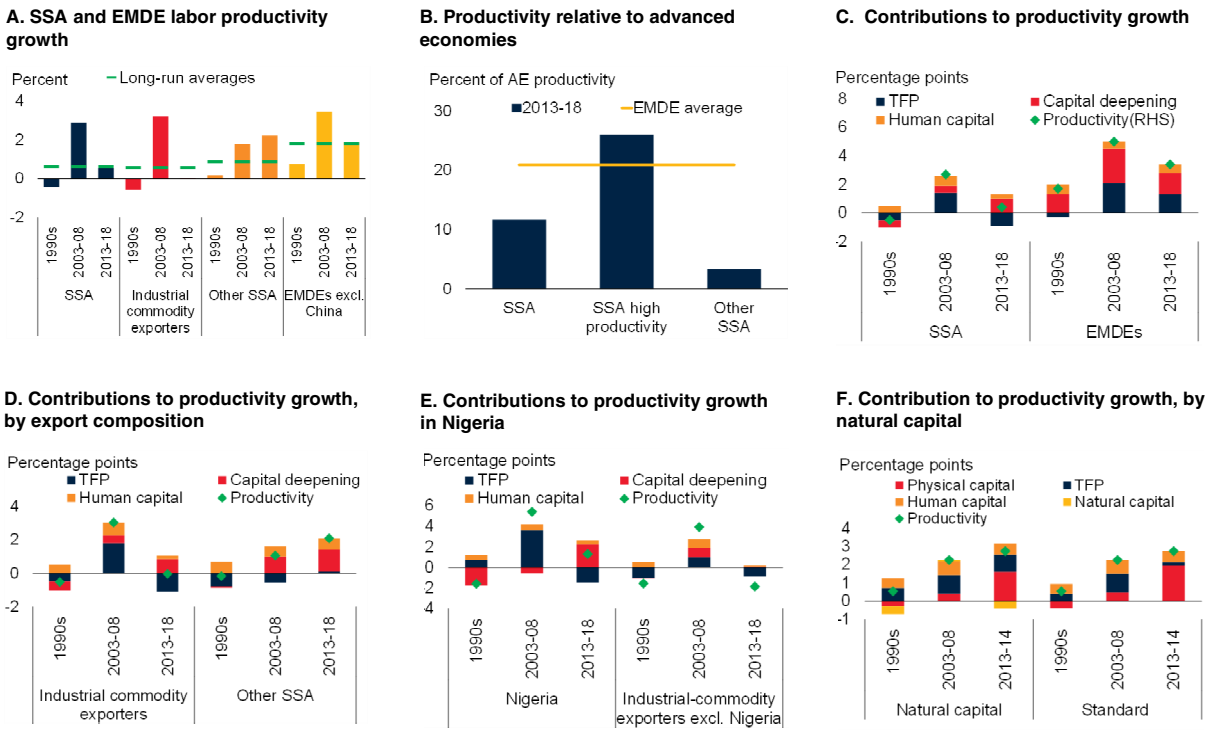
BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

FIGURE 2.6.1.2 Evolution of labor productivity growth in SSA

The sharp slowdown in SSA's productivity growth relative to the pre-crisis period is concentrated among exporters of industrial commodities, in part reflecting the commodity-price slump of 2014-16. Excluding five high-productivity countries, productivity levels in the region are, on average, 3 percent that of advanced economies. Rapid productivity growth between the 1990s and 2008 reflected improvements in human capital, the deepening of physical capital, as well as a rise in total factor productivity (TFP). Following the commodity price slump, TFP slowed sharply among industrial-commodity exporters. Among exporters of agricultural commodities, capital deepening has reflected continued investment in infrastructure. TFP has contracted in recent years, mostly among industrial-commodity exporters. However, the fall in TFP was likely less severe when the contribution from slowing extraction of natural capital is accounted for.



Source: Penn World Table; *Wealth Accounting*, World Bank.

Note: Unless specified otherwise, productivity is defined as labor productivity (real GDP per person employed).

A. Aggregate growth rates calculated using GDP weights at 2010 prices and market exchange rates. Dashed lines indicate average long-term labor productivity growth (1981-2018 for SSA; 1990-2018 for EMDEs excl. China). Samples include 44 Sub-Saharan African economies and 126 EMDEs. "Other SSA" includes agriculture exporters and commodity importers.

B. GDP-weighted averages calculated using GDP weights at 2010 prices and market exchange rates. Sample includes 127 EMDEs and 44 Sub-Saharan African economies. "SSA high productivity" includes Equatorial Guinea, Gabon, Mauritius, Seychelles, and South Africa.

C.-F. Aggregate growth rates calculated using GDP weights at 2010 prices and market exchange rates. Samples include 26 Sub-Saharan African economies and 92 EMDEs.

D. "Industrial-commodity exporters" includes metals and oil exporters. "Other SSA" includes agricultural commodity exporters and commodity importers.

F. For comparability, the sample for both the natural and standard decomposition includes 22 countries.

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by three positions in the median agricultural commodity-exporter between the pre- and post-crisis periods, compared to a median deterioration of seven positions among industrial commodity exporters. Several country-specific reasons also helped lift productivity among agricultural commodity exporters. In Rwanda, productivity growth was boosted by continued reforms to strengthen institutions and governance, upgrade infrastructure, increase access to education, and improve the business environment, to attract private investment (World Bank 2019w). In 2018, the country led SSA in its ease of doing business, ranking 29th globally. In Côte d'Ivoire, a return to stability following the end of decade-long civil strife in 2011 has since enabled a sharp rise in productivity, amid increased public investment, recovering foreign direct investment (FDI) inflows, an improving business environment and rising export activity (Klapper, Richmond, and Tran 2013; World Bank 2015c).

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

Low productivity levels. Productivity in SSA is the second-lowest of all EMDE regions, after South Asia. However, if the five most productive economies are excluded (Equatorial Guinea, Gabon, Mauritius, Seychelles, South Africa), SSA has the lowest productivity of all EMDE regions, at 3 percent of the advanced-economy average in 2018 (Figure 2.6.1.2.B). Higher productivity levels in these five economies—at 24 percent of the advanced-economy average—is roughly one-quarter above the EMDE average. It exceeds productivity in other SSA economies, in part due to significant oil wealth (Equatorial Guinea, Gabon), dominant tourism sectors in island states (Mauritius, Seychelles), and a considerably higher capital stock combined with mineral wealth (South Africa). The post-crisis slowdown in productivity growth has dimmed prospects for SSA's continued convergence with advanced economies and other EMDEs. If recent rates of productivity growth persist, less than 5 percent of economies in SSA are on course to halve their productivity gap with advanced economies over the next 40 years.

Post-crisis total factor productivity decline. The post-crisis slowdown in SSA's productivity growth reflected less effective use of factor inputs, as captured by total factor productivity (TFP; Figure 2.6.1.2.C).[4] TFP growth, which accounted for the majority (three-fifths) of productivity growth pre-crisis, plunged from 1.4 percent pre-crisis to -0.9 percent post-crisis in the sharpest deterioration of any EMDE region. Rapid pre-crisis TFP growth, especially in industrial commodity exporters, reflected heavy resource investment and exploration during the commodity boom, large FDI inflows, communication infrastructure improvements (including the increased use of mobile phones), expanded access to finance, and better business climates (Figure 2.6.1.2.D; Aker and Mbiti 2010; Goedhuys, Janz, and Mohnen 2008; Keefer and Knack 2007; Wamboye, Tochkov, and Sergi 2015). The sharp post-crisis decline in TFP was most pronounced in industrial commodity exporters, following the commodity price collapse of 2014-16 and the accompanying collapse in investment, FDI inflows, and exports, compounded by somewhat weaker business environments.[5] In Liberia and Sierra Leone, the post-crisis fall in TFP was exacerbated by the devastating Ebola outbreak of 2014-16 (World Bank 2019x).

In contrast, TFP has remained resilient, or even strengthened, among some exporters of agricultural commodities and commodity importers (Côte d'Ivoire, Kenya, Mauritius, Togo). Agricultural commodity prices fell less steeply, on average, than industrial commodity prices during the 2011-16 commodity price slump, and beneficial terms of trade supported activity among commodity importers. Faster TFP growth in these economies was also underpinned by sustained public investment in infrastructure, continued efforts to improve business environments, and more robust macroeconomic policy frameworks.

Post-crisis acceleration of capital deepening. The contraction in TFP growth offset the post-crisis boost to productivity growth generated from capital deepening. Labor productivity in agricultural commodity exporters benefited from heavy public investment.[6] In Nigeria, investment was fueled by large FDI inflows into the energy, banking, manufacturing, and telecommunications sectors (although investment slowed sharply after 2014 as oil prices collapsed; Figure 2.6.1.2.E; World Bank 2019y). In contrast, investment has fallen sharply in other industrial commodity exporters in SSA—by 7 percentage points of GDP in the median economy—following the 2014-16 commodity price slump, compounding the already slowing TFP growth.

Impact of natural resource extraction on productivity measurement. Natural capital accounts for an economy's natural resources, such as oil, metals, and agricultural land, and is particularly relevant given SSA's commodity reliance. Standard productivity decompositions fold the extraction of natural capital into total factor productivity and, to a lesser extent, physical capital, biasing their estimated contributions to productivity growth (Brandt, Schreyer and Zipperer 2017; Calderón and Cantu 2019; World Bank 2019z). During the pre-crisis commodity

[4] The standard productivity growth decomposition does not explicitly account for the contribution of natural capital as a factor of production. As a result, the TFP estimates produced here are potentially biased as they implicitly include the productivity contribution from natural capital. From a longer-term perspective, World Bank (2019z) finds that the significant difference between productivity in SSA and that of the productivity frontier (United States) largely reflected weak factor accumulation between 1960 and the 1990s, as the index of human capital in SSA relative to that of the United States declined sharply from 1960 to 1980, while the relative accumulation of physical capital remained subdued. In contrast, from 2000, the gap in efficiency (or TFP) became the major contributor to difference in productivity between SSA and the frontier. This TFP gap widened further from 2010 onwards.

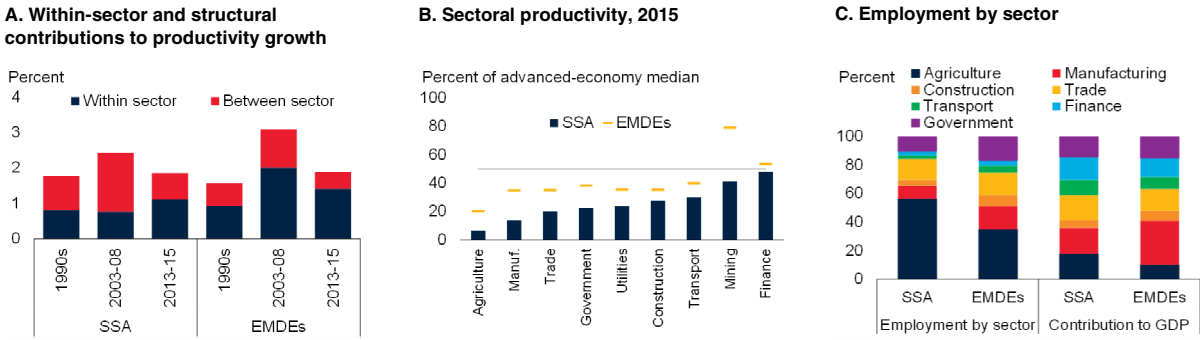
[5] TFP declines have been most severe in oil-exporting Angola, Nigeria, and Chad, as well as in metal-exporting countries such as Botswana, Mozambique, Sierra Leone and South Africa.

[6] Greater fiscal space, partly due to the Multilateral Debt Relief Initiative (MDRI) and Heavily-Indebted Poor Countries (HIPC) initiative, supported increased investment in infrastructure and human capital which resulted in an 18-percentage-point rise in average secondary school enrollment rates from 33 percent in 2000 to 51 percent in 2014.

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

FIGURE 2.6.1.3 Sectoral productivity growth in SSA

The sectoral reallocation of labor in Sub-Saharan Africa has been an important driver of regional productivity growth; however, its contribution has dwindled more recently. Agriculture in SSA has the lowest productivity, while productivity is highest in mining and finance. Low aggregate productivity in the region is partly explained by the agricultural sector's significant contribution to value added, combined with the disproportionate share of employment devoted to the sector.



Source: APO productivity database; de Vries, Timmer, and de Vries 2013; Expanded Africa Sector Database; Groningen Growth Development Center database; Haver Analytics; ILOSTAT; Mensah and Szirmai (2018); Mensah et al. (2018); OECD STAN; United Nations; World Bank; World KLEMS.

Note: Unless specified otherwise, productivity is defined as labor productivity (real GDP per person employed).

A. Growth within sector shows the contribution of initial real value added-weighted productivity growth rate of each sector and 'between sector' effect shows the contribution arising from changes in sectoral employment shares. Median of the county-specific contributions. Sample includes 19 Sub-Saharan African economies and 46 EMDEs.

B. Figure shows the median of country groups. The sample includes 19 SSA economies and 46 EMDEs.

C. Sample includes 19 SSA countries and 46 EMDEs.

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price boom and the accompanying boom in resource exploration and development, the increased extraction of natural capital lifted productivity growth in SSA (Figure 2.6.1.2.F; Khan et al. 2016). However, as the boom ended and commodity prices began to fall, natural capital extraction declined accordingly, and its contribution detracted from overall productivity growth. Data for natural capital is available until 2014, the year the commodity price slide intensified, but well before prices reached their early-2016 troughs. Even during these early years (2013-14), it appears that the post-crisis fall in TFP was likely less severe than the standard decomposition suggests, as the decline in natural capital potentially accounted for a large share of the slowdown in TFP growth from pre-crisis years.[7]

Sources of regional productivity growth

Productivity growth through sectoral reallocation. The post-crisis slowdown in productivity growth from pre-crisis rates reflects slowing gains brought by the reallocation of labor from low-productivity sectors (mostly agriculture) to higher-productivity sectors. In contrast, within-sector productivity growth has continued apace (Figure 2.6.1.3.A).[8]

Productivity has differed widely across sectors in SSA (Figure 2.6.1.3.B). Productivity in agriculture—the least productive sector that employs more than half of the workforce and accounts for 18 percent of GDP—is between 4 and 7 percent of the productivity in mining and finance, the two most productive sectors at the nine-sector level (Figure 2.6.1.3.C).[9] Relative to the wider EMDE sample, agricultural productivity in SSA is about three times lower, on average. Low agricultural productivity in SSA reflects the prevalence of subsistence farming, sub-optimal crop selection, poor land quality amid unfavorable climates, limited uptake of modern technologies and production methods to improve yields, and small farm sizes (Adamopoulos and Restuccia 2014, 2018; Caselli 2005; Sinha and Xi 2018). Moreover, the use of price

[7] Direct comparisons between the standard decomposition and that including natural capital are complicated by the smaller country sample in the natural capital decomposition, as it includes 22 countries (72 percent of SSA GDP) compared to 26 countries (83 percent of SSA GDP) in the standard decomposition. Furthermore, the decline in natural capital may capture a lower valuation of the stock of natural capital.

[8] Sectoral productivity data are available for only about half the SSA economies with data for aggregate productivity.

[9] The sample includes 19 SSA economies at the nine-sector level.

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

controls—a widespread practice across particularly low-income countries in the region—often distort the allocation of resources and inputs in agricultural sectors and weigh further on productivity by adversely affecting incentives to invest in human capital or adopt modern technologies and production methods (Special Focus 1; Chen 2017; Chen and Restuccia 2018; World Bank 2019z). The agricultural sector's significant contribution to value added, combined with the disproportionate share of employment devoted to the sector, helps explain SSA's low aggregate productivity relative to other EMDE regions.

Pre-crisis, sectoral reallocation accounted for more than half of aggregate productivity growth as labor moved from agriculture to services sectors and, to a lesser extent, manufacturing (Chapter 3; Enache, Ghani, and O'Connell 2016; Haile 2018; Rodrik 2016b). This process was facilitated by rapid urbanization as the urban share of population rose by 5 percentage points, to 39 percent, between 2000 and 2010. Since the crisis, however, the sectoral reallocation of labor to more productive sectors has slowed. As growth in commodity-exporting economies fell sharply during the commodity price slump of 2014-16, construction stalled, consumption eased, and credit contracted. Real-income losses in industrial sectors spilled over to weaker demand in the broader economy. As a result, services sectors were no longer able to absorb as much labor as they did pre-crisis.

Other drivers of productivity growth. Rapid improvements in the key drivers of productivity during the pre-crisis period supported productivity growth until the global financial crisis; however, the pace of improvement has since lost momentum. Productivity drivers with particularly prominent slowdowns in improvements include innovation, gender equality, education, health, trade openness, institutional quality, and investment (Figure 2.6.1.4.A and 2.6.1.4.B). Moreover, SSA continues to lag well behind other EMDEs in most drivers of productivity (Figure 2.6.1.4.C).

Institutional quality and the business environment. Although various aspects of governance and institutional quality improved in the region from the late 1990s into the pre-crisis period, this progress has mostly stalled, and even deteriorated in some instances. On average, business climates have also regressed during the post-crisis period; today, almost two-thirds of SSA countries still rank in the lowest quartile of countries by business climates, and one-half do so for poor governance (Figure 2.6.1.4.D). Poor business climates and governance, as well as distortions caused by price controls, have not only constrained productivity by distorting the efficient allocation of resources, but have also deterred private sector investment (Cirera, Fattal Jaef, and Maemir 2017; World Bank 2019z).

Integration with the global economy. Between the mid-1990s and 2008, the region's openness to trade—that is, the sum of imports and exports relative to the size of the economy—rose 16 percentage points to 81 percent of GDP, helping to boost productivity. However, alongside falling commodity prices and slowing external demand, particularly from China and the Euro Area (the region's two largest trading partners), trade integration has partially unwound in the post-crisis period, with openness falling to 74 percent of GDP by 2017. The region's heavy dependence on commodity extraction sectors manifests in a smaller share of exporting firms compared to the EMDE average (Figure 2.6.1.4.E). Although the share of foreign-owned firms—which are generally more productive than their domestically owned counterparts—is high, such firms tend to cluster in extractives sectors with limited links to other sectors (Figure 2.6.1.4.F; Liu and Steenbergen 2019; World Bank 2018p). SSA's participation in global value chains is mostly limited to exports of raw agricultural commodities and natural resources used as inputs in other countries' exports (World Bank 2019d). Greater manufacturing sector participation in international trade and global value chains has been constrained by the sector's relative lack of international competitiveness, in part due to high productivity-adjusted labor costs (Gelb et al. 2017) and an array of non-tariff barriers, including the region's disadvantageous geography (Christ and Ferrantino 2011; Raballand et al. 2012).

Prospects for productivity growth slowdown. Although wide sectoral productivity differentials offer ample productivity growth potential through sectoral reallocation away from the agriculture sector, headwinds to productivity growth are substantial and expected to persist.

- *Weather-related shocks.* Given agriculture's prominence in economic activity in SSA, climate change presents severe challenges to productivity growth prospects in agricultural sectors as mean temperatures continue to rise and extreme weather events occur more frequently (IPCC 2014; Steinbach 2019; World Bank 2019a, 2019f).

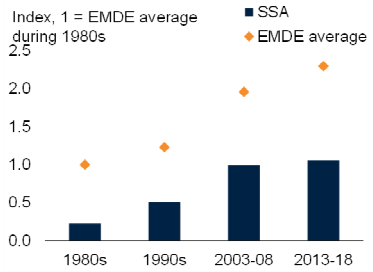
- *Constraints to public investment.* Government indebtedness in SSA has increased sharply since 2013, rising by 20 percentage points, on average, to 60

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

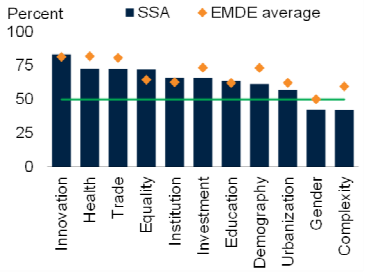
FIGURE 2.6.1.4 Drivers of productivity growth in SSA

Despite significant improvements, key productivity drivers remain significantly below those of advanced economies and EMDEs. Moreover, their pace of improvement has slowed in recent years. On average, business environments in Sub-Saharan Africa are more challenging than in other countries. While the region boasts the largest share of higher-productivity foreign-owned firms, its firms export less than their counterparts in other EMDEs.

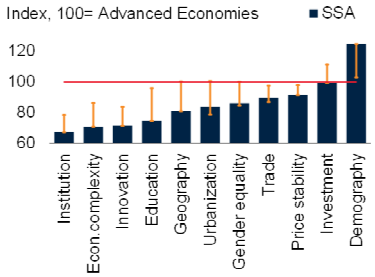
A. Index of productivity growth drivers



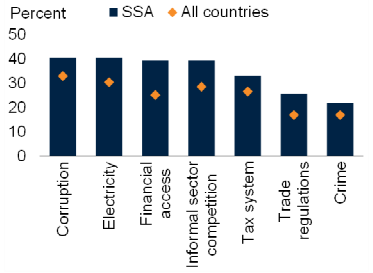
B. Share of SSA economies with slower improvements in drivers 2013-18 relative to 2003-08



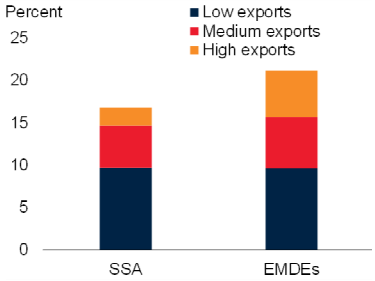
C. Levels of drivers across regions, 2018



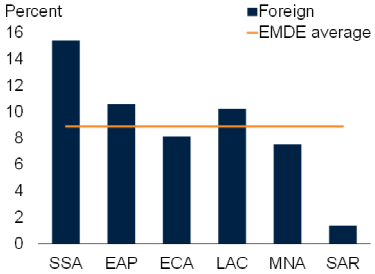
D. Obstacles to doing business



E. Share of exporting firms



F. Ownership status



Source: Penn World Table; United Nations (2015); World Bank (Enterprise Surveys, Wealth Accounting, and World Development Indicators).

Note: Unless specified otherwise, productivity is defined as labor productivity (real GDP per person employed).

A. For each country, index is a weighted average (the normalized coefficients appearing in Annex 3.3) of the normalized value of each driver of productivity. Drivers include the International Country Risk Guide rule of law index, patents per capita, share of non-tropical area, investment as a percent of GDP, ratio of female average years of education to male average years, share of population in urban areas, Economic Complexity Index, years of schooling, share of working-age population, and inflation. See Chapter 3 (Annex 3.3) for details. Regional and EMDE indexes are GDP-weighted averages. Samples include 54 EMDEs and 11 economies in SSA.

B. Blue bars represent share of 48 economies in Sub-Saharan African economies where improvements in each driver of productivity were lower during 2008-17 than in the pre-crisis period 1998-2007, or changes in 2008-17 were below zero. Orange diamond is the corresponding values for 152 EMDE countries. Variables are defined as: Institutions = Government effectiveness; Innovation = patents per capita; Investment = investment to GDP ratio; Income equality = (-1) * Gini; Urbanization = urban population percentage; Economic complexity = Hidalgo and Hausmann (2009)'s Economic Complexity Index; Education = years of schooling; Demography = share of working-age population; and Gender equality = female average years of education divided by male average years. Samples include 26-48 SSA economies, depending on the driver, and 98-151 EMDEs.

C. Unweighted average levels of drivers, normalized as average of advanced economies as 100. Blue bar represents average within SSA. Orange lines represent range of the average drivers for six regions in 2017. Variables corresponding to the concepts are follows: Education = years of education; Urbanization = share of population living in urban area; Investment = share of investment to GDP; Institution = Government Effectiveness; Economic Complexity = Economic Complexity Index+; Geography = share of land area which are outside of tropical region; Gender Equality = Share of the year of schooling for female to male; Demography = share of population under 14; Innovation = Log patent per capita; Trade = Exports + Imports/GDP; and Price stability = (-1)* inflation rate.

D. Unweighted averages. Variables corresponding to the concepts are follows: Corruption = percent of firms identifying corruption as a major constraint; Electricity = Percent of firms identifying electricity as a major constraint; Financial access = percent of firms identifying access to finance as a major constraint; Informal sector competition = percent of firms identifying practices of competitors in the informal sector as a major constraint; Tax system is the average of tax rates (percent of firms identifying tax rates as a major constraint) and tax administration (percent of firms identifying tax administration as a major constraint); Trade regulations = percent of firms identifying customs and trade regulations as a major constraint; Crime = percent of firms identifying crime, theft and disorder as a major constraint.

E. Share of exporting firms. Firms classified as high, medium, and low export more than 75 percent, between 50 and 75, and up to 25 percent of their sales, respectively.

F. Share of firms with foreign ownership.

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BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

percent of GDP in 2019. Reduced fiscal space could weigh on future productivity growth as it will likely constrain investment in productivity-enhancing infrastructure, health, and education as well as research and development. It can also make countries more vulnerable to financial crises (Box 3.4).

- *Commodity-reliance.* Growth prospects for commodity sectors that could encourage capital deepening are dim. Long-term commodity demand growth is expected to moderate as growth in China—the largest source of commodity demand—slows and shifts toward less resource-intensive sectors (World Bank 2018o).

- *High informality.* High informality in the region—around 40 percent of official GDP and 90 percent of total employment—may inhibit faster aggregate productivity growth, as productivity among informal firms are only one-seventh of that in their formal counterparts (La Porta and Shleifer 2014; World Bank 2019f). In addition, much-needed productivity-enhancing government spending is constrained because informal firms do not pay taxes.

Policy options

Coordinated policy efforts are required to achieve stronger productivity growth, notable reductions in extreme poverty, and a narrowing of the significant income gap with the rest of the world. There are four strands of policy options that emerge from the findings of this box.

Improving factors of production

Boosting human capital and leveraging demographic dividends. Improving human capital has been an important source of productivity growth in SSA. Continued investment and increased spending on health care, including greater provision of treatment for highly prevalent conditions such as malaria and HIV/AIDS, could raise productivity of the labor force and life expectancy in general (Figure 2.6.1.5.A; Asiki et al. 2016; Barofsky, Anekwe and Chase 2015; Ferreira, Pessôa and Dos Santos 2011). Increased life expectancy due to improved health care also generates incentives to invest in education (Cervellati and Sunde 2011). In Ethiopia, a rapid decline in fertility rates between 1995-2015, rising incomes, and falling poverty rates reflected an approach combining improvements in education and health, family planning, and increased economic opportunity (World Bank 2019aa). Harnessing the region's potential demographic dividend from declining fertility rates and falling dependency ratios requires policies that support female empowerment, including education, health care, and greater labor market access for women (Figure 2.6.1.5.B; Bloom, Kuhn and Prettner 2017; Groth and May 2017; Kalemli-Ozcan 2003). As the ratio of the young dependent population to the working-age population declines in SSA, resources could be freed up to invest in the health and education of the young, boosting the productivity of the future labor force and spurring per capita growth (Ashraf, Weil and Wilde 2013).

Narrowing the gender gap. Despite some improvements, gender gaps remain large in SSA (World Bank 2012). Although the gender gap in labor force participation has been narrowing, on average, significant gaps in earnings of women relative to men persist. This reflects gender disparity in secondary and tertiary education, differing occupations, and greater time devoted by women to housework and childcare (World Bank 2019aa). Moreover, improvements in the ratio of average years of education of females to males have been slowing in the post-crisis period. This is reflected by lower productivity of females in agriculture, as well as female entrepreneurs—crops tended by women yield one-third less per hectare than those of men, and a similar margin applies to profits earned by female entrepreneurs (Figure 2.6.1.5.C; O'Sullivan et al. 2014; Campos et al. 2019). Policies to empower women and boost their productivity include those promoting skills building beyond traditional training programs, such as a greater focus on developing an entrepreneurial mindset; this approach has been found to lift sales and profits in Togo (Campos et al. 2017, World Bank 2019aa). Other policies include relieving capital constraints faced by females due to lower asset holdings offering limited collateral; and addressing social norms that constrain women's economic opportunities and earnings, such as perceptions about the type of work that is suitable to men or women.

Closing infrastructure gaps. Although capital deepening has continued apace among the region's agricultural commodity exporters and commodity importers, it has slowed considerably among most industrial commodity exporters, and severe infrastructure deficiencies remain throughout the region. Meeting the infrastructure-related Sustainable Development Goals in 2030 will require additional investment spending between 2015-30 of roughly 7 percent of GDP per year in SSA (excluding maintenance spending)—the highest of all EMDE regions (Figure 2.6.1.5.D; Rozenberg and Fay 2019). Stronger productivity growth—through both capital-deepening investment and improved TFP—is contingent on

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

FIGURE 2.6.1.5 Prospects for productivity growth in SSA

Continued improvements in health care could raise life expectancy and the overall productivity of the labor force, as increased life expectancy also generates incentives to invest in education. Sub-Saharan Africa could harness a significant demographic dividend, as falling fertility rates lead to a lower dependency ratio. Owing to limited access to resources and training, crops tended by women yield one-third less per hectare than those of men; a similar margin applies to profits earned by female entrepreneurs. To meet the SDGs by 2030 will require investment spending of about 7 percent of GDP per year. Reducing trade costs in SSA will help accelerate regional and global integration. Conflicts have been rising in the region, particularly acts of violence against civilians.

Source: Armed Conflict Location and Event Data Project database; Campos et al. (2019); O'Sullivan et al. (2014); Rozenberg and Fay (2019); World Bank Doing Business 2020; United Nations.

Note: Unless specified otherwise, productivity is defined as labor productivity (real GDP per person employed).

A. Unweighted averages. "Mortality rate" refers to under-five mortality.

B. The dependency ratio is calculated as the ratio of the population at ages 0–14 plus the population aged 65+ to the population at ages 15–64.

C. Bars for "Entrepreneur profits" show the extent to which profits for male-owned firms exceed those of female-owned firms using data from impact evaluations. Bars for "Agricultural output per hectare" show the extent to which agricultural output per hectare on male-managed plots exceeds that of female-managed plots. Entrepreneur profits in Ghana reflect the average of both the Grants for Micro-Enterprises Survey and the Tailoring Survey; Entrepreneur profits in Nigeria reflect the average of both the Growth and Employment Survey and the Business Plan Competition Survey. Agricultural output per hectare accounts for differences in plot size and geographic factors. Agricultural output in Nigeria reflects a simple average of gaps for northern Nigeria (46 percent) and southern Nigeria (17 percent).

D.E. Bars show average annual spending needs during 2015-30. Estimates are generated using policy assumptions that cap investment needs at 4.5 percent of LMICs' GDP per year. SSA=Sub-Saharan Africa, SAR=South Asia, MNA=Middle East and North Africa, EAP=East Asia and Pacific, LAC=Latin America and the Caribbean.

E. Unweighted averages. Sample includes 156 EMDEs and 47 SSA economies. EMDE average excludes SSA.

F. Sample includes 30 SSA economies. Last observation is November 9, 2019.

Click here to download data and charts.

infrastructure deficiencies being addressed. Access to electricity is a critical obstacle to achieving development goals in SSA, and reforms to improve access in a sustainable manner need to strike a balance between affordable provision for consumers, particularly the poor, and cost recovery for utilities (Blimpo and Cosgrove-Davies 2019; Vorisek and Yu (forthcoming). In addition to closing infrastructure gaps, improvements to the resilience of existing infrastructure are needed to limit frequent disruptions, particularly in power, water and sanitation, transport, and telecommunications (World Bank 2019ab). To ensure public investment is efficient in boosting growth and productivity, it should be supported by adequate public investment management frameworks that encompass strong cash management and procurement processes.

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

Boosting firm productivity

Boosting productivity in agriculture. Given the large share of activity and employment accounted for by agriculture, measures to raise agricultural productivity at the farm level—especially in staple crops—can yield significant development gains (Beegle and Christiaensen 2019). These include ensuring secure land tenures, better access to markets and finance, better crop choices, more effective and increased use of fertilizers, improved irrigation, diffusion and adoption of new technologies, as well as targeted trainings to help small farmers reap the benefits of cutting-edge knowledge and practices specific to the area and product (Chen 2017; Fuglie et al. 2019; Sinha and Xi 2018; World Bank 2019aa). For example, text messages providing advice and reminders to sugarcane farmers in Kenya helped boost fertilizer use and crop yields (Casaburi et al 2014; Fuglie et al. 2019). Ensuring gender equality in access to resources could further boost agricultural productivity; giving women in Malawi and Ghana the same access to fertilizers and other inputs as men could boost maize yields by one-sixth (World Bank 2012). Gains from faster productivity growth in agriculture will free up workers to transition to other, more productive, sectors.

Addressing informality. Although informality is higher in SSA than in other EMDE regions, informal firms often brim with potential—more formal firms in SSA started as informal firms, and this period of transition is found to be shorter than in other EMDEs (World Bank 2019f). Policies to unlock informal firms' potential include upgrading skills of workers, ensuring better access to inputs and resources like financial services, transport and communications connectivity, health services, land and property rights, and product markets (Oosthuizen et al. 2016). Removing barriers to enter the formal sector can further accelerate the transition out of informality: lowering registration costs by half could double the share of formal enterprises through formalization of informal firms and new entrants (Nguimkeu 2015; World Bank 2019aa). Regulatory and institutional reforms to build public trust can strengthen incentives for firms to operate formally. Policies aimed directly at the youth can bolster the prospects of the future workforce and help alleviate youth unemployment. In Rwanda, entrepreneurship has been introduced as a secondary school subject to help prepare the youth to be successful entrepreneurs or to compete in the formal labor market (Choi, Dutz, and Usman 2019).

Leveraging digital technologies. Firm productivity in SSA could also benefit significantly from the proliferation of digital technologies—more so than other regions (Choi, Dutz, and Usman 2019; Hjort and Poulsen 2019). SSA's comparatively low levels of human capital and high degree of informality are ideally suited for the adoption and development of productivity-enhancing, low-skill-biased digital technologies in the agriculture, manufacturing and services sectors. In some countries, the use of digital technologies has been found to boost firm productivity by facilitating process and product innovation (Democratic Republic of Congo, Tanzania; Cirera, Lage, and Sabetti 2016). Digital technologies can also help in banking the unbanked and transform lending in SSA. Kenya's mobile money service, M-Pesa, boosted the financial savings of female-headed households and enabled women to move out of agriculture into more productive sectors (Suri and Jack 2016). Digital loans offered through mobile money platforms are also growing in popularity and may grant financial inclusion to individuals without credit scores or sufficient collateral, as digital loan providers use alternative credit scores based on telecommunications data (Cook and McKay 2015; Francis, Blumenstock, and Robinson 2017; World Bank 2019aa). However, the use of digital credit has so far been largely concentrated in urban areas, at short maturities, and not as investment loans by the rural poor (Björkegren and Grissen 2018).

Accelerating trade openness and global integration. The African Continental Free Trade Area (AfCFTA) has the potential to boost regional trade and bolster firm productivity by facilitating investment, international competitiveness, the transfer of technology and new innovations, and participation in regional and global value chains (Berg and Krueger 2003; Calderon and Cantú 2019; Del Prete, Giovannetti, and Marvasi 2017; Laget et al. 2018; World Bank 2019d). To maximize the potential productivity gains from the free trade area, infrastructure needs to be expanded—particularly transport networks—and business climates improved. In addition, gains from AfCFTA depend on the implementation of trade facilitation measures and addressing of significant non-tariff barriers to trade—trade costs in SSA, such as border and documentary compliance costs, are roughly one-half higher than those of other EMDE regions (Figure 2.6.1.5.E; World Bank 2019d). Currently, most regional trade in SSA takes place among countries within existing regional economic communities, as high tariffs and non-tariff barriers limit trade between countries of different groupings.

Encouraging sectoral reallocation

Enabling factor mobility. Productivity gains from sectoral

BOX 2.6.1 Labor productivity in Sub-Saharan Africa: Trends and drivers (*continued*)

reallocation of labor in the region—a major driver of pre-crisis productivity growth—can be reignited by policies aimed at reducing the barriers to factor mobility. These barriers include low human capital of the labor force, weak infrastructure (such as inadequate transport systems in urban areas), low access to finance, and disadvantageous trade policies. In Nigeria, tariff structures have been shown to reduce incentives for sectoral reallocation to higher-productivity sectors, as the tariffs systematically boosted profitability of the least productive sectors but not that of higher-productivity sectors (World Bank 2017g).

Diversification. Countries with highly diversified economic activity across a broad range of sectors tend to have higher productivity levels (Chapter 3). SSA, however, remains heavily dependent on extractives sectors, particularly for export and fiscal revenues, with the latter dependence often a cause of procyclical fiscal policies. Policy measures aimed at broadening the production base toward a wider and more complex array of export goods, across a range of manufacturing and services sectors, will enable greater participation in value chains and help insulate economic activity from the destabilizing effects of large international commodity price swings. In Côte d'Ivoire—the world's largest supplier of cocoa beans—diversification along the cocoa value chain through the expansion of domestic grinding and processing facilities has allowed the country to also produce a diverse array of value-added cocoa products and to overtake the Netherlands as the world's leading cocoa-processing country (World Bank 2016h). AfCFTA could contribute to economic diversification if it leads to the establishment of regional value chains. However, successful economic diversification requires several supporting measures, including improved human capital, better infrastructure, stronger governance, and deeper financial markets with increased access to credit (Fosu and Abass 2019).

Creating a growth-friendly environment

Protection from climate change. Some of the adverse effects of climate change can be mitigated through appropriate land-use planning and investment in climate-smart infrastructure (Collier, Conway and Venables 2008; World Bank 2019a). Effective social protection policies, possibly financed with energy taxes or the removal of fuel subsidies, could provide resources to support livelihoods during extreme events (Hallegatte et al 2015). Climate adaptation policies can be strengthened by building capacity in policy implementation, boosting access to adaptation financing, and raising public awareness of climate change (Adenle et al. 2017; World Bank 2019ac).

Stability. SSA has historically witnessed many conflicts, particularly between the 1970s and early 2000s, that not only took heavy human tolls, but also shook the stability of the affected countries by weakening institutions and severely damaging or destroying infrastructure. Conflicts in Burundi, the Democratic Republic of Congo, Liberia, Rwanda, and Sierra Leone inflicted losses of human life equivalent to between 1 and 10 percent of their populations (Steinbach 2019; World Bank 2019a). More recently, rising incidence of conflict—particularly acts of violence against civilians—has increasingly weighed on activity in several countries and forcibly displaced large populations (Figure 2.6.1.5.F). Efforts to achieve lasting peace can strengthen economic activity and boost productivity through stronger investment and increased TFP (Chen, Loayza, and Reynal-Querol 2008).

Strengthening institutional quality and business environments. Business environments stand to benefit from improved infrastructure; limited access to reliable electricity and poor transport infrastructure are often cited as key constraints to business in SSA. In addition, high non-infrastructure-related costs, such as high prices to transport goods within countries and across borders, tend to exacerbate the burden of weak infrastructure. In many instances, high road-transport costs reflect excessive market power of trucking companies. Competition-enhancing deregulation can help alleviate this business constraint and boost productivity. For example, in landlocked Rwanda, deregulation in the transport sector led to an abrupt fall in transport costs (Barrett et al. 2017) Business environment deficiencies can further be addressed by increasing access to finance, simplifying tax systems, reducing regulatory burdens and compliance requirements, improving judicial systems to address corruption and strengthen enforcement, and liberalizing labor and product markets (Bah and Fang 2015; World Bank 2019f). Strengthening institutional quality by improving judicial systems can help address corruption—a leading obstacle to doing business—and strengthen contract enforcement. Such structural reforms can bolster firm productivity (Kouamé and Tapsoba 2018). Reforms aimed at improving the business environment can also help lower the size of the informal sector, which tends to have lower productivity than the formal economy.

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