

1. Slow Recovery amid Growing Challenges

Sub-Saharan Africa is set to enjoy a modest growth uptick. The average growth rate in the region is projected to rise from 2.8 percent in 2017 to 3.4 percent in 2018, with growth accelerating in about two-thirds of the countries in the region. The growth pickup has been driven largely by a more supportive external environment, including stronger global growth, higher commodity prices, and improved market access. While external imbalances have narrowed, the record on fiscal consolidation has been mixed and vulnerabilities are rising: about 40 percent of low-income countries in the region are now assessed as being in debt distress or at high risk of debt distress. On current policies, average growth in the region is expected to plateau below 4 percent—barely 1 percent in per capita terms—over the medium term, highlighting the need for deliberate actions to boost growth potential.

Recent growth performance has been far from uniform. Several economies (Burkina Faso, Côte d'Ivoire, Ethiopia, Ghana, Guinea, Rwanda, Senegal, Tanzania)—a mix of resource-intensive and non-resource-intensive economies—grew 6 percent or faster in 2017 and are expected to maintain robust growth over the medium term. At the other end of the spectrum, 12 countries, home to about a third of sub-Saharan Africa's population, saw per capita incomes decline in 2017, and most of these countries are expected to see further declines in 2018. A number of countries are facing internal conflicts (Burundi, Democratic Republic of the Congo, South Sudan), resulting in record levels of refugees and internally displaced people, with adverse spillovers to neighboring countries. Nigeria and South Africa, the two largest economies in sub-Saharan Africa and its main economic engines, have been stuck in low gear and are weighing heavily on the region's overall growth.

External positions have strengthened, reflecting both global developments and in some cases improved policy frameworks. Better terms of trade contributed to the narrowing of the current account deficits in most resource-intensive countries, but demand compression also played an important role

in some countries. Record-low spreads prompted a surge in Eurobond issuances by the region's frontier markets. Stock markets, fueled by portfolio inflows, were buoyant in the region's economic hubs. Exchange rate pressure subsided in some countries seeing increased foreign exchange rate flexibility (Angola) and new foreign exchange measures (Nigeria).

Debt levels have continued to rise. Oil exporters have now, mostly, put in place policies to respond to the deep macroeconomic imbalances stemming from the historically large adverse terms-of-trade shock of 2014, but the delayed adjustment and magnitude of the shock have resulted in sharply elevated debt levels. Many other countries continue to rely on public-investment-driven growth, with rising debt levels. The associated balance sheet weaknesses are limiting the extent of the recovery, as shrinking fiscal space, rising debt, slowing private sector credit, and increasing nonperforming loans are exacerbating vulnerabilities in many countries.

Recent political developments in South Africa and Zimbabwe bode well for the economic policy environment, but lingering political uncertainties in many countries, including in those dealing with internal conflict or heightened terrorism, are deterring investment and dampening growth prospects.

Looking forward, the favorable external environment is expected to fade over time. The current growth spurt in advanced economies is expected to taper off, and the borrowing terms for the region's frontier markets will likely become less favorable, in step with the normalization of US monetary policy and an eventual return of global asset price volatility, which could coincide with higher refinancing needs for many countries across the region.

Thus, turning the current recovery into durable growth calls for domestic policy steps to both reduce vulnerabilities and raise medium-term growth potential. The former should be anchored on sustained fiscal discipline to prevent excessive

This chapter was prepared by a team led by Jaroslaw Wieczorek, coordinated by Francisco Arizala and composed of Reda Cherif, Xiangming Fang, and Cleary Haines.

public debt accumulation and monetary policy geared toward low inflation. With the recent respite provided by the cyclical rebound in commodity prices, resource-intensive countries should guard against the temptation to defer reforms. Achieving the latter involves structural policies to reduce market distortions, shaping an environment that fosters private investment, and strengthening revenue mobilization, so that governments can invest in physical and human capital and protect social spending, even during fiscal consolidation.

Risks to the medium-term outlook for the region are associated with the decisiveness of the policy response. There are upside risks to the subdued medium-term growth prognosis for countries where policy uncertainty or lack of adjustment has delayed macroeconomic stabilization.

The issue of how to enhance domestic revenue mobilization is the focus of Chapter 2. Through a combination of empirical work and country case studies, the chapter highlights the importance of appropriate tax policy implemented by effective revenue administration institutions, and emphasizes the contribution of improved governance and corruption control to stronger revenue mobilization.

The critical role of private investment in ensuring sustainable growth over the medium term is examined in Chapter 3. Private investment in sub-Saharan Africa has remained markedly lower than in other regions. Empirical analysis highlights the importance of strengthening the regulatory and insolvency frameworks, increasing trade liberalization, and deepening access to credit. These institutional changes will take time, and the chapter also looks at other avenues countries have taken in an attempt to jump-start investment—such as public-private partnerships, special economic zones, and mechanisms to target foreign direct investment.

MACROECONOMIC DEVELOPMENTS

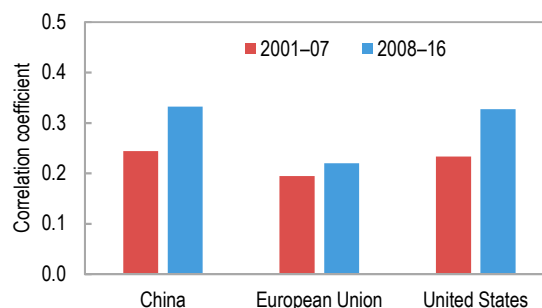
A More Supportive External Environment

The external environment for sub-Saharan Africa has further improved, with a stronger global recovery and easier financing conditions for the region's frontier markets. Commodity prices have also increased, providing some relief to oil exporters and other resource-intensive countries.

Global growth has been accelerating on a broad base. The world economy is estimated to have grown by 3.8 percent in 2017 and is expected to accelerate to 3.9 percent in 2018, reflecting stronger-than-expected growth in major advanced economies, especially in the euro area—and in the United States, partly thanks to the recently approved tax reform. Growth in China is also projected to remain solid. The improved growth prospects in all three areas provide a positive stimulus to growth in sub-Saharan Africa, given the correlation between their business cycles (Figure 1.1).

Global financial conditions remain accommodative, prompting a strong rebound in international sovereign bond issuance and sharp compression in yield spreads. Some of the region's frontier economies (Côte d'Ivoire, Nigeria, Senegal) issued a total of \$7.5 billion in 2017, 10 times the level seen in 2016 and a record high. This rapid pace of issuance continued in the first quarter of 2018—Kenya, Nigeria, and Senegal issued sovereign bonds in the amount of \$6.7 billion, and several countries stated their intention to issue at least an additional \$4.4 billion during the second quarter of 2018 (Figure 1.2). The global search for yield and increased appetite for sovereign bonds of the region's frontier markets are also reflected in much narrower spreads, both in absolute terms—sub-Saharan African frontier markets' spreads are half of what they were at their peak of about 900 basis points in 2016—and relative to emerging markets as an asset class, where the premium has narrowed from almost 600 to about 150 basis points.

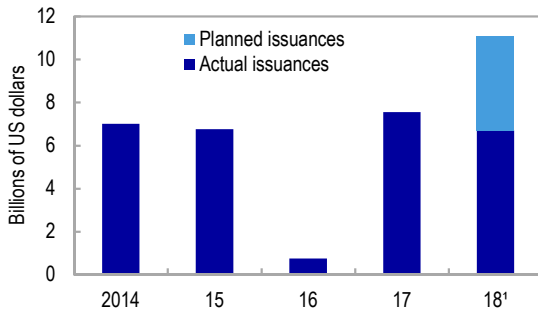
Figure 1.1. Business Cycle Synchronization between Sub-Saharan Africa and China, European Union, and United States, 2001–16



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Note: Correlations of cyclical components in real GDP derived from Hodrick-Prescott filter.

Figure 1.2. Sub-Saharan African Frontier Market Economies: International Sovereign Bond Issuances, 2014–18



Source: Haver Analytics.

Note: Sub-Saharan African frontier market economies include Angola, Cameroon, Republic of Congo, Côte d'Ivoire, Ethiopia, Gabon, Ghana, Kenya, Mozambique, Namibia, Nigeria, Senegal, Tanzania, and Zambia.

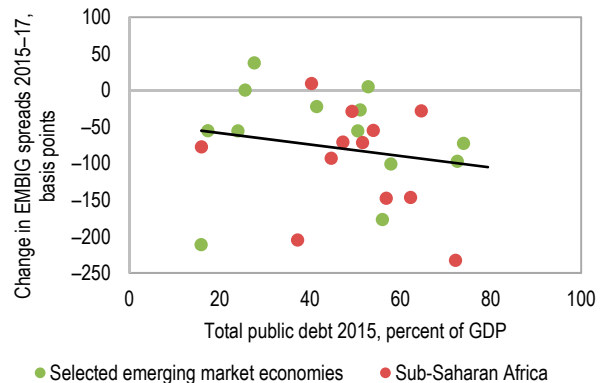
¹ Data are as of March 2018.

Remarkably, between 2015 and 2017, spreads compressed even for countries with high debt-to-GDP ratios (Figure 1.3).

The strong investor interest is also captured in increased portfolio inflows into some, but not all, countries in 2017. Sharp increases in inflows were observed in Ghana, Nigeria, and Senegal, but levels were low relative to the recent past in Kenya and Zambia, where no Eurobonds were issued in 2017. A similar differentiation among economies is seen in the performance of regional stock markets: between April 2017 and the end of January 2018, stock market indices grew by about 10 percent in South Africa, 40 percent in Kenya, 60 percent in Ghana, and 70 percent in Nigeria, but fell in Senegal, where most of the record level of portfolio inflows were directed into Eurobond issuances.

Commodity prices have strengthened since mid-2017, providing a terms-of-trade boost to sub-Saharan African commodity exporters (Figure 1.4). Oil prices rose by about 20 percent between August 2017 and mid-December 2017 to more than \$60 a barrel. In addition, there were sizable increases in the prices of metals (aluminum, copper, iron ore) and agricultural raw materials (cotton, tea, vanilla), although some items (cocoa) witnessed price drops. With the notable exception of oil and iron ore, the prices of most commodities are now projected to approach, regain, or exceed their 2013 highs by 2020.

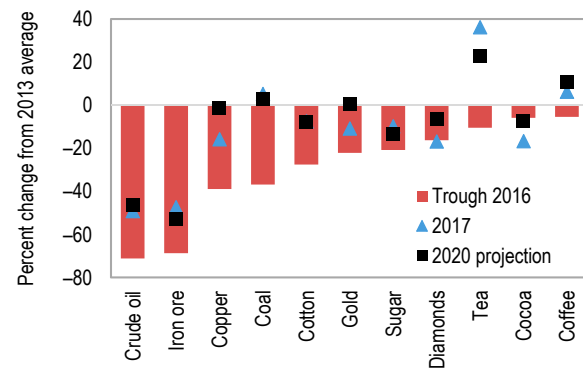
Figure 1.3. Sub-Saharan Africa: EMBIG Spreads and Total Public Debt, 2015–17



Sources: Bloomberg Finance, L.P.; and IMF, World Economic Outlook database.

Note: EMBIG = Emerging Markets Bond Index Global.

Figure 1.4. Change in Selected Commodity Prices since 2013

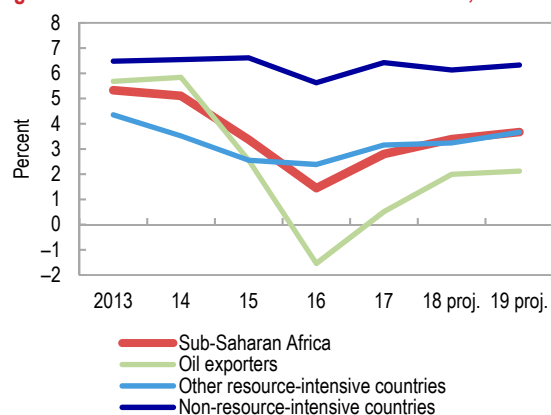


Sources: IMF, Commodity Price System; and IMF Global Assumptions.

Note: Besides oil, some of the main export commodities in the region are copper (Democratic Republic of the Congo, Zambia), iron ore (Liberia, Sierra Leone, South Africa), coal (Mozambique, South Africa), and gold (Burkina Faso, Ghana, Mali, South Africa, Tanzania).

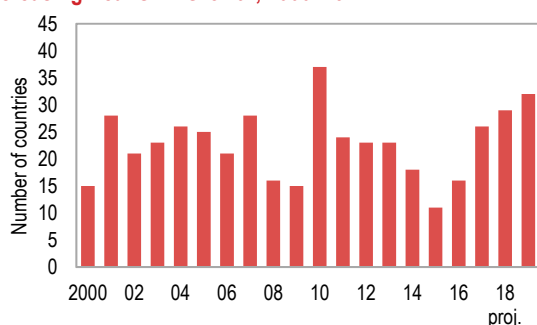
Growth Performance Is Far from Uniform

While sub-Saharan Africa is seeing a modest growth uptick, the average growth rate in the region remains close to zero on a per capita basis and well below historical trends for most country groups. Growth is expected to rise from 2.8 percent in 2017 to 3.4 percent in 2018 (Figure 1.5). While more than half of the expected pickup reflects the growth rebound in Nigeria, 29 of 45 countries are expected to see growth accelerate in 2018—the highest number since 2010 (Figure 1.6). Excluding the two largest economies (Nigeria and South Africa), growth in the rest of the region is foreseen to pick up from 4.6 percent in 2017 to 4.8 percent in 2018. Nevertheless, in 2017, income per capita is

Figure 1.5. Sub-Saharan Africa: Real GDP Growth, 2013–19


Source: IMF, World Economic Outlook database.

Note: See page 90 for country groupings table.

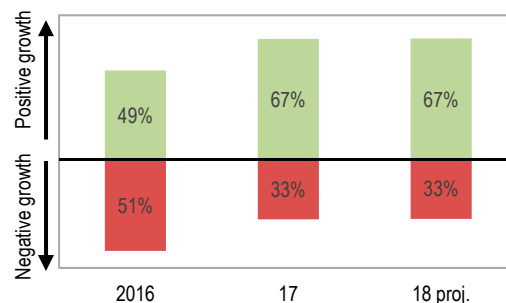
Figure 1.6. Sub-Saharan Africa: Number of Countries with Increasing Real GDP Growth, 2000–19


Source: IMF, World Economic Outlook database.

Note: Increasing growth refers to an improvement from the previous year.

estimated to have declined in 12 countries, home to about 33 percent of sub-Saharan Africa's population (320 million people) (Figure 1.7). And for most of those countries, prospects continue to suggest falling GDP per capita in 2018.

- Angola and Nigeria have seen some pickup in hydrocarbon production, but in both countries non-oil sector growth remained weak as balance sheets are still being repaired. Growth in the oil-exporting countries of the Central African Economic and Monetary Community (CEMAC) in 2017 was negative, except in Cameroon, benefiting from a more diversified economic base.
- The outlook for South Africa is set for a modest growth recovery. Growth is estimated to have reached 1.3 percent in 2017, reflecting mainly a rebound in agricultural and mining output. In 2018, growth is projected at 1.5 percent.

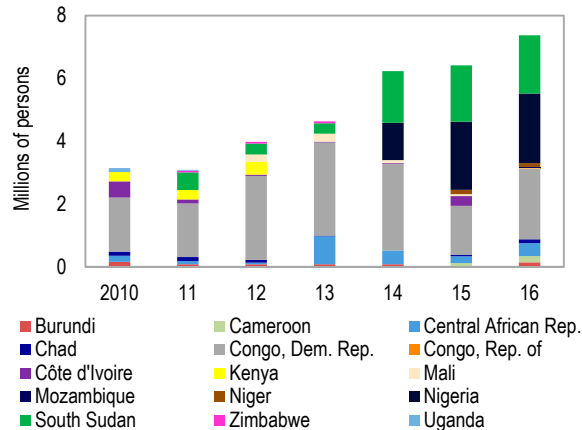
Figure 1.7. Sub-Saharan Africa: Share of Population Based on Real GDP per Capita Growth Performance, 2016–18


Source: IMF, World Economic Outlook database.

- Growth in the rest of sub-Saharan Africa (excluding oil-exporting countries and South Africa) is estimated to have reached 5.9 percent in 2017. Economic activity remains robust in fast-growing countries, such as Côte d'Ivoire and Senegal, boosted by public investment and strong agricultural production, and in Ghana, on the back of the expected increase in oil production.
- Economic activity in several countries in fragile situations (Guinea, Guinea-Bissau, Madagascar) has been helped by a strong rebound in commodity prices (aluminum, cashews, vanilla). Political developments in Liberia, Togo, and Zimbabwe weighed on their growth in 2017, but the peaceful political transition in Liberia and recent political changes in Zimbabwe point to opportunities for stronger outcomes.
- Countries affected by conflict are facing dramatic economic and humanitarian cost. Current or recent conflicts (Burundi, Democratic Republic of the Congo, South Sudan) have given rise to record levels of refugees and displaced people, with negative economic spillovers to neighboring countries. These conflicts and lingering terrorist activity in the Sahel and parts of East Africa, have resulted in food insecurity and impaired progress on human development indicators (Figure 1.8) (Box 1.1).

As intraregional linkages steadily gain strength, intraregional spillovers—through trade, remittances, and banking channels—are also having an ever-larger impact on growth outcomes (Figure 1.9).

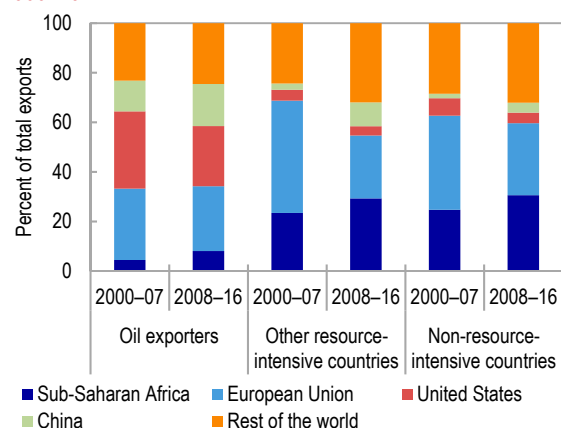
Figure 1.8. Sub-Saharan Africa: Internally Displaced Persons, 2010–16



Source: United Nations High Commissioner for Refugees.

The recent weak economic performance in South Africa has slowed growth in neighboring countries, but countries such as Côte d'Ivoire and Kenya—which have enjoyed sustained robust growth in recent years—have played a significant role in terms of demand for regional exports and as home to regional banking groups. The regional spillovers are likely to be transmitted through various channels, including intraregional trade (Southern African Customs Union (SACU) and West African Economic and Monetary Union (WAEMU) members), banking (Botswana), and remittances (Liberia, Togo) (Box 1.2). These regional ties are likely to become stronger over the medium term if the recently launched African Continental Free Trade Area (AfCFTA) further boosts regional integration and generates substantial long-term economic benefits for African countries (Box 1.3).

Figure 1.9. Sub-Saharan Africa: Total Exports by Partner, 2000–16



Source: IMF, *Direction of Trade Statistics*.

Note: See page 90 for country groupings table.

External Positions Have Strengthened

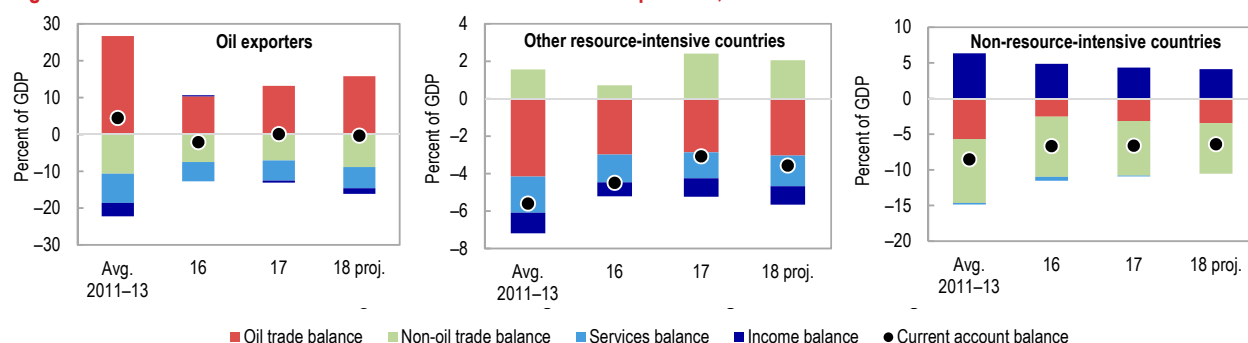
Current account deficits are estimated to have narrowed further in the region from an average of 4.1 percent of GDP in 2016 to 2.6 percent in 2017, although with significant dispersion, notably between oil exporters and importers (Figure 1.10). Most of the improvement in the current account stemmed from a compression in private sector demand.

For large oil exporters (Angola and Nigeria), external balances improved noticeably due to higher oil production, the recent uptick in oil prices, compressed imports, and foreign exchange measures (Nigeria). But non-oil exports remain weak. In the CEMAC, the current account deficit is estimated to have declined sharply from 13.8 percent of GDP in 2016 to 4.3 percent in 2017. The external adjustment has been particularly steep in the Republic of Congo, narrowing from a deficit of 74 percent of GDP in 2016 to about 13 percent in 2017, driven mainly by strong fiscal adjustment, the recovery in oil prices, and increased oil production. Elsewhere in the CEMAC, the narrowing of the current account deficit is explained by increased oil exports, some pickup in non-oil exports (Chad, Gabon, Equatorial Guinea), and lower non-oil imports (Cameroon, Gabon, Equatorial Guinea).

The external balances in most other resource-intensive countries appear to have improved in 2017 as well, reflecting a range of factors: weaker import growth (South Africa), stronger commodity exports and lower non-oil imports (Ghana), and import compression and a temporary increase in SACU receipts (Namibia). However, current account deficits have widened in several of those countries following deterioration in the terms of trade (Mali) or a drop in current transfers and income payments (Liberia).

In non-resource-intensive countries, current account deficits remained elevated in 2017 as a result of high food and fuel imports (Kenya), a combination of low exports and high capital goods imports (Ethiopia, Senegal), and increased imports related to public infrastructure projects (Uganda).

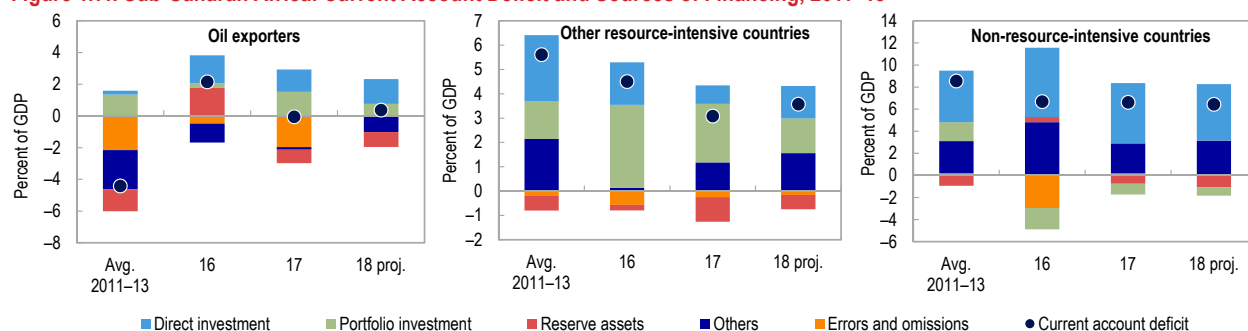
Figure 1.10. Sub-Saharan Africa: Current Account Balance Decomposition, 2011–18



Source: IMF, World Economic Outlook database.

Note: See page 90 for country groupings table.

Figure 1.11. Sub-Saharan Africa: Current Account Deficit and Sources of Financing, 2011–18



Source: IMF, World Economic Outlook database.

Note: See page 90 for country groupings table.

Current account imbalances have increasingly been financed through portfolio investment inflows, helping to ease pressure on reserves (Figure 1.11). In particular, oil-exporting countries' reserve levels increased in 2017 for the first time since 2013. For other resource-intensive countries, portfolio investment flows remained the major source of external financing. Non-resource-intensive countries, while experiencing net portfolio outflows, financed their deficits mainly through foreign direct investment.

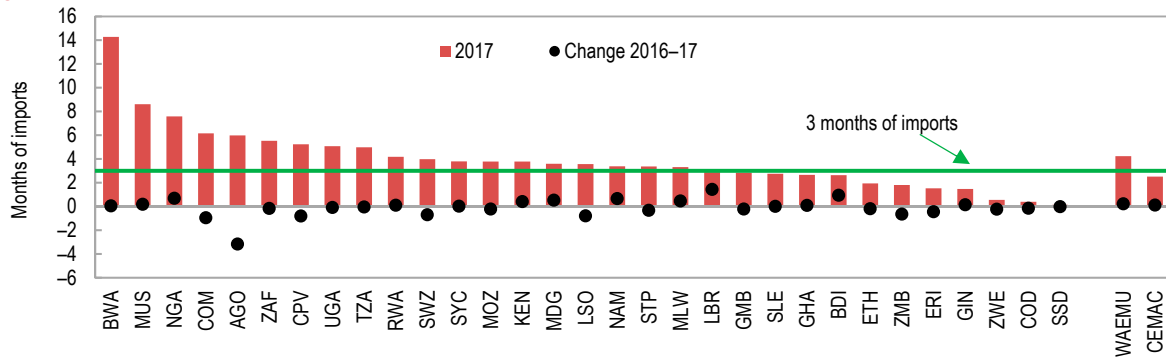
External Buffers Remain Low

The improvement in current account balances in 2017 boosted international reserves in about half of the region's economies (Figure 1.12). However, many countries maintained reserves barely at or below the traditional three-months-of-imports benchmark.

For oil exporters, the buildup of reserves reflected the recovery in oil prices and other idiosyncratic factors.

- In Nigeria, gross international reserves rose to a four-year high (more than \$39 billion) at the end of 2017, favored by the improvement in the trade balance, sovereign and corporate bond issuances (including \$4.8 billion in international bond issuances), swaps, portfolio, and other private and inflows.
- In Angola, foreign exchange reserves fell sharply in 2017 as the authorities maintained a peg to the US dollar ahead of the transition to a more flexible regime in early 2018.
- In the CEMAC, international reserves have started to recover as regional institutions (Bank of the Central African States (BEAC), Central African Banking Commission (COBAC)) have implemented supportive policies to rebuild reserves, and fiscal consolidation has taken place. The recent increase in oil prices, if sustained, could lead to faster reserve accumulation.

Figure 1.12. Sub-Saharan Africa: International Reserves, 2017



Sources: IMF, World Economic Outlook database; and country authorities.
 Note: See page 90 for country groupings and page 91 for country abbreviations tables.

Elsewhere, easier access to international capital markets has also contributed to the buildup of reserves. In the WAEMU, after shrinking in 2016, international reserve coverage stabilized at about four months of imports at the end of 2017, helped by Eurobond issuances by Côte d’Ivoire, Senegal, and the West African Development Bank (BOAD). Meanwhile, in some countries, international reserves have dropped to alarmingly low levels. For example, South Sudan has reserves equal to only 0.1 month of imports, and in the Democratic Republic of the Congo and Zimbabwe, reserves cover only about 0.5 month of imports.

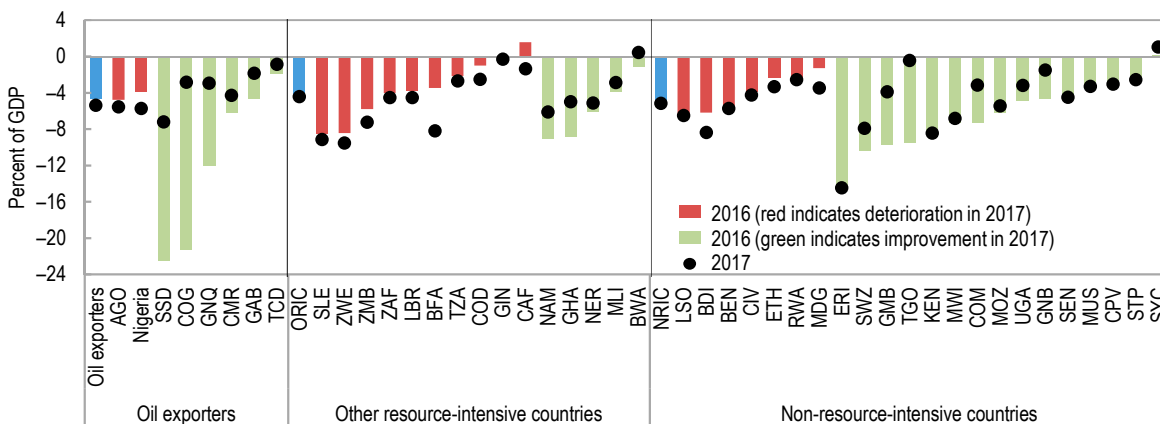
The Record on Fiscal Adjustment Is Mixed

While fiscal deficits widened for the region as a whole, from 4.6 percent of GDP in 2016 to 5.0 percent of GDP in 2017, there is significant variation across countries. Fiscal positions

deteriorated in the largest economies, but improved in most other countries (Figure 1.13). The improvement in fiscal positions reflected, in many cases, countries’ continued adjustment to the sharp oil price decline in 2014, the largest in real terms since 1970 (IMF 2016).

- The fiscal position of oil-exporting countries deteriorated by 0.7 percent of GDP, as widened deficits in Angola and Nigeria outweighed the narrowing of deficits in CEMAC oil producers. The wider deficit in Angola stemmed from weak revenues and some recovery in capital spending, while in Nigeria the deficit increased between 2016 and 2017, mainly on the back of doubling capital expenditure amid low revenue collection. By contrast, CEMAC countries substantially reduced their fiscal deficits (from 7.6 percent in 2016 to 3.5 percent in 2017) through revenue mobilization efforts (Chad)

Figure 1.13. Sub-Saharan Africa: Overall Fiscal Balance, 2016–17

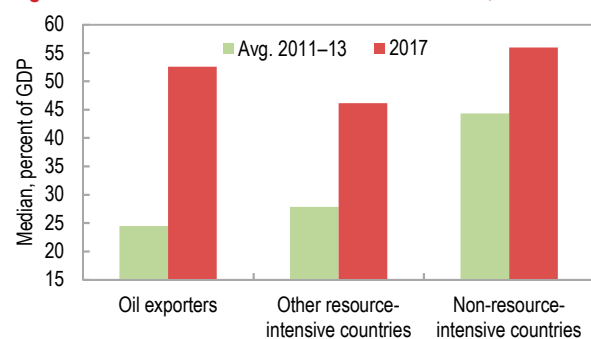


Source: IMF, World Economic Outlook database.
 Note: ORIC = other resource-intensive countries; NRIC = Non-resource-intensive countries. See page 90 for country groupings and page 91 for country abbreviations tables.

and cuts in capital expenditures (Cameroon, Equatorial Guinea, Gabon, Republic of Congo) and current spending (Cameroon, Gabon). Nevertheless, a sharp and protracted contraction in Equatorial Guinea, debt distress in Chad and the Republic of Congo, and unresolved arrears in the Central African Republic—not an oil exporter—and Gabon continue to strain fiscal positions in the CEMAC area (Box 1.4).

- In other large economies, fiscal deficits continued to widen following increased current expenditures and revenue underperformance (South Africa) and revenue slippages (Ethiopia). Other economies also experienced a deterioration in their fiscal accounts in 2017, including several resource-intensive (Burkina Faso, Liberia, Zambia, Zimbabwe) and non-resource-intensive countries (Burundi).
- In the WAEMU, fiscal positions remained more relaxed than anticipated as the buildup of reserves from recent issuances of Eurobonds appears to have blunted the momentum of fiscal consolidation in the region. In 2017, only one member country met the overall fiscal deficit convergence criterion (below 3 percent of GDP), and fewer than half are projected to meet it by 2019.
- Nevertheless, several countries consolidated their fiscal positions in 2017 both in the other resource-intensive (Ghana, Mali, Namibia) and in the non-resource-intensive groups (The Gambia, Togo), including because of unintended underspending on capital expenditures (Uganda).

Figure 1.14. Sub-Saharan Africa: Total Public Debt, 2011–17



Source: IMF, World Economic Outlook database.

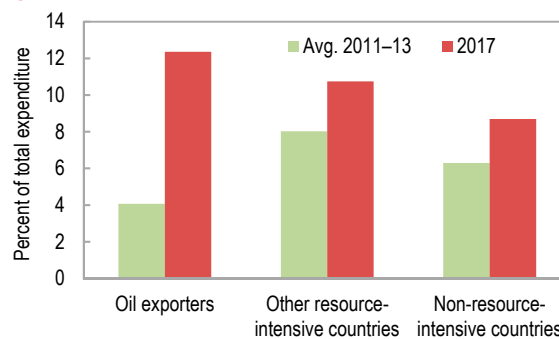
Note: See page 90 for country groupings table.

With fiscal deficits still large in many countries, debt levels have continued to rise (Figure 1.14). Compared to 2011–13, the median public debt level for all three country groups have significantly increased, especially in oil-exporting countries.

In part reflecting the recent debt buildup, the composition of public spending has shifted, with a marked increase in the share of interest payments. This shift in composition, reflected in either higher deficits or the diversion of resources away from more productive spending, has been particularly pronounced among oil-exporting countries. Average interest payments increased from 4 percent of expenditures in 2013 to 12 percent in 2017, owing notably to large increases in Angola, Chad, and Gabon (Figure 1.15). The proportion of interest payments in total spending has also increased among other resource-intensive countries and in many non-resource-intensive countries, partly because of the substantial increases in debt stocks (Côte d'Ivoire, Ghana, Namibia, Senegal, Seychelles, Togo, Uganda, Zambia).

Although fiscal deficits have widened across all country groups since 2015, the public-sector contribution to growth has evolved differently in oil-exporting countries than in other sub-Saharan countries. In the former, the collapse of oil revenues led to tighter government spending, which had a strong contractionary effect on growth in 2015–16 (Figure 1.16). By contrast, in other resource-intensive countries and in non-resource-intensive countries, public spending (on consumption and investment) continued to support growth.

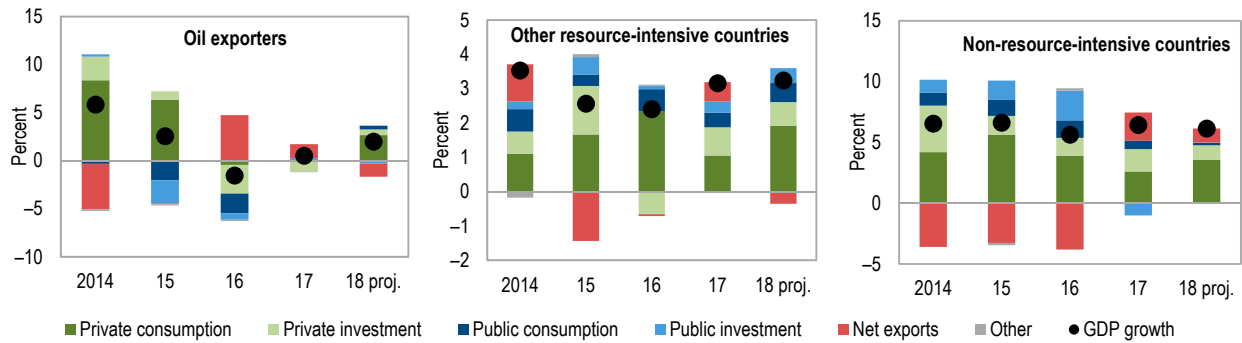
Figure 1.15. Sub-Saharan Africa: Interest Expenditure, 2011–17



Source: IMF, World Economic Outlook database.

Note: See page 90 for country groupings table.

Figure 1.16. Sub-Saharan Africa: Real GDP Growth Decomposition, 2014–18



Source: IMF, World Economic Outlook database. Note: See page 90 for country groupings table.

Inflation Pressures Have Receded

Regionwide, annual inflation fell from 12.5 percent in 2016 to just over 10 percent in 2017, and is expected to drop further in 2018 thanks to falling food prices and policy tightening by oil exporters (Figure 1.17).

Monetary policy played an important role in taming inflation in hard-hit oil-exporting countries. In Angola, monetary policy was tight for most of 2017 as reserve money contracted throughout the year, in step with the decline in net international reserves (Figure 1.18). This contributed to tapering inflation from 42 percent in 2016 to 26.3 percent in 2017. In Nigeria, tighter monetary policy also helped contain inflation, as open market operations were used to reduce excess liquidity. In the CEMAC, the BEAC maintained a tight monetary policy stance, increased its policy rate by 50 basis points in March 2017, and maintained strict control on bank refinancing. Monetary conditions also

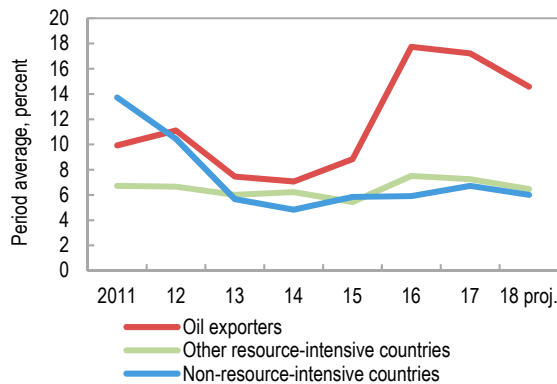
remained tight in other countries facing high or accelerating inflation (Kenya).

By contrast, monetary policy has been accommodative in countries where economic activity has weakened or inflation has been receding, including in countries that had experienced drought-related inflation spikes in 2016 and early 2017 (Rwanda, South Africa, Tanzania, Uganda). In some cases, exchange rate movements have also contributed to easing inflation pressures and enabled a more accommodative policy stance (Rwanda, Zambia).

More Flexibility in Exchange Rate Systems

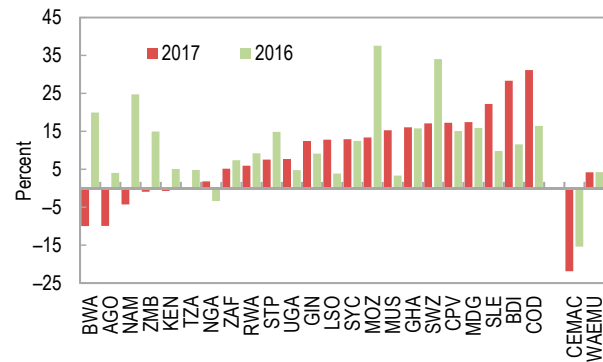
Exchange rate policies in Angola and Nigeria have shifted toward more flexibility—such as reduction of the number of foreign exchange windows in the case of Nigeria—helping lower external imbalances. In January 2018, Angola allowed the kwanza to depreciate by about 40 percent against

Figure 1.17. Sub-Saharan Africa: Inflation, 2011–18



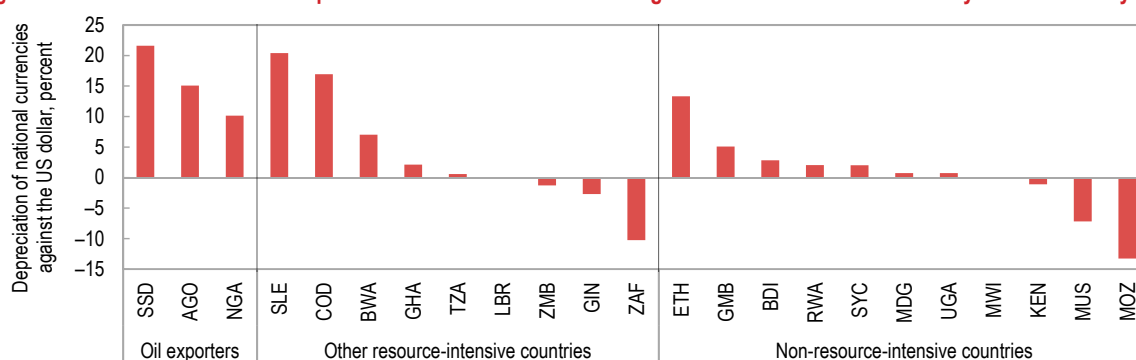
Source: IMF, World Economic Outlook database. Note: See page 90 for country groupings table.

Figure 1.18. Sub-Saharan Africa: Average Change in Base Money, 2016 and 2017



Source: IMF, International Financial Statistics.

Note: See page 90 for country groupings and page 91 for country abbreviations tables.

Figure 1.19. Sub-Saharan Africa: Depreciation of National Currencies against the US Dollar from January 2017 to January 2018

Sources: Bloomberg Finance, L.P.; and country authorities.

Note: Positive indicates a depreciation. See page 90 for country groupings and page 91 for country abbreviations tables.

the US dollar. With increased availability of foreign exchange, the parallel official exchange rate spread decreased from 150 to 100 percent. In Nigeria, the introduction of a new investor and exporter foreign exchange (IEFX) window in April 2017 and higher foreign exchange inflows—related to increased oil exports and portfolio inflows—have improved foreign exchange availability and helped narrow the parallel market exchange rate premium, from its 60 percent peak in February 2017 to 20 percent in early 2018.

Other countries experienced large movements in their exchange rates, including depreciations reflecting the deterioration of economic conditions (Democratic Republic of the Congo, Liberia) and appreciations (Mozambique—through a partial reversal of a large depreciation in 2016) (Figure 1.19).

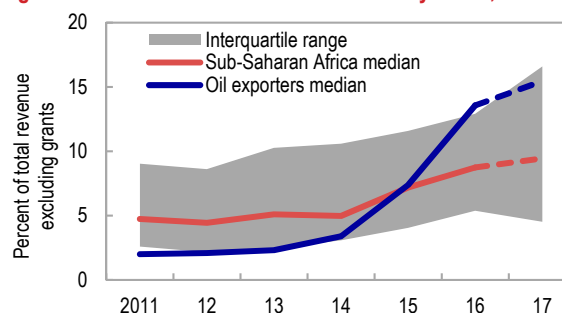
CHALLENGES AND RISKS

Debt Vulnerabilities Have Continued to Build Up

Public debt continued to rise in sub-Saharan Africa in 2017, despite the growth pickup and improved external environment. About 40 percent of Poverty Reduction and Growth Trust (PRGT) eligible low-income developing countries in the region are now in debt distress or at high risk of debt distress. Looking ahead, debt dynamics are susceptible to fiscal slippages, subdued growth outcomes, exchange rate depreciations, and tighter financing conditions.

The median level of public debt in sub-Saharan Africa at the end of 2017 exceeded 50 percent of GDP. Debt-to-GDP ratios deteriorated mainly due to large primary deficits and interest bills. Additional factors in some cases were negative growth (Chad, Republic of Congo, Equatorial Guinea); currency depreciations (The Gambia, Sierra Leone); reporting of previously undisclosed debt (Republic of Congo, Mozambique); and below-the-line operations, including the accumulation of arrears, incomplete recording of public transactions, operations of state-owned enterprises, and carryover of unspent appropriations above and beyond the annual budgetary process (Cabo Verde, Equatorial Guinea, Gabon, The Gambia, Senegal, Sierra Leone).

With rising debt stocks, interest payments have also been increasing, eating up a growing share of revenues (Figure 1.20). For sub-Saharan Africa as a whole, the median interest-payments-to-revenue ratio nearly doubled from 5 to close to 10 percent between 2013 and 2017, and for oil-exporting countries, it increased from 2 to more than

Figure 1.20. Sub-Saharan Africa: Interest Payments, 2011–17

Source: IMF, World Economic Outlook database.

Note: Shaded area refers to 25–75 percentile range.

15 percent over the same period. The largest increases occurred in Angola, Benin, Chad, the Republic of Congo, Gabon, Mozambique, Nigeria, Swaziland, Uganda, and Zambia.

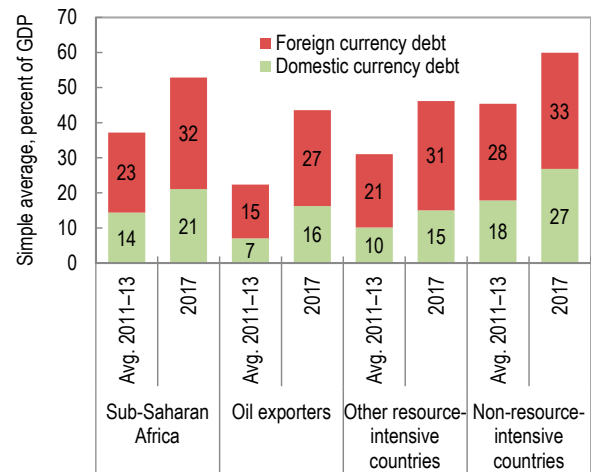
Increased reliance on foreign currency borrowing is another source of vulnerability. Foreign-currency-denominated public debt increased by about 40 percent from 2010–13 to 2017 regionwide (Figure 1.21) and accounted for about 60 percent of total public debt in 2017 on average. The recent increase partly reflects the rebound in Eurobond issuance by sub-Saharan African frontier markets. The share of foreign-currency-denominated debt varies from about 10 percent of total debt in South Africa to 100 percent in Comoros and Zimbabwe. While interest rates on foreign-currency-denominated debt are generally lower than domestic interest rates in sub-Saharan Africa, reliance on borrowing in foreign currency exposes debtor countries to exchange rate volatility, and heightens refinancing and interest rate risk.

The favorable external market conditions create an opportunity for improving the debt maturity structure and implementing other strategic debt management operations, but countries need to remain vigilant not to overborrow in a context of rising external debt service and gross financing needs (Figure 1.22). The increased availability of external financing should not detract countries from their medium-term fiscal plans (Figure 1.23).

Furthermore, with the rise in debt accompanied by an increasing share of commercial, domestic, and nontraditional sources, borrowing countries' exposure to market risk has risen, with increased challenges for debt resolution in the countries that find their debt burdens difficult to manage.

Indeed, several countries, mostly resource-intensive countries in fragile situations, have accumulated external arrears (Figure 1.24). Debt sustainability has deteriorated among sub-Saharan African PRGT eligible low-income developing countries (Figure 1.25). As of the end of 2017, six countries have been assessed to be in debt distress (Chad, Eritrea, Mozambique, Republic of Congo, South Sudan, Zimbabwe). The previous moderate ratings for Zambia and Ethiopia were changed to “high risk of debt distress.”

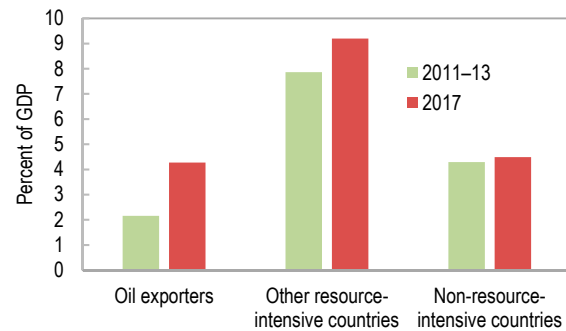
Figure 1.21. Sub-Saharan Africa: Public Sector Debt Currency Decomposition, 2011–17



Sources: IMF, Debt Sustainability Analysis database; and IMF staff calculations.

Note: See page 90 for country groupings table.

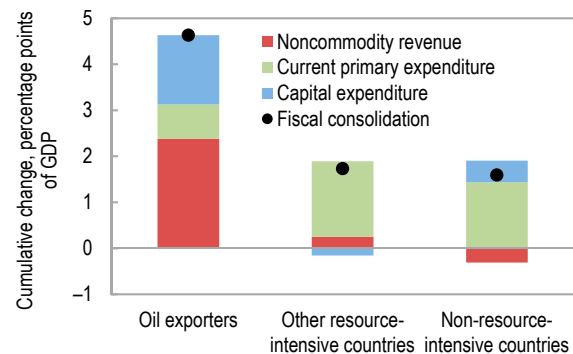
Figure 1.22. Sub-Saharan Africa: External Debt Service, 2011–17



Source: IMF, World Economic Outlook database.

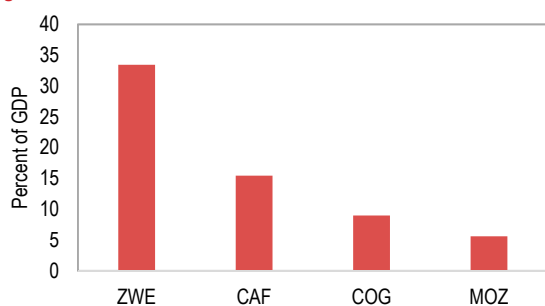
Note: See page 90 for country groupings table.

Figure 1.23. Sub-Saharan Africa: Medium-Term Fiscal Plans, 2018–22



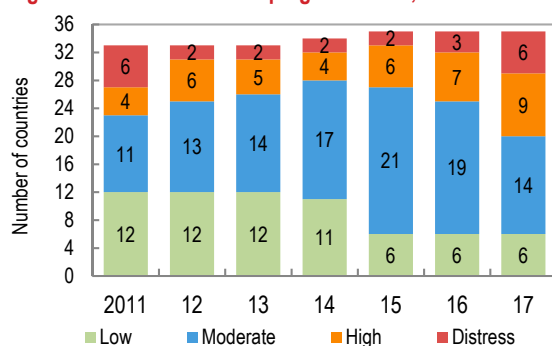
Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Note: Excludes Burundi, Eritrea, and South Sudan due to data availability. See page 90 for country groupings table.

Figure 1.24. Sub-Saharan Africa: External Arrears, 2017

Source: IMF, World Economic Outlook database.

Note: See page 91 for country abbreviations table.

Figure 1.25. Sub-Saharan Africa: Debt Risk Status for PRGT Eligible Low-Income Developing Countries, 2011–17

Source: IMF, Debt Sustainability Analysis Low Income Countries database.

Note: Debt risk ratings for Cabo Verde begin in 2014 and for South Sudan in 2015. PRGT = Poverty Reduction and Growth Trust.

While the causes of sliding into debt distress are country specific, most of the countries in debt distress are those in fragile situations or those facing adjustment to a very large shock to the price of their major export commodity.

Rising Nonperforming Loans Also Threaten Recovery

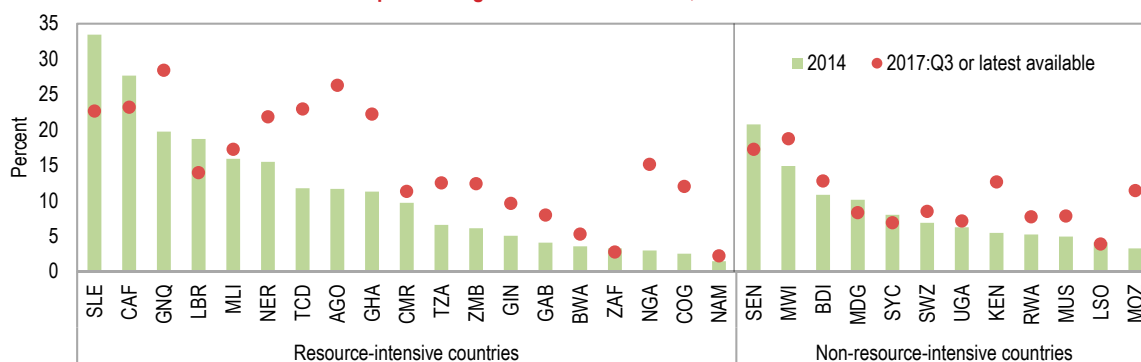
Although banking systems have been generally stable, with adequate capital and liquidity buffers, nonperforming loan ratios have surged across the region (Figure 1.26). The increases in nonperforming loans were particularly large among resource-intensive countries, where weak economic activity has translated into a decline in credit quality (Angola, Republic of Congo, Mozambique) and where government arrears have continued to affect the banking sector (Zambia). Nonperforming loans tend to be concentrated in a few banks (Angola and Nigeria) and, in several instances, have been incurred predominantly by public entities

(CEMAC). This is consistent with evidence that periods of declining commodity prices tend to be associated with deteriorating financial sector conditions in commodity-dependent countries, including higher numbers of nonperforming loans and more banking crises (IMF 2015a).

The broad-based deceleration in private sector credit growth raises additional concerns (Figure 1.27). In 2017, private sector credit growth was negative in real terms in many countries and, in several cases (Angola, Gabon, Zambia), it was negative even in nominal terms. With many factors at play simultaneously, in some countries demand-side factors predominated, with the private sector still struggling with the legacy of the crisis, while in other countries supply-side factors were more important, reflecting a combination of tight liquidity (WAEMU), government arrears (Gabon), high levels of nonperforming loans (Angola), crowding out by the public sector (Zambia), or interest rate controls (Kenya). The slowing down of private sector credit poses a threat to recovery in the affected countries, especially where fiscal space became constrained by the rising public debt burden.

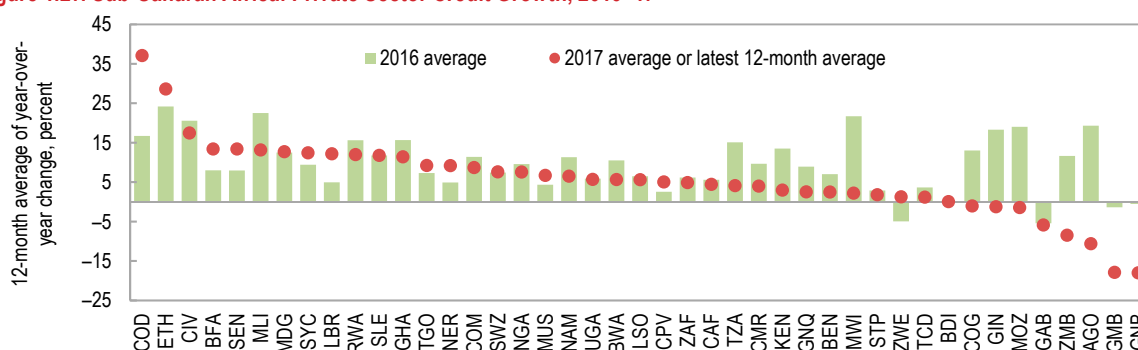
In many of these countries, the government's reliance on domestic banks to carry the rising public debt could crowd out the private sector and undermine banking sector stability. Besides tackling fiscal consolidation, these countries should address this emerging bank-sovereign nexus by rebalancing the incentives in place that favor holding government securities and discourage credit to the private sector (for example, tax deductibility and exemptions); implementing macroprudential measures to limit exposure to sovereign debt; and gradually tightening central bank refinancing of commercial banks (IMF 2017a). In the medium term, enhancing transparency in the corporate sector and reducing information asymmetry (for example, by implementing proper accounting standards, and setting up credit bureaus and property titling), and improving the resolution framework for banks would encourage exposure to the private sector.

Countries where rising nonperforming loans weigh on the recovery must take swift action to address rising vulnerability. The concentration

Figure 1.26. Sub-Saharan Africa: Bank Nonperforming Loans to Total Loans, 2014–16

Sources: Country authorities; and IMF, *International Financial Statistics*.

Note: See page 90 for country groupings and page 91 for country abbreviations tables.

Figure 1.27. Sub-Saharan Africa: Private Sector Credit Growth, 2016–17

Sources: Country authorities; and IMF, *International Financial Statistics*.

Note: See page 91 for country abbreviations tables.

of credit should also be tackled where the rise in nonperforming loans has been driven by a few entities. In parallel, safeguards to address liquidity pressures in the banking sector, enhanced review of asset quality, and prompt recapitalization of weaker banks should help preserve the banking sector's ability to lend to the private sector.

Fiscal Positions and Debt Dynamics Are Expected to Improve Gradually

In 2018, some fiscal consolidation is expected among non-resource-intensive countries, driven mostly by revenue mobilization efforts (Ethiopia, Lesotho, Mozambique) and cuts in current primary expenditures (The Gambia, Madagascar, Malawi). Similarly, but to a lesser extent, non-resource-intensive countries are expected to strengthen their fiscal positions, with planned increases in revenue mobilization and current expenditure cuts also creating some room for higher capital expenditures (Niger, Zimbabwe). Among oil-exporting countries,

in some cases, modest improvements in fiscal positions are expected to be driven by the pickup in oil revenue helped by price increases and the recovery of production (Nigeria).

The planned fiscal consolidation, together with a further pickup in growth, underlie an expected gradual reduction in debt over the medium term. If either factor fails to materialize, debt vulnerabilities could become more acute. The likelihood that envisaged fiscal consolidations will be implemented and sustained can be enhanced by paying careful attention to the distributional consequences of the adjustment and the need to protect priority spending—a key feature of recent IMF programs (see Box 1.5). Moreover, in designing the fiscal adjustment, preference should be given to measures with low short-term multipliers to mitigate the negative impact on growth with accompanying fiscal reforms to promote long-term growth (IMF 2015b, 2017b).

The Outlook for Oil Exporters Remains Challenging

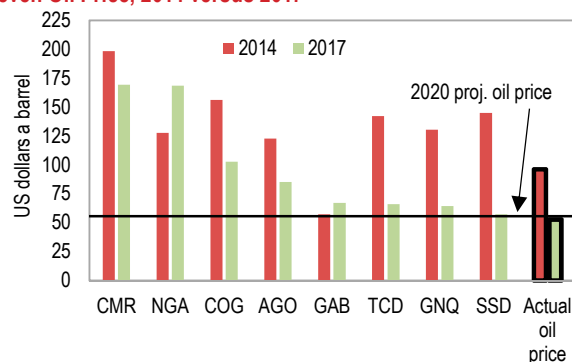
Despite recent increases, oil prices remain too low to balance the budgets of most oil exporters. The break-even oil price, the theoretical price at which the budget is balanced for a given level of production, declined between 2014 and 2017 for all sub-Saharan African oil-exporting countries except Gabon and Nigeria. In most cases however, the break-even oil price is still well above the current and projected price of oil (Figure 1.28).¹ The drop in the break-even oil price reflects the extent of fiscal consolidation—both reductions in expenditure envelopes and increases in nonoil revenues—as well as real depreciation vis-à-vis the US dollar. In Gabon and Nigeria, the increase in the break-even price can, in part, be explained by sizable drops in production volumes and, in the case of Gabon, also by an increase in government expenditure in real terms.

Risks to the Outlook

External risks. The expected monetary policy normalization in advanced economies could tighten financing conditions for many sub-Saharan African sovereigns, especially where public debt levels are already high, and often constrain the availability of financing for the private sector. Moreover, the recent surge in foreign portfolio investment to the region's capital markets could be reversed. Weaker-than-expected growth in key advanced economies (for example, as a result of inward-looking policies gaining the upper hand) and large emerging market economies, especially in China, would reverberate throughout the region, affecting not only commodity prices and demand for commodity exports but also foreign direct investment inflows and other sources of financing.

Domestic risks. Political uncertainty and security challenges continue to weigh heavily on the economic outlook in some countries. Impending elections and political transitions in many countries may reduce appetite for difficult reforms and could lead to further policy slippages. While recent political developments in some countries (Angola, South Africa, Zimbabwe) could durably benefit the

Figure 1.28. Sub-Saharan African Oil Exporters: Fiscal Break-even Oil Price, 2014 versus 2017



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Note: See page 91 for country abbreviations table.

economic policy environment, continued policy uncertainty is dampening investment in many countries. In addition, lingering internal conflicts continues to be a latent risk in several countries (Burundi, Democratic Republic of Congo, South Sudan, and parts of the Sahel) bearing the socio-economic costs of the rising number of internally displaced people and refugees. Also, if economic conditions deteriorate, governments could be tempted by inward-looking policies, which would hinder growth. However, there is also a considerable upside risk if the current uncertainties resolve in favor of an improved business climate, if the economies experience a larger-than-anticipated confidence boost, or if policy reforms advance faster than expected (Nigeria, South Africa).

POLICIES

Ensuring Macroeconomic Stability

Ensuring macroeconomic stability is necessary to lay the groundwork for transforming the current recovery into sustainable growth. Prudent fiscal policy is needed to rein in the buildup of public debt, while monetary policy must be geared toward ensuring low inflation. Moreover, external buffers should be strengthened in countries that are well positioned to take advantage of the current global growth pickup and favorable external conditions. Beyond these general objectives, macroeconomic policies and supportive reforms should be tailored to sub-Saharan African countries' structural characteristics and cyclical positions.

¹ The break-even price is harder to interpret for Cameroon, given that oil represents a relatively small share of government revenue—about 13 percent in 2017—a very high price of oil would be needed to balance the budget.

- To achieve a sustainable growth pickup, oil-exporting countries should continue to adjust their fiscal positions and advance economic diversification, taking advantage of the respite provided by the uptick in commodity prices. Boosting non-oil revenues and enhancing the efficiency of public spending will also be essential to ensure macroeconomic stability over the medium term. Countries that opted for exchange rate flexibility need to eliminate foreign exchange restrictions and multiple currency practices and allow their exchange rate to adjust to reflect economic fundamentals.
- The oil-importing countries, which have been growing on the back of large public investment outlays—often resulting in substantial debt accumulation—must aim to hand over the investment momentum from the public to the private sector and reduce fiscal imbalances to ensure sustainable growth over the medium term.

Revenue Mobilization to Reduce Debt Vulnerabilities and Build Fiscal Space

Sub-Saharan Africa has enormous needs in terms of infrastructure and social development. With debt vulnerabilities rising in the region, sub-Saharan African countries will need to further rely on sustainable sources of financing, making domestic revenue mobilization one of the most urgent policy challenges for the region. As discussed in Chapter 2, sub-Saharan African countries could mobilize about 3 to 5 percent of GDP in additional tax revenues in the next few years, making room for spending on infrastructure and human capital (Gaspar and Selassie 2017). Successful revenue mobilization efforts require an appropriate tax policy design—including the expansion of the base for value-added and direct taxes—implemented by effective revenue administration institutions. In addition, pursuing revenue administration reforms in the context of a medium-term plan is a strategy that has proved successful, even in countries starting from low-capacity implementation. Moreover, policies targeting improvement in

governance and control of corruption, and ensuring efficient and transparent public spending, can go a long way in terms of motivating citizens to pay their fair share of taxes, ultimately favoring revenue mobilization.

Sustainable Growth Requires Reinvigorating Private Investment

With countries seeking to transition to sustainable growth paths, nurturing a dynamic private sector is a key priority. As discussed in Chapter 3, sub-Saharan Africa has historically the lowest level of private investment as a share of GDP among regions with similar levels of development. Policies should ensure that there is a favorable economic and institutional environment supported by high-quality infrastructure and a skilled labor force. Essential measures include ensuring macroeconomic stability, strengthening the regulatory and insolvency frameworks, increasing trade liberalization, and deepening access to credit. Innovative financing structures, such as public-private partnerships, can also be considered as long as an appropriate assessment of the contingent liabilities for the public sector is assured.

The Long-Term Challenge: Can Sub-Saharan Africa Catch Up?

Turning the current recovery into a sustainable growth spell is imperative to ensure a sustainable improvement in living standards and social development indicators. Yet, under current policies, medium-term growth in the region is projected to fall far short of the levels experienced in the 2000s and, at the current rate of population growth, also well below of what is needed to lift the living standards of the region's population.

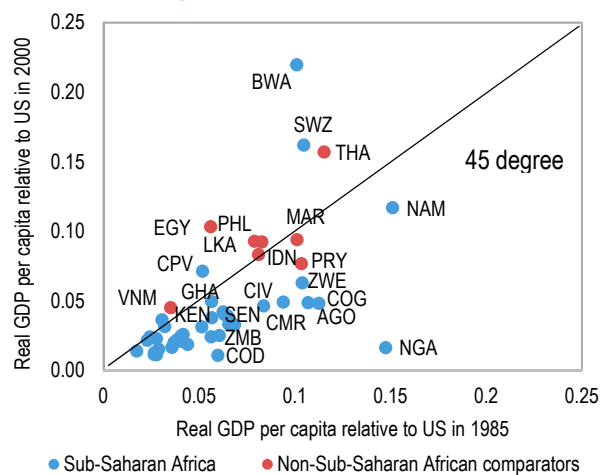
Income convergence has proved an elusive goal for many countries. Between 1985 and 2000, most low-income sub-Saharan economies were unable to close the per capita income gap relative to the frontier (that is, the United States) and, in this respect, they were not very different from most other low-income comparator countries

(Figure 1.29).^{2,3} But, in the 2000s, when growth accelerated in sub-Saharan Africa, most comparator countries from other regions achieved even higher growth rates. This enabled most of them to narrow significantly the income gap relative to the United States, which most sub-Saharan African countries have not been able to accomplish thus far and, on current projections, seem less well-positioned to accomplish in the years to come (Figure 1.30).

There have been many commonalities but also many differences between the economic strategies adopted by the sub-Saharan African countries and fast-growing low-income countries from other regions. During the high-growth years, sub-Saharan Africa was energized by the wave of trade and capital account liberalizations, a boom in commodity prices, and debt relief providing much-needed fiscal space. At the same time, the fast-growing comparators were less dependent on commodities and typically relied more on the easier trading and capital account environment to attract foreign direct investment in support of export diversification (mainly toward manufacturing) and structural transformation.

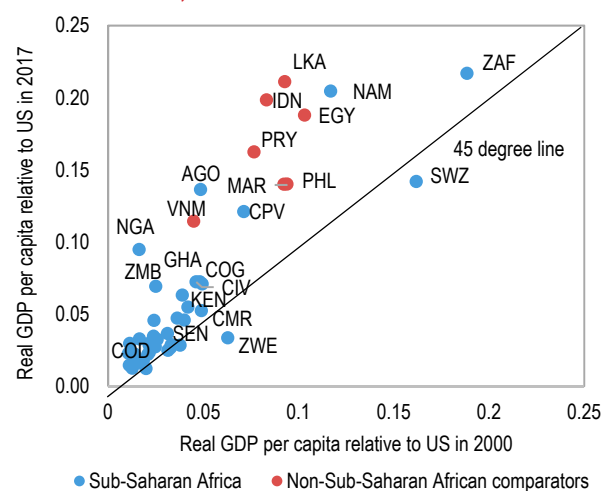
While many sub-Saharan African countries, especially those that are not resource intensive, have also achieved significant progress in export diversification and structural transformation, the region's commodity exporters have seen increased specialization in exports of primary commodities (IMF 2017c). In fact, major oil discoveries explain several exceptionally high increases in GDP per capita (Angola, Chad, Equatorial Guinea, Nigeria). Nevertheless, some other sub-Saharan African countries—Burkina Faso, Ethiopia, Ghana, Rwanda, and Tanzania—have also achieved relatively high growth rates since the mid-1990s.⁴ Although they benefited directly or indirectly from higher commodity prices, their sustained high growth was not driven solely by the exploitation of natural resources.

Figure 1.29. Sub-Saharan Africa: Real GDP per Capita Relative to the US, 1985 and 2000



Sources: Penn World Tables 9.0; IMF, World Economic Outlook database; and IMF staff calculations.
Note: See page 91 for country abbreviations table.

Figure 1.30. Sub-Saharan Africa: Real GDP per Capita Relative to the US, 2000 and 2017



Sources: Penn World Tables 9.0; IMF, World Economic Outlook database; and IMF staff calculations.
Note: See page 91 for country abbreviations table.

² These countries are Egypt, Indonesia, Sri Lanka, Morocco, the Philippines, Paraguay, Thailand, and Vietnam. They managed to grow from low-income to middle-income status without sizable commodity exports.

³ Being above (respectively below) the 45-degree line indicates that an economy is converging (respectively diverging); the distance to the line indicates the speed of convergence (or divergence).

⁴ The sample countries were chosen on the basis of average real output growth greater than 5 percent during 1995–2016 and real per capita GDP growth of more than 3 percent over the same period. Angola, Cabo Verde, and Equatorial Guinea also meet these criteria. Angola is excluded from the sample because it is heavily dependent on oil exports, while Cabo Verde and Equatorial Guinea are excluded due to the high volatility in their output growth.

The analysis of growth experiences in sub-Saharan Africa reveals many common characteristics. These include improved macroeconomic policies and stability, strong policymaking institutions, high investment in both physical and human capital, effective use of foreign aid, and deeper financial markets (IMF 2013). Sustaining growth in sub-Saharan African countries has been found to be associated with a supportive external environment—whether better terms of trade or favorable global financial conditions—and improvements in the quality of institutions, as well as sound fiscal management to prevent excessive public debt accumulation, monetary policy geared toward low inflation, outward-oriented trade policies, and macro-structural policies to reduce market distortions at the domestic level (IMF 2017d). And, to the extent that the growth strategy is to be anchored on economic diversification, the right policy mix should be tailored to the country-specific circumstances to tap the existing strengths—as illustrated by the success of Botswana—while enabling the private sector to expand.⁵

In this context, the challenge for sub-Saharan Africa is that growth models that proved successful elsewhere could become more difficult to emulate given current trends. The rapid robotization of manufacturing and the risk of a wave of inward-looking policies may make it more difficult for sub-Saharan African countries to compete in manufacturing. It is therefore of utmost importance to identify and resolve the obstacles and distortions that are holding back private sector activity in order to stimulate productivity growth whether it be in

existing sectors or in new sectors of the economy. In addition, the business environment should be improved by implementing reforms that foster governance, financial market deepening, and trade liberalization.

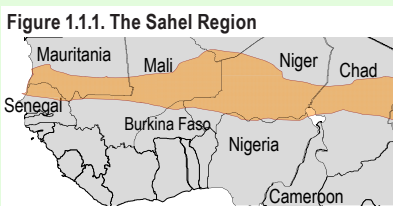
An additional challenge for sub-Saharan African countries aiming to emulate the successes in other regions is to harness the demographic dividend (IMF 2015c). The implications of current trends include a rapid increase in the working-age population and a demographic transition; in most other parts of the world, similar transitions have been associated with higher saving and investment, raising potential and current growth. However, to harness such a dividend, sub-Saharan African economies would have to create on average about 18 million jobs a year until 2035. Deliberate policies would be needed to encourage gradual structural transformation, allowing resources to move from the informal low-productivity sector to higher-productivity activities.

Finally, while a sustained acceleration in growth is important, it will not by itself result in the improved living standards and social outcomes that the region desires. The rapid growth in per capita income experienced in sub-Saharan Africa during 2000–14 has been accompanied by some progress in improving social outcomes—undernourishment rates have fallen from over 25 percent of the population to around 20 percent; poverty headcount rates have fallen from 60 to 40 percent; and school enrollment has increased by 60 percent. But much remains to be done.

⁵ Macroeconomic stability, access to credit, good infrastructure, a conducive regulatory environment, and a skilled workforce, are all associated with higher economic diversification (IMF 2017c).

Box 1.1. Grappling with Rising Insecurity in the Sahel Region

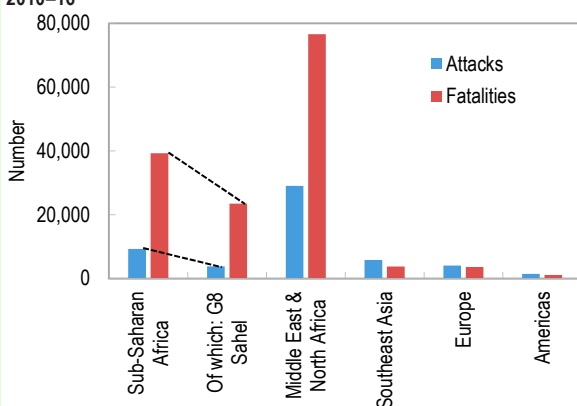
A surge in terrorism in the Sahel region (see Figure 1.1.1) compounds existing challenges for a subregion of about 150 million inhabitants that is already grappling with high rates of poverty, climate change vulnerability, and acute shortages of physical and human capital. In addition to the human costs—roughly 30 million people are suffering from food insecurity and 5 million are refugees and internally displaced persons—the terrorist activities have resulted in increasing military and other security-related outlays. Accommodating the additional expenditure needs while ensuring macroeconomic stability and debt sustainability, and preserving fiscal space for other expenditures needed for high and sustainable growth is a major challenge. Key steps to address it include strengthening revenue mobilization, improving governance, and increasing the efficiency of public investment.



Source: IMF staff.

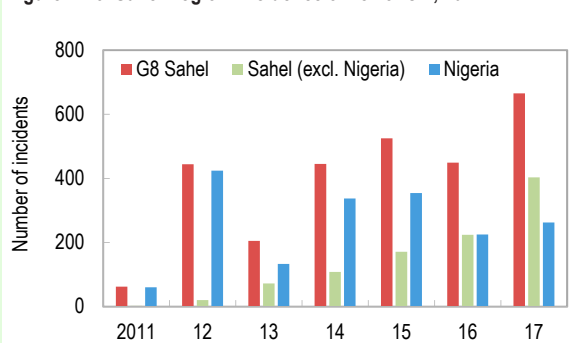
The incidence of terrorism in the Sahel region is high in both absolute and relative terms: the region experiences more than half of all attacks within sub-Saharan Africa and, except for the Middle East and North Africa, levels of terrorism far greater than in other larger and more populous regions (Figure 1.1.2). Most countries in the Sahel region have experienced spikes in terrorist activity at different points in time, causing asynchronicities in fiscal and economic effects. And the general trend has been a rise in terrorist activity in recent years, most notably for the countries other than Nigeria. In 2017, for the first time, these countries together experienced more attacks than Nigeria (Figure 1.1.3).

Figure 1.1.2. Selected Regions: Regional Distribution of Terrorism, 2010–16



Source: Global Terrorism Dataset.

Figure 1.1.3. Sahel Region: Incidence of Terrorism, 2011–17



Sources: Control Risks; and IMF staff estimates.

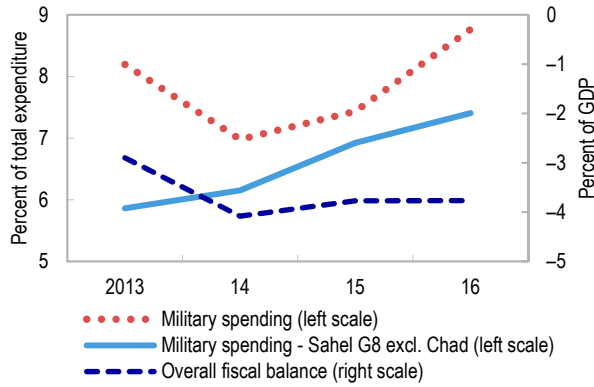
The collapse of the Libyan government in 2011 helped arm extremist militant groups and weaken governance. Mali was the first country to be affected, and, despite the signing of the Algiers peace agreement in mid-2015 to formally end the conflict, attacks from jihadists continue to spill across borders to other Sahel countries. Niger, Chad and northern Cameroon also experienced attacks from Boko Haram in northeastern Nigeria, which have escalated in violence and displaced many people. Senegal and Mauritania, which have largely been spared from terrorist attacks, are the exception.

Increased terrorist activity imposes significant macroeconomic and fiscal costs. The share of military expenditure in public expenditure has been on the rise. At the same time, the commodity-producing countries in the Sahel have seen large falls in tax revenues as oil and uranium prices collapsed. Efforts to raise domestic nonresource revenues have been hampered by slowing economies and, particularly in the case of Niger, a fall in customs revenue following disruptions to traditional trade routes due to the conflict (Figure 1.1.4).

This box was prepared by Dalia Hakura, Trevor Lessard, and Shirin Nikaein Towfighian.

Box 1.1. (continued)

Figure 1.1.4. Sahel Region: Military Spending and Fiscal Balance, 2013–16



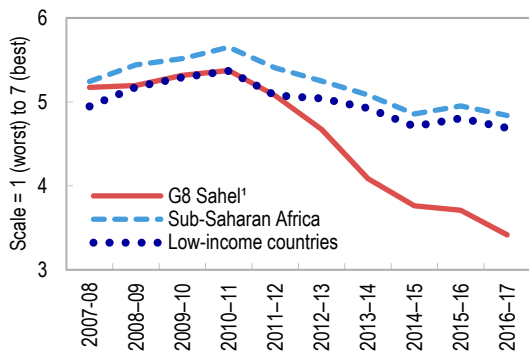
Sources: IMF, World Economic Outlook database; Stockholm International Peace Research Institute; and IMF staff estimates.

Beyond the direct fiscal costs, the business environment has deteriorated, with most Sahel countries experiencing a sharper increase in terrorism-related business costs in recent years (Figure 1.1.5). At the same time, support from development partners has been declining (Figure 1.1.6).

Against this backdrop, Sahel countries need to continue to pursue their development agendas to achieve high and sustainable growth. Efforts should be centered on creating fiscal space for priority security, social, and infrastructure spending, which is essential for boosting long-term growth, ensure greater inclusion, and improve people’s livelihoods to break the cycle of extremism and violence.

This will require strengthening domestic revenue mobilization and boosting the efficiency of public investment. Other actions to strengthen governance and transparency are also important. Meanwhile, given the vastness of the Sahel and the entrenched nature of security threats, a prolonged, calibrated, and coordinated expansion of security operations is envisaged as a comprehensive response to the Sahel crisis. The associated fiscal costs will continue to place a heavy burden on the ability of national authorities to deliver on their sustainable development goals.

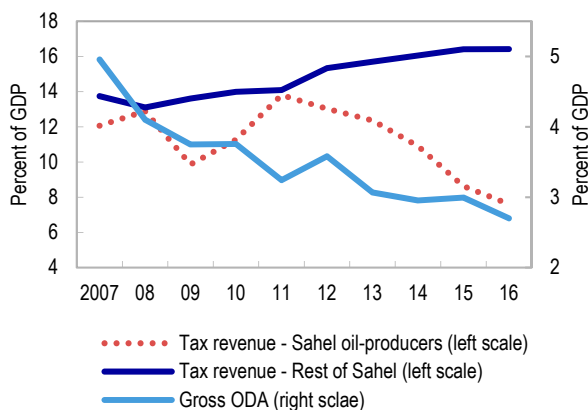
Figure 1.1.5. Selected Regions: Business Costs of Terrorism, 2007–17



Source: Global Competitiveness Index.

¹ Data for Niger are not available.

Figure 1.1.6. Sahel Countries: Revenue and Official Development Aid, 2007–16



Sources: IMF, World Economic Outlook database; Organisation for Economic Co-operation and Development; and IMF staff estimates.

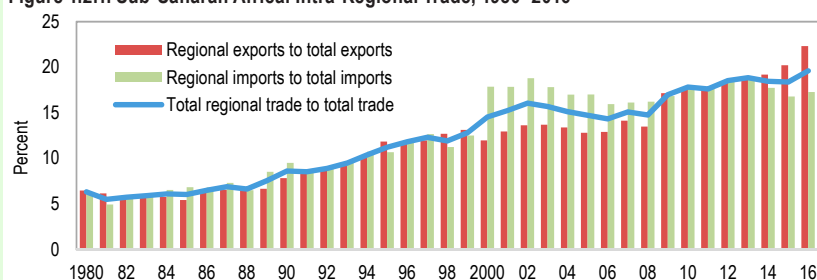
Note: ODA = official development aid.

Box 1.2. Regional Spillovers: A Steady Strengthening of Diverse Linkages

Regional spillovers in sub-Saharan Africa occur through a variety of channels, including trade, banking relations, remittances, and conflict (see Box 1.1). After close to two decades of strong economic activity, growth in sub-Saharan Africa decelerated markedly beginning in mid-2014, reaching its lowest level in 2016. While most economies that had suffered a slowdown appear to be rebounding, in some countries—including Nigeria and South Africa, the region's largest economies—growth remains subdued. Assessing the strength and the pattern of regional spillovers helps explain the extent to which the current economic conditions in the largest economies spill over to the rest of sub-Saharan Africa.

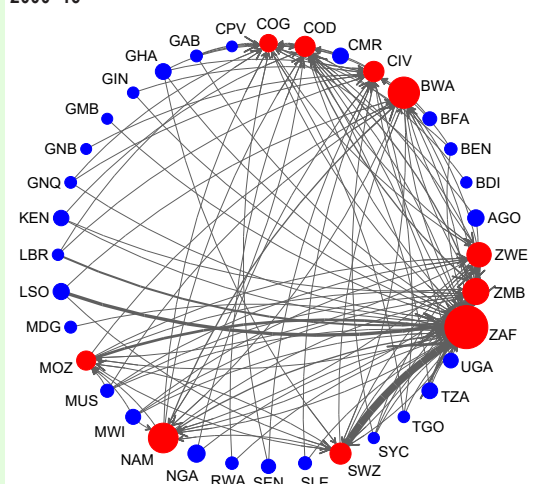
Regional trade linkages are steadily gaining strength. Regional trade represented 6 percent of total exports in 1980 before taking off in the early 1990s, and eventually reaching 20 percent in 2016 (Figure 1.2.1). These developments are partly explained by faster growth in sub-Saharan Africa compared to the rest of the world on average and partly by subregional trade agreements that have helped reduce tariff barriers and foster economic

Figure 1.2.1. Sub-Saharan Africa: Intra-Regional Trade, 1980–2016



Sources: IMF, *Direction of Trade Statistics*; IMF, World Economic Outlook database; and IMF staff calculations.

Figure 1.2.2. Sub-Saharan Africa: Intra-Regional Trade, 2000–16



Sources: IMF, *Direction of Trade Statistics*; IMF, World Economic Outlook database; and IMF staff calculations.

Note: The thickness of the arrows refers to the size of bilateral exports in percent of GDP of the exporting country. The top 10 destinations are featured in red, the other countries in blue. See page 91 for country abbreviations table.

integration. Most regional trade and improvements in trade integration have been taking place within, rather than between, zones of economic integration such as the SADC, the EAC, the WAEMU and the CEMAC.¹ Nevertheless, compared with advanced economies, regional trade remains low, inhibited by weak infrastructure and transport linkages, misaligned regulatory regimes, and a preponderance of informal trade.

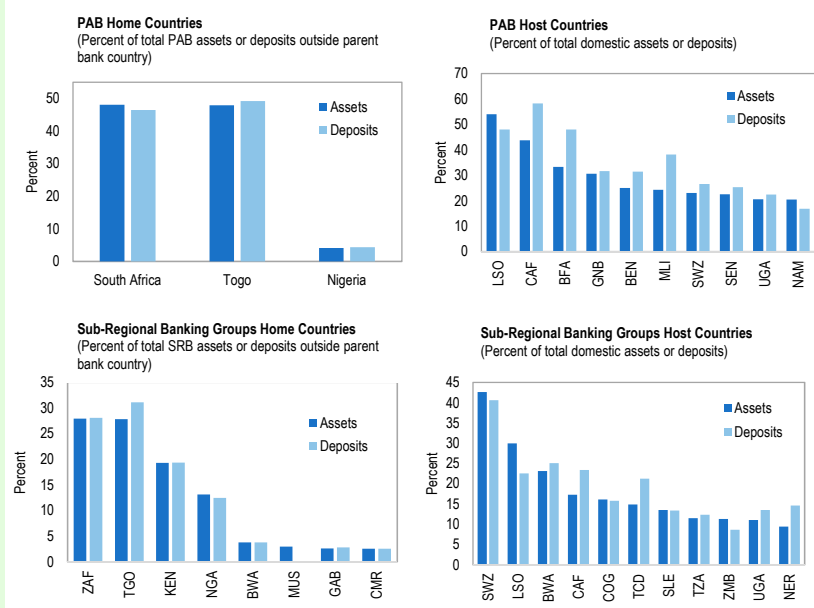
Trade linkages are a primary source of intraregional growth spillovers. Demand for regional exports is highly concentrated, with 10 sub-Saharan African countries representing 65 percent of total regional demand for intraregional exports and a significant share of the exporting countries' economies (Figure 1.2.2). Empirical work suggests a spillover of about 0.11 percent to a country's GDP growth for every percentage point change in the growth of the trading partners (Arizala and others 2018). Thus, an economic deceleration in importing countries, especially large ones like South Africa, has the potential to weaken regional export demand and become a source of negative spillovers.

This box was prepared by Matthieu Bellon and Margaux MacDonald.

¹ SADC is the Southern African Development Community; EAC is the East African Community; WAEMU is the West African Economic and Monetary Union; CEMAC is the Central African Economic and Monetary Union.

Box 1.2. (continued)

Figure 1.2.3. Pan-African Banks and Sub-Regional Banks: Home and Host Countries, 2016

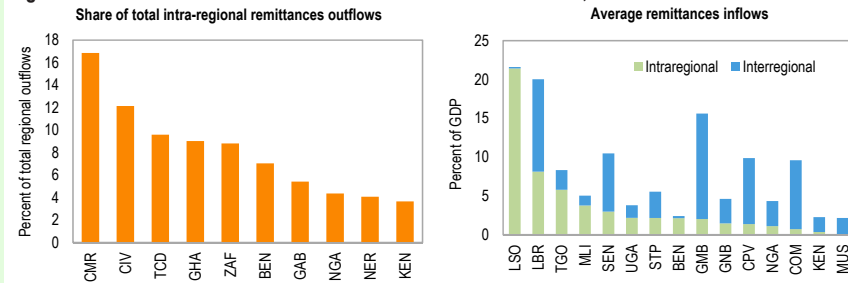


Sources: Fitch Connect; IMF, *International Financial Statistics*; and IMF staff calculations.
Note: PAB = pan-African banks; SRB = sub-regional banks. See page 91 for country abbreviations table.

Pan-African and subregional banks are increasingly active in sub-Saharan Africa and represent a second important spillover channel.² Pan-African banks and subregional banks are highly concentrated, with banking groups based in South Africa, Togo, and Nigeria home to all pan-African bank assets and about 70 percent of subregional bank assets (Figure 1.2.3). These banks have primarily expanded across sub-Saharan Africa as subsidiaries, via the acquisition of smaller existing banks or, to a lesser extent, by establishing branches. The foreign subsidiaries are widely dispersed, and tend to have a larger presence in smaller countries, implying that any spillovers via banking groups could be far-reaching. Growth rates of the countries where banks are headquartered are correlated with credit growth in those countries where pan-African and

subregional banks operate. This could be explained by deposit sharing, syndicated lending, or reputational linkages between parent banks and their subsidiaries, if the subsidiary is systemically important in its host country.

Figure 1.2.4. Sub-Saharan Africa: Remittance Inflows and Outflows, 2010–15



Source: World Bank, Migration and Remittances database.
Note: See page 91 for country abbreviations table.

Remittances between countries in sub-Saharan Africa are gaining in relative importance. Remittance inflows to sub-Saharan Africa have reached elevated levels in some countries. Furthermore, the contribution of regional remittances increased to one-third of the total in 2015. The origin of these flows is concentrated, with the top five senders accounting

for 55 percent of total outflows (Figure 1.2.4, left panel). Some recipient countries are substantially exposed to remittance inflows (Figure 1.2.4, right panel). Growth spillovers between countries linked through remittance flows are estimated to be of comparable strength to those between trading partners (Arizala and others 2018). This suggests that West African countries, for example, can expect increased remittance inflows from fast-growing large remittance senders such as Côte d’Ivoire and Ghana.

² Pan-African banks refer to sub-Saharan African banking groups majority owned and headquartered in sub-Saharan Africa and operating in 10 or more sub-Saharan African countries. Subregional banks refer to sub-Saharan African banking groups majority owned and headquartered in sub-Saharan Africa operating in between 3 and 10 sub-Saharan African countries.

Box 1.3. The African Continental Free-Trade Area (AfCFTA) Agreement: What to Expect

In addition to increased trade flow both in existing and new products, the recently launched AfCFTA could generate substantial long-term economic benefits for African countries. These benefits include increased efficiency and productivity from improved resource allocation; higher cross-border investment flows and technology transfers; and deeper trade integration. To ensure these benefits, African countries will need to reduce their wide infrastructure gaps and improve the business climate. At the same time, measures should be taken to mitigate the differential impact of trade liberalization on certain groups as activities migrate to locations with comparatively lower costs.

Key Elements of the AfCFTA

On March 21, 2018, representatives of a large number of member countries of the African Union (AU) signed the African Continental Free Trade Area (AfCFTA) agreement.¹ This agreement comes five years after the AU heads of state decided to move to the AfCFTA, and almost two years after negotiations began. Once fully implemented, the AfCFTA is expected to cover all 55 African countries, with a combined GDP of about \$2.2 trillion (based on IMF, World Economic Outlook database) and a population of over 1 billion. The agreement will become effective once at least 22 member countries have ratified it. The AfCFTA builds on negotiations of the Tripartite Free Trade Area (TFTA), composed of the Southern African Development Community (SADC); Common Market for Eastern and Southern Africa (COMESA); and East African Community (EAC), and aims to achieve four objectives: (1) creating a continental customs union; (2) expanding intra-African trade; (3) resolving the challenges of overlapping memberships in regional economic communities (RECs); and (4) enhancing competitiveness. The AfCFTA also seeks to build on the level of integration attained by existing RECs, which are expected to contribute to its institutional structure. In the long-run, the RECs' trade functions are expected to be consolidated at the continental level.

Phase I of the AfCFTA agreement provides a framework for the liberalization of trade in goods and services, and a mechanism for dispute settlement. For trade in goods, the agreement sets the path for eliminating tariffs on 90 percent of product categories.² For the remaining 10 percent of product categories, countries can implement tariff reductions over a longer period, in the case of sensitive goods, or maintain the same tariff, for excluded products. Member countries have also agreed to the liberalization of trade in services through a request-and-offer approach and based on seven identified priority sectors; logistics and transport, financial services, tourism, professional services, energy services, construction, and communications.³ Separate negotiations, which are expected to begin in late 2018, will be needed for Phase II of the AfCFTA. This phase will focus on competition policy, investment, and intellectual property rights.

Current State of Trade in Africa

The patchwork of intra-African trade agreements includes eight RECs, and four subregional groupings.⁴ Nonetheless, Africa conducts much of its export trade, dominated by commodities, with countries outside the continent.

This box was prepared by Paolo Cavallino, Nana Hammah, Garth Nicholls, and Hector Perez-Saiz

¹ See <https://au.int/>

² International Centre for Trade and Sustainable Development (ICTSD). <https://www.ictsd.org/bridges-news/bridges-africa/news/talking-cfta-with-albert-muchanga-the-au%E2%80%99s-commissioner-for-trade>.

³ International Centre for Trade and Sustainable Development (ICTSD). https://www.ictsd.org/sites/default/files/research/trade_in_services_negotiations_digital_0.pdf.

⁴ The regional economic communities are Arab Maghreb Union (AMU); Community of Sahel-Saharan States (CEN-SAD); Common Market for Eastern and Southern Africa (COMESA); East African Community (EAC); Economic Community of Central African States (ECCAS); Southern African Development Community (SADC); Economic Community of West African States (ECOWAS); and Inter-Governmental Authority on Development (IAD). The subregional groupings are Economic and Monetary Community of Central Africa (CEMAC); Indian Ocean Commission (IOC); Southern African Customs union (SACU); and Southern African Development Community (SADC). See Sebahizi (2017).

Box 1.3. (continued)

In 2016, 18 percent of Africa's total trade was conducted within the continent. Much of it was driven by the SADC and the EAC, which had the highest levels of intra-union trade (over 20 percent of total trade) compared with other groupings (Figure 1.3.1). In 2015, manufactured goods accounted for only 19 percent of Africa's exports to the rest of the world. At the same time, trade within Africa is dominated by manufactured goods, and financial and retail services.⁵ Tariffs and nontariff barriers among African countries remain high. For example, in 2016, the applied average most-favored-nation tariff for African countries, at 14.5 percent, was about twice that for the European Union.⁶ Furthermore, the maximum tariff rate on any product in sub-Saharan Africa was close to 400 percent, while the simple average tariff across all products was slightly less than 10 percent, and duty-free line items represented only 28½ percent of all tariff lines.⁷

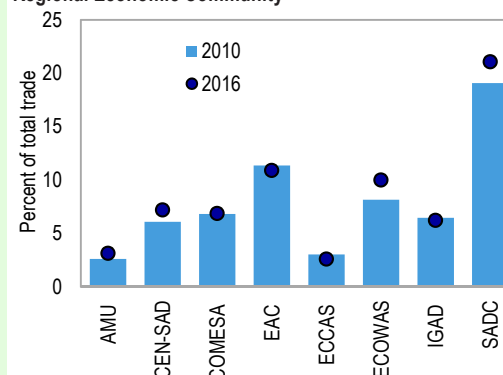
Potential Benefits of the Agreement

African countries can overall expect to reap four key benefits from the AfCFTA. First, the AfCFTA is expected to invigorate intraregional trade. Mevel and Karingi (2012) estimate that the removal of all tariff barriers within the continent and a 50 percent reduction of nontariff barriers could increase intra-African trade by almost 130 percent within five years. Second, although the effect of greater trade integration on output is likely to be small in the short run, it has been estimated that the above changes, combined with improved trade facilitation, could increase their GDP by as much as 5 percentage points in 15 years (Chauvin and others 2016). Third, Anderson and others (2015) show that the dynamic interaction between growth and capital accumulation can increase the static gains from trade liberalization by more than 60 percent. Finally, the AfCFTA could be a stepping stone toward deeper trade integration. Mevel and Karingi (2012) estimate that the creation of a continental customs union, in addition to the AfCFTA, could increase African exports to the rest of the world by 4 percent within five years. But these potential gains are unlikely to be uniform as activity migrates to locations with comparatively lower costs within the region. Mitigating the differential effects would require countervailing measures (for example, training program for workers) to ensure a smooth reallocation of labor and capital. Furthermore, the elimination of tariffs will lead to significant tariff-revenue losses for governments at a time when fiscal positions need to be strengthened, suggesting the need for further progress in domestic revenue mobilization.

Nontariff Barriers to Trade in Africa

Despite the potential economic benefits of the AfCFTA, fully realizing these benefits would require a reduction in infrastructure gaps and an improvement in the business environment in Africa. Table 1.3.1 shows that several indicators related to the quality of ports, air transportation, and other measures of infrastructure efficiency are relatively low in Africa compared with other regions. The reduction of ground transportation costs is especially critical to encouraging intraregional trade, given the geographic configuration of the continent (World Bank 2009). The table also shows low scores for the region in terms of customs efficiency and other administrative procedures required for international trade.

Figure 1.3.1. Sub-Saharan Africa: Intra-Regional Trade by Regional Economic Community



Source: United Nations Conference on Trade and Development.
Note: See page 90 for country groupings table.

⁵ United Nations Economic Commission for Africa (UNECA). <https://www.uneca.org/stories/eca-urges-africa-push-ahead-continental-free-trade-area>.

⁶ World Trade Organization. https://www.wto.org/english/tratop_e/tariffs_e/tariff_data_e.htm.

⁷ World Bank and United Nations Conference on Trade and Development – World Integrated Trade Solution (WITS). <https://wits.worldbank.org/CountrySnapshot/en/SSF/textview>.

Box 1.3. (continued)

In addition, an enabling business environment is particularly relevant to facilitating intraregional trade. Various indicators compiled by the World Bank show room for improvement in decreasing the cost and time necessary to create new businesses. Finally, financial depth and inclusion is lower in Africa compared with other regions, so access to trade finance or bank funding to create or expand businesses will be key to promoting the AfCFTA agenda.

Table 1.3.1. Barriers to Trade in Africa

Variable	Africa	Sub-Saharan Africa	Advanced Economies	North America	South America	Central America	Asia
Level of infrastructures:							
Container port traffic (WDI)	0.09	0.07	0.75	0.11	0.12	0.38	0.65
Air transport passengers, per capita (WDI)	0.23	0.25	2.6	1.6	1.43	0.93	1.18
Quality of port infrastructure,(1=low to 7=high) (WDI)	3.64	3.64	5.35	5.21	3.65	4.15	4.17
Liner shipping connectivity index (WDI)	14.38	12.72	50.64	58.51	24.16	16.36	35.11
Infrastructure efficiency score (LPI)	2.32	2.34	3.75	3.73	2.56	2.43	2.92
Customs efficiency score (LPI)	2.35	2.39	3.58	3.53	2.52	2.5	2.88
International shipments efficiency score (LPI)	2.52	2.52	3.56	3.4	2.76	2.81	3.01
Timeliness efficiency score (LPI)	2.87	2.86	4.09	3.88	3.21	3.1	3.44
Overall logistics efficiency score (LPI)	2.49	2.51	3.74	3.68	2.77	2.69	3.05
Trading costs:							
Burden of customs (1=inefficient to 7=efficient) (WDI)	3.6	3.6	5	4.6	3.5	3.7	4.3
Time to export (days) (DB)	29.3	30.9	10.2	9.8	19.8	15.4	20
Time to import (days) (DB)	36.4	38.5	9.3	9.7	24.3	15.3	21.6
Cost to export (USD per container) (DB)	2,149	2,302	1,054	1,395	1,809	1,181	1,026
Cost to import (USD per container) (DB)	2,819	3,056	1,102	1,570	2,020	1,329	1,092
Other:							
Start business (days) (DB)	31.2	33.3	11.2	6.5	72.4	26.9	30.5
Start business (cost as % of income per capita) (DB)	69.7	74	4.1	7.2	27	39.8	24.1

Sources: World Bank, Doing Business Indicators; World Bank, Logistics Performance database; and World Bank, World Development Indicators.

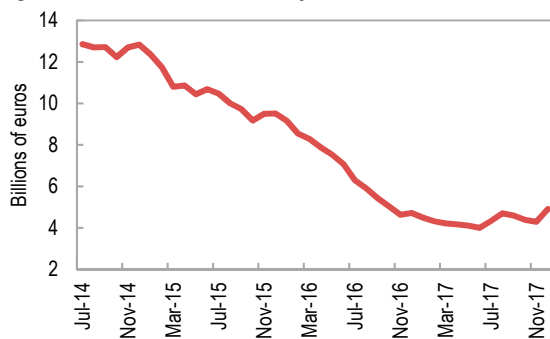
Box 1.4. CEMAC: Implementation of the Regional Economic Strategy and Road Ahead

The national authorities and regional institutions of the Central African Economic and Monetary Community (CEMAC) have started implementing the regional strategy, adopted in December 2016 (See Box 1.2 in IMF 2017c) to help avert the depletion of international reserves and continue to support the monetary union arrangement. The member countries' fiscal adjustment efforts—along with the regional central bank's tight monetary stance and strict enforcement of foreign exchange regulations, external financing in support of the national programs, and higher oil prices—have contributed to stabilizing international reserve coverage, at 2.5 months of imports at the end of 2017 (Figure 1.4.1). This progress allowed for the completion of IMF program reviews with three CEMAC member countries (Cameroon, Central African Republic, Gabon) in December 2017. Reaching agreement on debt restructuring between the Chadian government and its external creditors paved the way for the conclusion of the IMF program review with Chad. Meanwhile, program negotiations with Republic of Congo and Equatorial Guinea are ongoing.

At the national level, fiscal consolidation efforts are underway, but risks remain. As envisaged at the outset of the regional strategy, these efforts focused primarily on cuts in nonpriority spending, with overall primary spending declining from 27.5 percent of non-oil GDP in 2016 to 22.8 percent of non-oil GDP in 2017. While this streamlining will continue over the medium term, measures to increase non-oil revenue should play a more prominent role in fiscal consolidation starting in 2018. Also, most of the windfall from higher oil revenues following the recent increase in international oil prices would need to be saved and used to increase fiscal and external buffers or to accelerate the repayment of domestic budgetary arrears relative to program assumptions. Overall, fiscal consolidation efforts would provide for a reduction of the overall fiscal deficit (excluding grants) across CEMAC member countries from 4.2 percent of GDP in 2017 to 0.7 percent of GDP in 2020, while preserving social protection programs (Figure 1.4.2). This adjustment will in turn allow both for the repayment of budgetary arrears and, along with the gradual recovery in nominal growth, for a gradual reduction in public debt ratios from 2018 onward, from about 52 percent of GDP at the end of 2017 to 49 percent of GDP at the end of 2020. With the budgetary financing mix shifting toward external financing, domestic debt is expected to drop as a share of GDP from close to 20 percent at the end of 2017 to less than 14 percent at the end of 2020, while external debt would remain broadly stable. While the overall objectives of the regional adjustment strategy are broadly being attained, there are indications that fiscal consolidation is experiencing initial challenges in some countries, highlighting the risks of possibly weaker reform efforts in the face of political or social resistance.

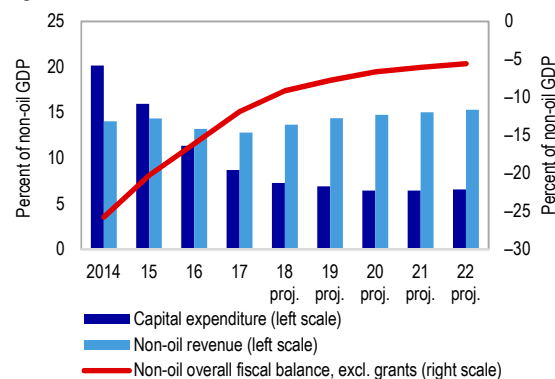
These efforts are supported by the regional central bank's (BEAC's) tight monetary stance and decision to eliminate statutory advances. The expansion of the BEAC's advances to governments in response to the fall in oil prices had allowed public spending to remain well above the level consistent with internal stability. With unchecked tightening of monetary aggregates and a high import content of public spending on infrastructure,

Figure 1.4.1. CEMAC: Reserves, July 2014–December 2017



Sources: Central African Economic and Monetary Community (CEMAC) authorities; and IMF staff calculations.

Figure 1.4.2. CEMAC: Fiscal Indicators, 2014–22



Sources: Central African Economic and Monetary Community (CEMAC) authorities; and IMF staff calculations.

This box was prepared by Edouard Martin.

Box 1.4. (continued)

this practice has put considerable downward pressure on foreign reserves. The elimination of new central bank credit to government at the end of 2017 is therefore a major step toward restoring fiscal and monetary discipline in the region. In 2018, the central bank will pursue its efforts to modernize its monetary policy operations framework, with a view to anchoring it on the policy rate (rather than monetary aggregates) as the intermediate target and strengthening the transmission mechanism. The BEAC will notably (1) simplify its monetary policy instruments; (2) base liquidity management on the projection of autonomous factors; (3) strengthen the framework for required reserves; (4) adjust its collateral framework; and (5) set up an emergency liquidity assistance (ELA) framework. Last, the central bank will support the development of financial markets, including through promoting the establishment of financial sector databases (on financial information, payment incidents, and credit risks) and of a credit bureau.

The regional banking supervisor has adopted an action plan to improve the effectiveness of bank supervision. This plan aims to help the banks address high nonperforming loans (including by clarifying and better enforcing the provisioning rules), strengthen the implementation of certain prudential regulations (including the risk concentration and connected party lending rules), and resolve banks in difficulty. The supervisor will also continue to implement its strategy plan, which aims primarily at implementing risk-based supervision.

These stabilization policies, which have been essential to avert a deeper crisis, need to be complemented by structural reforms to support more inclusive and sustained growth over the medium term. In this regard, the regional Program of Economic and Financial Reforms outlines specific measures aimed at reducing the region's excessive dependence on oil exports and related revenues. Measures to enhance the business environment include (1) the establishment of trade courts to facilitate the settlement of commercial disputes; (2) the creation of one-stop shops to reduce the time and cost for creating a new company; and (3) the establishment of incubators to facilitate the creation of new businesses through sharing best practices. Actions aimed at deepening regional integration include (1) the harmonization and reduction of custom exemptions through a revised customs code; (2) full implementation of the Common External Tariff; and (3) enacting the freedom to establish companies. Efforts are also necessary to improve governance, fiscal transparency, and public financial management. Implementation of all these reforms, together with enhancing investor confidence by sustained macroeconomic stabilization, would lead to a gradual pickup in non-oil GDP growth of the CEMAC region to 4.8 percent in 2021.

Box 1.5. Protecting Social Spending in IMF-Supported Programs

Since 2009, almost all IMF-supported programs in sub-Saharan African countries have included quantitative targets or structural benchmarks to preserve or increase social spending, comprising mostly outlays on health, education, and social protection. These program features seem broadly effective in protecting or enhancing social and other priority spending.

The new architecture of IMF facilities in low-income countries adopted in 2009 explicitly aims at assisting them in achieving a stable and sustainable macroeconomic position consistent with strong and durable poverty reduction and growth.¹ Under this new architecture, all instruments—Extended Credit Facility, Standby Credit Facility, Rapid Credit Facility, and Policy Support Instrument—should support policies that safeguard social and other priority spending. Such policies are expected to be reflected in the Letter of Intent.

Almost all programs approved since 2009 have included quantitative targets—typically a floor on social or, more precisely defined, priority spending—or structural benchmarks on social sectors.² During 2006–09, about 50 percent of the programs approved under the Poverty Reduction and Growth Facility included a floor on social spending; since 2009, about 90 percent of IMF-supported programs approved for low-income countries, of which about 95 percent of programs approved were for sub-Saharan African countries, included such a floor. Some programs have included stronger safeguards of social and priority spending, for instance by excluding social spending from the fiscal deficit target or providing the possibility to adjust the target to accommodate larger-than-budgeted amounts of social spending (for example, Malawi, Grenada). Beyond an indicative target, some other programs have included structural benchmarks on social protection measures better targeting the most vulnerable groups, increasing the coverage of the cash transfer system, or redesigning the social safety net system.³

Although the definition of social and priority spending varies across countries, it typically covers outlays on health, education, and social protection. Health and education spending is derived from the functional budget classification of those two sectors. Social protection spending includes specific programs to support vulnerable groups, such as maternity and child benefits, women’s and old-age group benefits, youth employment benefits, and social security transfers (for example, Armenia, Honduras, Mali, Mauritania). In some instances, safeguarded spending includes projects with an implicit link to poverty or inequality reduction, such as projects on agriculture, rural electrification, sanitation, gender, and the environment (for example, Burkina Faso, Côte d’Ivoire, Ghana, Guinea-Bissau, Togo). The quantitative floors were often designed to consider only domestically financed social and other priority spending, lest shortfalls in external financing cause the targets to be missed.

The application of indicative targets to monitor program implementation was broadly effective in protecting or enhancing social and other priority spending. The floors on social spending were met in more than two-thirds of the programs; this figure is broadly unchanged when examining only the programs with fiscal consolidation. Based on a sample of countries for which data on the indicative targets and other economic aggregates can clearly be compared, the share of social spending protected by these floors increased between 2010 and 2017 by about 2.5 percentage points of total spending (from an average of about 23.5 percent to 26 percent) and by about 1 percentage point of GDP (from an average of 6 percent to 7 percent) (Figures 1.5.1 and 1.5.2). These results are consistent with earlier studies that demonstrated that spending in social sectors, such as health and education, have effectively expanded under programs supported by the IMF in low-income countries.⁴

This box was prepared by Alice Mugnier, Ivohasina F. Razafimahefa, and Sampawende J. Tapsoba.

¹ IMF (2009).

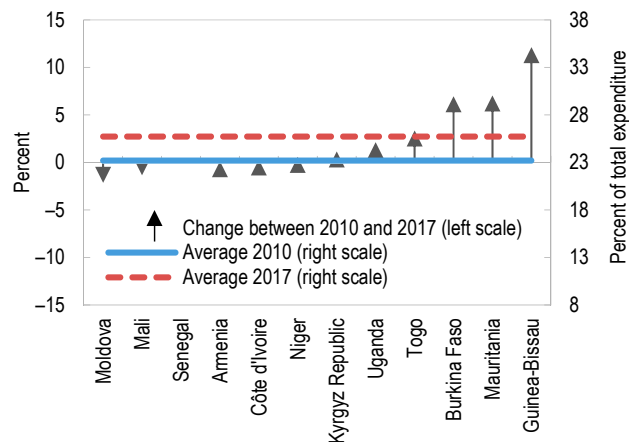
² IMF (2017e).

³ IEO (2017).

⁴ Clements, Gupta, and Nozaki (2011).

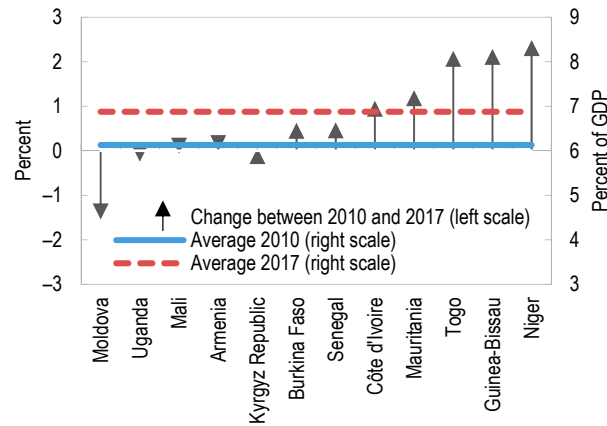
Box 1.5. (continued)

Figure 1.5.1. Selected Countries: Change in Social Spending Indicative Targets, 2010–17



Source: Country authorities; IMF, World Economic Outlook database; and IMF staff calculations.

Figure 1.5.2. Selected Countries: Change in Social Spending Indicative Targets, 2010–17



Source: Country authorities; IMF, World Economic Outlook database; and IMF staff calculations.

Annex 1.1. Fiscal Break-even Oil Price: Definition and Decomposition

Definition and Interpretation

The fiscal break-even oil price is a standard measure used to assess fiscal vulnerability in oil-exporting countries. It is an approximate measure of the oil price needed to balance the budget. This indicator is illustrative and does not necessarily mean that a balanced budget is the appropriate fiscal target.

The fiscal break-even oil price is defined as follows (all variables are expressed in US dollars):

$$\text{Breakeven price} = \text{NOFB}^{USD} \left(\frac{\text{oil price}}{\text{fiscal oil revenue}} \right),$$

in which NOFB^{USD} is the non-oil fiscal balance. The fiscal break-even oil price can be defined as the non-oil fiscal balance divided by the number of oil barrels allotted to the government—that is, fiscal oil revenue divided by the oil price. The fiscal break-even oil price could be interpreted as the oil price needed to balance the budget, assuming that non-oil revenue does not depend on oil price and that the relationship between fiscal oil revenue and oil price is linear.

Decomposition of Changes in the Fiscal Break-even Oil Price

We suggest a novel method to study the contribution of various factors to the dynamics of fiscal break-even oil price. This calculation of the fiscal break-even oil price produces the relative contributions of real exchange rate depreciation and fiscal adjustment to the changes in the break-even price.

The definition of the fiscal break-even oil price can be rewritten as:

$$\text{Breakeven price} = (e * p) \left(\frac{\text{NOFB}^{LCU}}{p} \right) \left(\frac{\text{oil price}}{\text{fiscal oil revenue}} \right),$$

in which the non-oil fiscal balance NOFB^{LCU} is the non-oil fiscal balance in local currency units, e is the nominal exchange rate vis-à-vis the US dollar, and p is the GDP deflator of the oil exporter studied (alternatively the consumer price index could be used). We examine the changes in the fiscal break-even oil price in constant US dollars by dividing it by the US GDP deflator p^* (alternatively the US consumer price index could be used) as follows:

$$\frac{\text{Breakeven price}}{p^*} = \left(\frac{e * p}{p^*} \right) \left(\frac{\text{NOFB}^{LCU}}{p} \right) \left(\frac{\text{oil price}}{\text{fiscal oil revenue}} \right).$$

Taking the difference in logarithms of the fiscal break-even oil price in constant US dollars would show that the fiscal break-even oil price is equal to the difference in logarithms of the real exchange rate vis-à-vis US dollar (depreciation) plus the difference in the logarithm of the non-oil fiscal balance in constant local currency (fiscal adjustment) and a component reflecting the contribution of changes in the (log) volumes of oil exports and/or changes in the oil taxation schedule.

$$\Delta \ln \left(\frac{\text{Breakeven price}}{p^*} \right) = \Delta \ln \left(\frac{e * p}{p^*} \right) + \Delta \ln \left(\frac{\text{NOFB}^{LCU}}{p} \right) - \Delta \ln \left(\frac{\text{fiscal oil revenue}}{\text{oil price}} \right).$$

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