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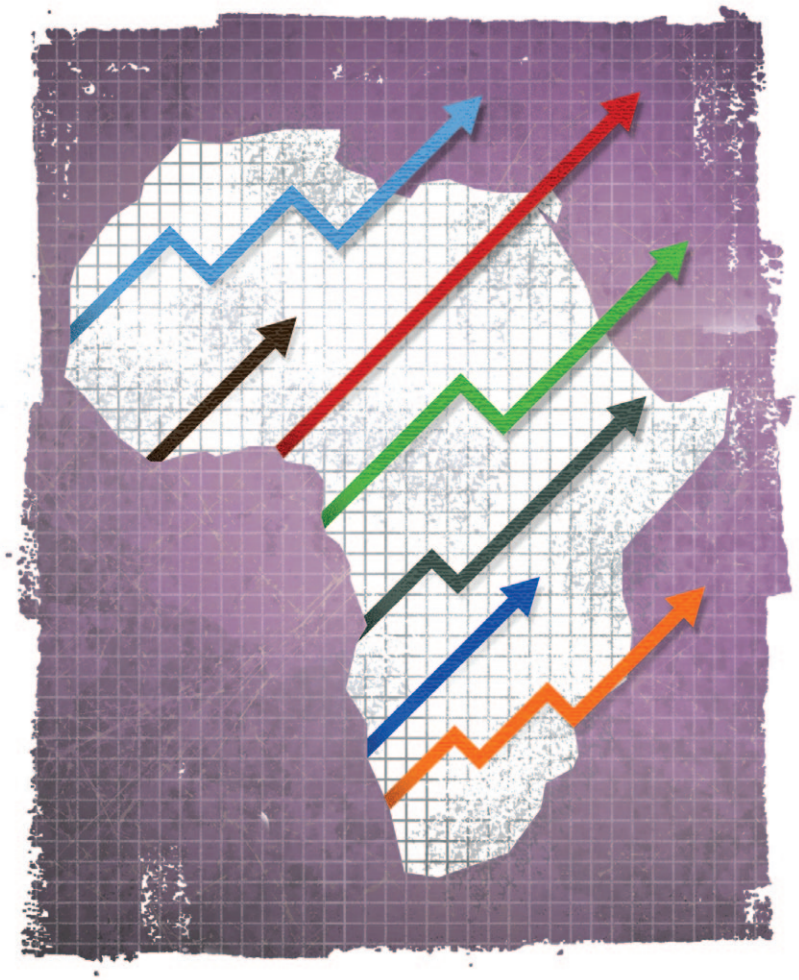
Africa's Pulse

An analysis of issues shaping Africa's economic future



- Sub-Saharan Africa's growth will slow in 2015 amid falling commodity prices.
- Weakening terms of trade present headwinds for the region's commodity exporters; gains for importers.
- The rise of new types of conflict and the potential for disease epidemics are risks to the region's prospects.

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Summary

- The global recovery remains slow-paced amid a sharp drop in oil prices, divergent monetary policy in advanced economies, and varying economic performance across countries.
- Sub-Saharan Africa's growth is projected to slow in 2015 to 4 percent, before picking up moderately in 2016. Slower expansion of economic activity largely reflects the region's vulnerability to falling commodity prices, since it is a net exporter of oil and other commodities.
- The initial terms-of-trade deterioration is estimated at 18.3 percent for the region, with declines of about 40 percent for oil-exporting countries. The drop in terms-of-trade is 0.6 percent for countries exporting agricultural goods, while exporters of metals and minerals show a modest gain of 1.2 percent. Fourteen African countries are more vulnerable, that is with terms-of-trade decline greater than 10 percent, to the slide in commodity prices; 22 countries are less vulnerable, that is, with a negative movement in the terms of trade of less than 10 percent; and 12 countries are more resilient.
- Lower commodity prices will weigh heavily on exporters of these commodities, putting pressure on current account and fiscal balances. Countries that stand to lose the most are the less diversified oil exporters, such as Angola and the Republic of Congo. Other commodity exporters, such as the Democratic Republic of Congo and Mauritania, are also being negatively affected by lower prices for their main traded commodity. By contrast, net oil importers, such as Kenya and Senegal, are set to see modest gains from cheaper energy prices.
- Monetary and fiscal policy responses will affect macroeconomic outcomes, but policy adjustment to the adverse terms-of-trade shock will be especially challenging in countries with depleted policy buffers. Overall, countries that are more vulnerable to the decline in commodity prices have weaker quality of policies and institutions as measured by the World Bank's Country Policy and Institutional Assessment indicators.
- Risks to the economic outlook are tilted to the downside. On the domestic front, a new generation of violent conflict poses security risks with the potential to undermine development gains; and the Ebola epidemic serves to highlight the preexisting weaknesses in the health systems of much of the continent and the potential for systemic risks from communicable diseases. On the external front, a sharper-than-expected slowdown in China, a further decline in oil prices, and a sudden deterioration in global liquidity conditions are the main risks.

Section 1: Recent Developments and Trends

- The global economy is expected to grow by around 2.9 percent in 2015 and 3.2 percent in 2016, signaling a subdued but ongoing recovery. The divergence in economic performance across major advanced economies is narrowing, and developing-country growth is expected to remain stable in 2015, before strengthening in 2016.
- Economic activity in Sub-Saharan Africa is projected to expand at a slower pace in 2015, with real GDP growth averaging 4 percent, substantially below the 4.4 percent annual average growth rate of the last two decades. Growth in per capita GDP is expected to be around 1.5 percent, below recent levels. The pullback in output growth reflects the exposure of the region's economies to adverse terms-of-trade shock. Starting in 2016, growth should gradually pick up to 4.5 percent, as external demand strengthens and commodity prices partially recover.

GLOBAL ECONOMY

The global recovery is continuing, although at a slow pace and with continued uncertainties. Divergences across major economies are expected to narrow this year, as growth levels off in the United States while recovering in the Euro Area. Following an exceptionally strong third quarter, growth in the United States decelerated to 2.2 percent in the final quarter of 2014, and was 2.4 percent for the year. A strong pickup in consumption was consistent with tailwinds from declining oil prices and strong labor market conditions, but a slowdown in exports points to a dampening impact of a stronger U.S. dollar. Mixed data so far this year point to growth of around 2 percent in the first quarter, partly held back by harsh weather conditions. In Japan, a technical recession ended in the fourth quarter with growth at 1.5 percent, supported by a recovery in both consumption and exports. However, the strength of that rebound has been disappointing, and investment has continued to stagnate. In the Euro Area, growth picked up in the final quarter of 2014, albeit to a still modest 1.3 percent. Conditions are in place for further improvements in the first half of the year, as manufacturing and exports are supported by a weakening euro, favorable financing conditions due to the European Central Bank's (ECB's) quantitative easing, and lower oil prices.

Growth in most emerging and frontier markets fell short of expectations in 2014, and forecasts for 2015 continue to be downgraded. Among major oil-importing emerging economies, China grew by 7.4 percent. Growth slowed in the fourth quarter, and recent data point to further softening in the first quarter of 2015, with strong retail trade only partly offsetting the weakness in the real estate sector and manufacturing activity. In India, growth softened in the fourth quarter of 2014 to 7.5 percent year-on-year. In India, growth softened in the fourth quarter of 2014 to 7.5 percent year-on-year. Despite lower oil prices, inflation in Brazil has been ticking upward, weakening consumer confidence and retail sales, adversely impacting industrial production levels, and pushing the real to record lows. Among oil-exporting emerging economies, Russia has been particularly hard hit, as declining oil prices have compounded the impact on economic activity of sanctions imposed over the crisis in Ukraine. In Mexico, sentiment and activity have improved from a subdued third quarter, and prospects for the start of the year remain favorable.

Diverging monetary policy in major economies is becoming increasingly apparent. The ECB launched its Quantitative Easing program in March 2015, with monthly asset purchases of 60 billion euro until

at least September 2016, contributing to maintaining favorable financing conditions globally; and the Bank of Japan has maintained its commitment to aggressive policy easing. The U.S. Federal Reserve (the Fed), however, is expected to move in the opposite direction later this year as it starts normalizing policy interest rates, albeit at a gradual pace. While global interest rates remain at historically low levels, the expectation of divergent monetary policies has already led to a significant appreciation of the U.S. dollar, increased volatility in financial markets, and renewed pressure on emerging and frontier market currencies. Despite these pressures, central banks in several large oil-importing developing countries (such as China and India) were able to cut interest rates since the start of the year as inflation moved closer to policy targets, current account deficits decreased, and growth remained soft. In oil-exporting developing countries, policy considerations are different, with central banks having to balance the need to support growth against maintaining stable inflation and investor confidence in the face of more significant currency and capital flow pressures.

Global growth is expected to gain momentum in the second and third quarter, as the United States comes out of a soft growth patch at the start of the year, the Euro Area continues to recover, and oil-importing emerging economies gather strength. The global economy is expected to grow by 2.9 percent in 2015 and by 3.3 percent in 2016. Growth in high-income economies is expected at 2.1 percent in 2015, up from 1.7 percent in 2014, and 2.4 percent in 2016. Developing-country growth is expected to stabilize at around 4.5 percent in 2015 before picking up to 5.2 percent in 2016.

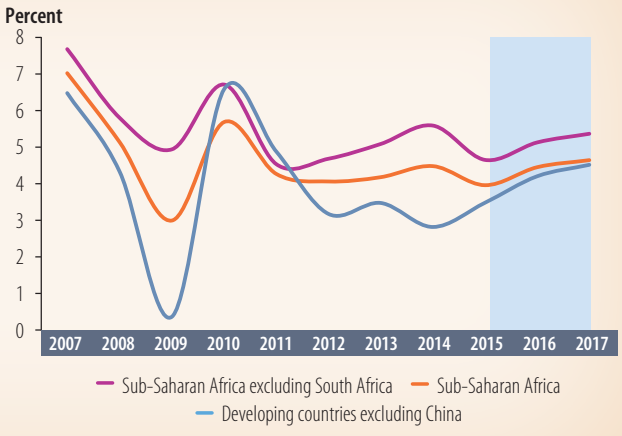
Risks to the economic outlook remain tilted to the downside. While the effect of the upcoming Fed tightening remains uncertain, slowing growth in many developing economies, especially oil exporters, is eroding their resilience to external shocks. A sudden rise in borrowing cost or further downgrades in emerging market credit ratings could cause a reappraisal of risk assets that spreads across emerging and frontier markets. Unresolved geopolitical tensions, such as the crisis in Ukraine, also present a downside risk.

RECENT ECONOMIC DEVELOPMENTS IN SUB-SAHARAN AFRICA

GDP growth in Sub-Saharan Africa averaged 4.5 percent in 2014, up from 4.2 percent in 2013, supported by continuing infrastructure investment, increased agricultural production, and buoyant services (figure 1). Although this pace is in line with the 4.4 percent annual average growth rate of the last two decades, it is weaker than the peak average rate of 6.4 percent during 2002-08. Per capita GDP growth was 1.9 percent in 2014. Performance in the three largest economies of the region was uneven, with robust growth in Nigeria offset by subpar growth in South Africa and a slowdown in growth in Angola. Elsewhere, economic activity remained

Growth is expected to slow in the region in 2015 and pick up moderately in 2016–17

FIGURE 1: GDP growth

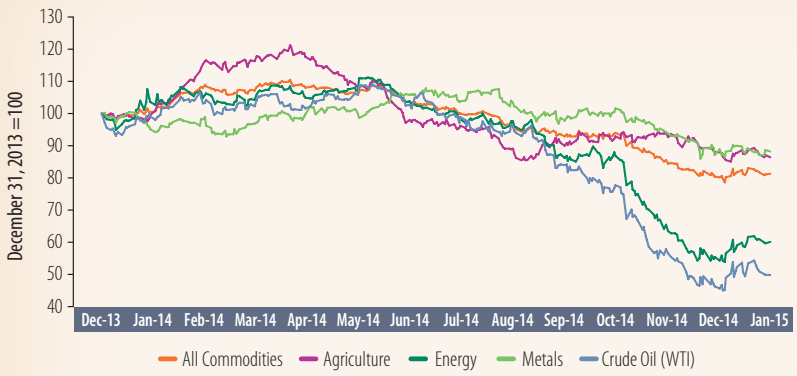


Source: World Bank.

strong in Côte d'Ivoire, Mozambique, and Tanzania. The Ebola-affected countries of Guinea, Liberia, and Sierra Leone saw sharply weaker growth, as activity in mining, services, and agriculture contracted.

Economic activity in the region is being impacted by the sharp fall in commodity prices. Oil prices fell by an astounding 57 percent between June 2014 and January 2015 (figure 2). Although they have recoverd from the lows, the cumulative drop between June 2014 and March 2015 still exceeds 50 percent. Other commodity prices have also weakened sharply between June 2014 and March 2015: for example, iron ore by 37 percent, copper by 13 percent, rubber by 24 percent, and cotton by 17 percent. As a net exporter of oil and other commodities, Sub-Saharan Africa is vulnerable to the adverse commodity price shock. Falling commodity prices will weigh heavily on exporters of these commodities, putting pressure on the current account and fiscal balances.

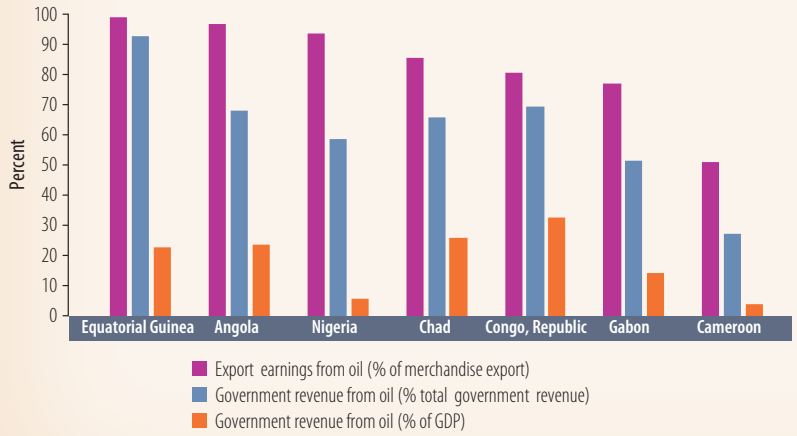
FIGURE 2: Commodity prices



Source: Bloomberg.
Note: WTI = West Texas Intermediate.

Oil has led the decline in commodity prices, falling by 57 percent between June 2014 and January 2015

FIGURE 3: Export earnings and fiscal revenues from oil, 2014



Source: IMF Country Reports.

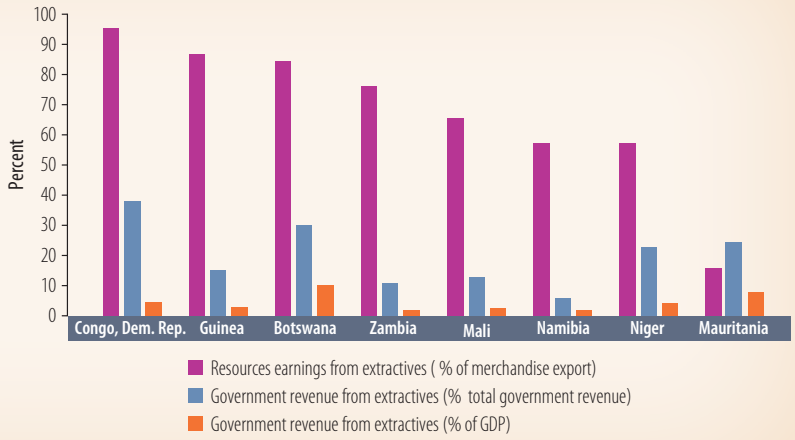
Oil accounts for over 70 percent of export revenues and over 50 percent of fiscal revenues for many of the region's oil exporters

The region's oil exporters,[1] which accounted for nearly half of the region's GDP in 2014, have been especially hard hit by weakening terms of trade. Their economies depend heavily on oil for export receipts and fiscal revenues and are especially vulnerable to oil price movements. Oil accounts for around 90 percent of merchandise exports in Angola, Chad, Equatorial Guinea, and Nigeria (figure 3). The contribution of oil to fiscal revenues is likewise large—over 50 percent in most oil producers. Although Nigeria has a more diverse economy than other oil exporters, with the oil sector accounting for about 13 percent of GDP, 65 percent of government revenues are derived from oil. Not surprisingly, the sharp decline in oil prices since June 2014 has put substantial pressures on the fiscal and current

1 Country groupings are defined in Appendix 1.

Minerals and metals are a substantial source of export earnings, but their contribution to fiscal revenue is limited

FIGURE 4: Export earnings and fiscal revenue from nonoil extractives, 2014



Source: IMF Country reports.

account balances of oil exporters. Among nonoil commodity exporters, minerals and metals are a substantial source of export revenues, as well. But unlike oil, their contribution to fiscal revenues is limited (figure 4). A detailed analysis of the vulnerability of the region's countries to the terms-of-trade shocks is presented in Section 2 of the report.

RESPONSE TO THE COMMODITY PRICE SHOCK

The transmission of the commodity price shock will be through the current account. Thus, sharply lower oil prices will reduce export earnings of oil exporters and put pressure on the current account balance and the exchange rate (by contrast, lower oil prices will reduce pressure on the current account of oil importers). If the nominal exchange rate is allowed to adjust, that is depreciate, this will make other exports more competitive and boost activity in the tradable goods sector. The depreciation of the currency, in turn, raises the price of imported goods, pushing up inflation. The implications for second-round effects of higher price of imported goods will depend on the stance of monetary policy. Lower oil prices will also reduce fiscal revenues from oil, putting pressure on fiscal balances. Where fiscal buffers are strong, fiscal policy will be better positioned to support demand and stabilize output.

Oil exporters have started to adjust in response to the oil price shock. Sharp currency depreciations and substantial foreign reserve losses have prompted adjustments in monetary, exchange rate, and fiscal policies in a number of oil exporters (figure 5). In Nigeria, the fall in oil prices led the central bank to raise the policy rate from 12 to 13 percent and to devalue the naira by 8 percent in November 2014. However, with oil prices declining, the naira continued to depreciate against the U.S. dollar, falling by more than 20 percent in February 2015. In response, the central bank ended its managed float exchange rate regime, closing down the Dutch Auction System window. The exchange rate is now set solely by the interbank market. However, the naira remains overvalued in real effective terms (figure 6).

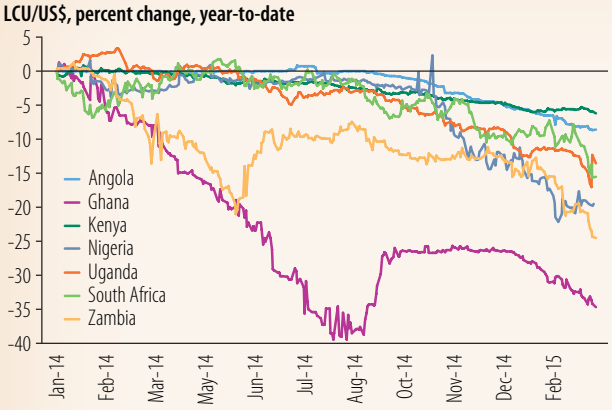
In Angola, the central bank hiked its key interest rate by 50 basis points to 9 percent in the fourth quarter of 2014 to anchor inflation expectations. Since the start of 2015, the Angolan kwanza has depreciated by more than 8 percent against the U.S. dollar, indicating that the central bank is allowing the currency to move more flexibly, following many years of sustaining a peg to the U.S. dollar. Many of the region's oil exporters (Cameroon, Chad, Republic of Congo, Equatorial Guinea, and Gabon) are part of the Central Africa Economic and Monetary Community (CEMAC) and have a common currency—the CFA franc—which is pegged to the euro. With the euro depreciating against the dollar, because of divergent prospects for monetary policy in the two regions, the CFA franc has also depreciated against the dollar. This has

helped smooth adjustment to the oil price shock for CEMAC oil exporters by boosting export earnings in domestic currency.

Several of the region's oil exporters have started to adjust their budgets, including lowering or removing fuel subsidies (these subsidies accounted for 3.8 percent of GDP in Angola in 2014 and 2.1 percent in Cameroon). In Angola, the oil price assumption in the 2015 budget was revised down to $40 per barrel (bbl) from the original assumption of $81/bbl. In Nigeria, it was reduced to $52/bbl from the earlier forecast of $65/bbl. The corresponding downward revision in revenues has prompted plans to cut public spending. Angola's parliament approved a 25 percent reduction in spending from the original plan for 2015, covering public investment projects and current expenditures, including subsidies. In Nigeria, the government announced a range of expenditure measures that are designed to sharply reduce public investment. With lower oil prices depressing government spending, the nonoil economy in many of these countries is faltering, especially in the least diversified economies (Angola, Republic of Congo, and Equatorial Guinea). By contrast, Nigeria's nonoil economy, the main engine of growth in recent years, remains fairly robust. Although it slowed in the fourth quarter, nonoil output grew by 7.3 percent in 2014, compared with 8.3 percent in 2013, led by services.

FIGURE 5: Exchange rates

The region's major currencies continue to depreciate against the U.S. dollar

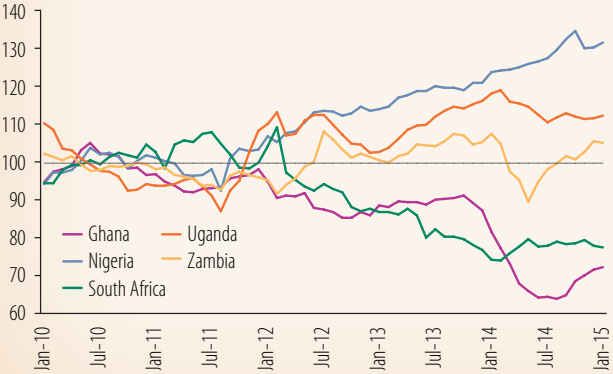


Source: Bloomberg.

Note: LCU = local currency unit.

FIGURE 6: Real effective exchange rates

Despite depreciation, some currencies remain overvalued in real effective terms



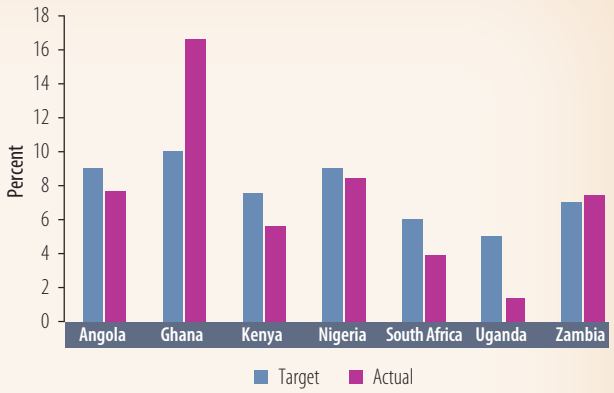
Source: Bloomberg.

Lower oil prices are containing inflationary pressures in some countries. In contrast to oil exporters, the oil price plunge has provided support to real incomes in oil-importing countries. Cheaper fuel prices helped lower inflation and improve current accounts in these countries in the first quarter of 2015. In Kenya and South Africa, inflation rates moved back within their target range, allowing central banks to keep interest rates on hold or to raise them at a slower pace than otherwise. In South Africa, the beneficial effects of low oil prices on consumer purchasing power are being offset by higher fuel levies, a weaker rand, and electricity shortages which continue to hamper economic activity and export growth.

But not all countries are seeing lower inflation. The pass-through from the naira devaluation and the election-related stimulus have added to price pressures in Nigeria, while Ghana has continued to battle double-digit inflation, at 16.5 percent in February (figure 7). With the broad-based U.S. dollar appreciation since mid-2014, depreciation pressures in some oil-importing countries also continued, with the

Inflation rates in Kenya and South Africa are back within central banks' targets

FIGURE 7: Target and actual inflation (percent)



Source: World Bank.

Note: Upper bound of inflation target band.

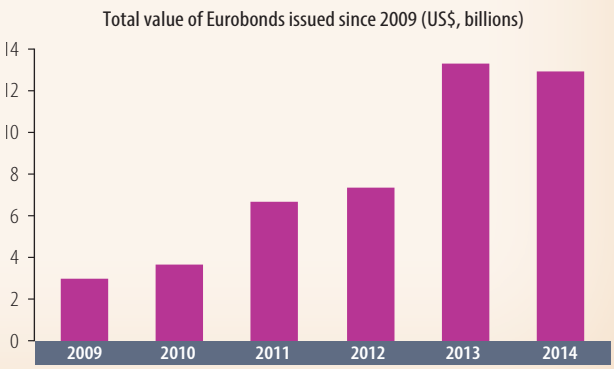
Sovereign spreads of oil exporters have widened sharply

FIGURE 8: Sovereign bonds spreads

Source: Bloomberg.

Eurobond issuance in the region is on the rise

FIGURE 9: Eurobond issuance



Source: Bloomberg.

Zambian kwacha and Ugandan shilling falling sharply in recent months, pushing up inflation in those countries.

In financial markets, sovereign credit default swap spreads for oil exporters rose sharply as oil prices declined, suggesting that investors are discriminating among the region's frontier markets based on their economic outlook. The spreads also became more volatile while remaining elevated. The sovereign spreads for Angola, Gabon, Ghana, and Nigeria have remained high—well above the peak of the 2013 taper tantrum (figure 8). The spreads for Zambia have also remained elevated, reflecting investors' concerns about soft copper prices and uncertainty over government policy.

At the same time, many of the region's frontier markets are continuing to take advantage of relatively low global interest rates and issue Eurobonds to finance infrastructure projects. Eurobond issuance in the region has remained robust—totaling $13.3 billion and $12.9 billion in 2013 and 2014, respectively—and has become increasingly attractive, with financing costs in the Euro Area falling to lower levels as the ECB embarked on an ambitious program of quantitative easing in March 2015 (figure 9). The appetite for Sub-Saharan African bonds remains strong, as demonstrated by Ethiopia's oversubscribed debut 10-year $1 billion bond issue in December 2014 and Côte d'Ivoire's return to the market with a $1 billion issue in February 2015. Several of the region's countries are planning to access markets this year. Debt-to-GDP ratios for the countries with increased bond market access have

picked up in recent years. While some countries (Ghana) are more exposed, overall debt burdens remain manageable. In countries where currencies are weakening, the local currency cost of servicing foreign-denominated debt is rising. For the region as a whole, however, debt burdens remain moderate, though trending upward.

ECONOMIC OUTLOOK

A pullback in growth is expected in 2015, with real GDP growth averaging 4 percent, from 4.5 percent in 2014 (a downward revision of 0.6 percentage points relative to the October 2014 issue of this report). Slower expansion of economic activity is largely driven by the slide in commodity prices. Prospects of oil exporters, such as Angola and Nigeria, are especially hard hit by sharply lower oil prices. In South Africa, growth will continue to be curtailed by electricity constraints and policy uncertainty. Starting in 2016, however, growth should gradually pick up in the region as commodity prices partially recover and/or economies diversify, strengthening to 4.5 in 2016 and 4.7 percent in 2017. The uptick in growth will be underpinned by infrastructure investment and healthy private consumption buoyed by low oil prices. Activity in the nonoil sector is projected to strengthen, boosted by rising government spending. External demand is also expected to be supportive of growth in the region in 2016–17, owing to stronger economic prospects in high-income economies.

Consumption dynamics will differ for oil exporters and importers. Private consumption growth is expected to slow in oil-exporting countries as fiscal measures, such as successive cuts to subsidies to alleviate budgetary pressures, push fuel costs higher. Purchasing power is also expected to decline due to currency weakness, which will push up the cost of imports in local currency terms. Support from remittances will be muted, as remittance inflows in the region are projected to rise at a slower pace of 2.8 percent annually during 2015-17 (below the 2014 growth rate of 3.2 percent), reflecting mainly a slowdown of remittances to Nigeria. Weak consumer confidence amid economic slowdown will weigh on spending, as consumers hold back. By contrast, lower fuel prices are expected to boost consumer purchasing power in oil-importing countries, which should help boost spending in these countries and support domestic demand, although the inflationary impact of currency depreciation could offset some of these effects.

In some oil-exporting countries, the banking sector is exposed to oil price declines, through bank loans extended to the oil sector. With oil prices having declined sharply, some companies may struggle to service these loans. In addition, a depreciation of the currency will increase companies' cost of servicing foreign-currency-denominated loans that have been made by domestic banks. Nonperforming loans may rise, requiring capital injections. These developments could erode business confidence.

China's investment slowdown and low commodity prices suggest that foreign direct investment (FDI) flows will not provide much support to stronger growth in the region, although some countries (Mozambique, Tanzania) may benefit from continued foreign investments in the mining sector. Furthermore, governments' plans in net oil-exporting countries to reduce budget deficits are likely to hit capital expenditure more than current expenditure, as governments seek to limit cuts in public sector wages or social spending. However, governments in most low-income countries are expected to maintain a focus on expanding public infrastructure in priority sectors such as electricity, roads, and water and sanitation. Frontier markets are expected to continue to take advantage of low global interest rates to issue Eurobonds to finance key infrastructure projects.

The fiscal policy stance is expected to remain tight throughout 2015 in most net oil-exporting countries across the region. Finance ministries in many of these countries have already taken measures to rein in spending in light of anticipated lower revenues. The revised budgets in Angola and Nigeria indicate that while capital expenditures will bear the brunt of expenditure measures, recurrent expenditures will also be reduced. Nevertheless, despite these adjustments, fiscal deficits in these countries are likely to remain high because of low revenues. Fiscal deficits are also expected to remain elevated in net oil-importing countries. Spending on goods and services in these countries will continue to expand. With many of these countries holding presidential elections in 2015 and 2016, pressures on governments to increase wages and salaries are also likely to build.

Net exports are projected to make a negative contribution to real GDP growth. Current account deficits are expected to deteriorate significantly for oil exporters. Lower prices will depress export receipts even as export volumes rise in some countries. The current account surplus in Angola and Nigeria is expected to reverse as their terms of trade deteriorate sharply. Countries with an already high current account deficit, such as Equatorial Guinea, would come under additional pressure. Among oil importers, current account balances are generally expected to improve, although import growth will remain strong, since capital goods imports will be needed for infrastructure projects. Overall, the region's current account deficit will widen from an estimated 3.6 percent of GDP in 2014 to around 4.8 percent in 2015.

The baseline forecast shows mixed trends across the region.

- Among large economies, Nigeria is expected to grow at a slower pace in 2015, as fiscal policy tightens in response to lower oil prices and domestic demand contracts, but picks up in 2016, as the services sector, which now accounts for more than 50 percent of GDP, rebounds. Despite the fall in oil prices, growth is expected to improve only moderately in South Africa, as electricity shortages and policy uncertainty weigh on investment sentiment, partly offsetting the expected rebound in activity from prolonged labor strikes in 2014, and fiscal policy continues to consolidate. Growth is expected to weaken substantially in Angola, reflecting its vulnerability to lower oil prices, and remains modest in 2016–17, as purchasing power declines and lower government revenue leads to cuts or delays in capital expenditures.
- Among frontier-market economies, Kenya and Senegal are expected to grow at a robust pace, supported by strong infrastructure investment and consumer spending buoyed by low oil prices. In Ghana, the agreement reached with the IMF will help stabilize the cedi (which has already depreciated by 19 percent this year), but still high inflation and fiscal consolidation will weigh on growth. In Zambia, growth will slow owing to soft copper prices and fiscal consolidation, and as regulatory uncertainty in the mining sector dampens the outlook for investment.
- Growth should remain robust in a range of countries, driven by infrastructure (Côte d'Ivoire, Rwanda) and mining (Mozambique, Tanzania) investment, and consumer spending (Uganda), although continued weaknesses in the prices of their main exports (base metals and agricultural commodities) will limit the benefits of the oil-price decline. In Guinea, Liberia, and Sierra Leone, the Ebola crisis will continue to constrain economic activity. Although the danger has receded, the risks of renewed spread of the disease will continue to exert downward pressure on economic growth in the short term.

RISKS

The balance of risks to the outlook remains tilted to the downside. On the domestic front, a new generation of violent conflict poses security risks. In addition, the Ebola crisis remains a major concern for the most affected countries and for the subregion, and this epidemic serves to highlight the preexisting weaknesses in the health systems of much of the continent and the potential for systemic risks from communicable diseases. On the external front, a sharper-than-expected slowdown in China, a further decline in oil prices, and a sudden deterioration in global liquidity conditions are the main risks.

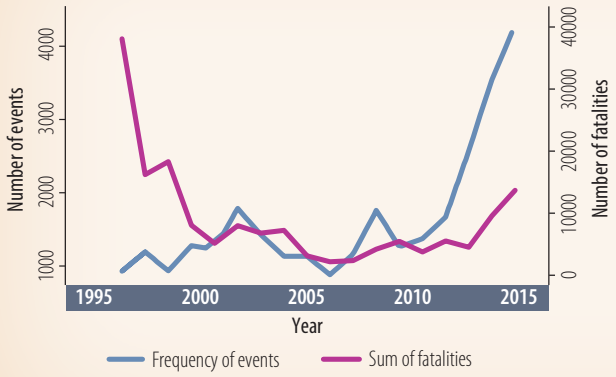
The region's economic outlook faces risks from deep-running domestic fragilities. Among these are violent conflict, natural disasters, and disease epidemics. These risks exacerbate policy challenges, especially in countries that are also struggling to adjust to the terms-of-trade shock from falling commodity prices.

After years of decline, conflict is on the rise again

While the first decade of the 21st century proceeded in relative peace, in more recent years, there has been an upsurge in violence. Compared with the end of the 1990s, it is especially the number of violent events that has increased (by more than a factor of 4 for violent events against civilians), even though the number of casualties per event has declined (to 4 compared with 20 per violent event against civilians at the end of the 20th century) (figure 10). This partly reflects a change in the nature of the violence. The conventional and large-scale conflict events and civil wars of the 1990s have receded in scale and intensity. Yet election-related violence, extremism and terrorist attacks, drug-trafficking (West Africa has emerged as a key transit point in the trafficking of narcotics between Latin America and Europe), maritime piracy (piracy in the Gulf of Guinea has risen), and criminality have been on the rise. In addition, wars are increasingly being fought by armed insurgents on the periphery of factionalized and militarily weak states. Examples include Boko Haram in Nigeria and the Tuareg and Arab uprisings in Mali.

FIGURE 10: Frequency of violent events and fatalities in Africa, 1997–2014

Violent events against civilians in Africa are on the rise again



Source: Armed Conflict Location and Events Dataset (ACLED) Conflict Patterns Across Africa, Real Time Analysis of Africa Political Violence, version 5 (http://www.acleddata.com/).

This reemergence of conflict raises important concerns about whether Africa can sustain the progress of the last two decades, especially in the affected countries. After stress-testing Africa's growth and poverty-reducing performance, Devarajan et al. (2013) concluded that it is civil conflicts and violence that will pose by far the greatest threat to the region's economic performance. Regressing annual economic growth on an annual indicator variable of the number of casualties from violence against civilians (1 if > 100; 0 otherwise)[2] suggests, for example, that countries suffering more than 100 casualties

2 Data are from the annual Armed Conflict Location and Events Data from Africa (ACLED) (1997–2014).

in a particular year experience a decline in their economic growth of 2.3 percentage points (this demonstrates an association and not necessarily causality). And the welfare effects can be long-lasting. While economic growth in Burundi hovered around 4 percentage points after the civil war ended in the early 2000s, panel data analysis indicates that the share of households that reported being poor increased from 21 percent in 1993, to 46 percent in 1998 (just before the civil war), to 64 percent in 2007 (four to five years after the civil war). Though much ignored, displaced persons often suffer especially, with returning refugee households in Burundi taking 8 to 10 years before they reached the welfare levels of their neighbors who were not displaced (Verwimp and Munoz-Mora 2013).

The close interconnectedness among countries, for example, in West Africa, also means that localized conflicts can spill over. And returning to growth after conflict often poses particularly thorny political and distributional challenges. While household consumption growth in villages in Burundi affected by violence was, for example, 9 percent lower during 1999–2007, for every 25 casualties experienced, households of which at least one member had joined an armed rebel group experienced 41 percent higher growth in their welfare (Verwimp and Bundervoet 2009) .

Reducing conflict risks and promoting stability should be especially high on the agenda of policy makers, as should helping countries escape cycles of conflict and instability. This requires countering the drivers of fragility through, for example, making investments in lagging regions, reforming and improving the security sector, addressing land issues, creating greater openness regarding public matters, and broadening the scope of governance in the extractive sector to incorporate issues such as political bargaining at the local level, subnational dynamics, and the negative local-level externalities that this sector can impose.

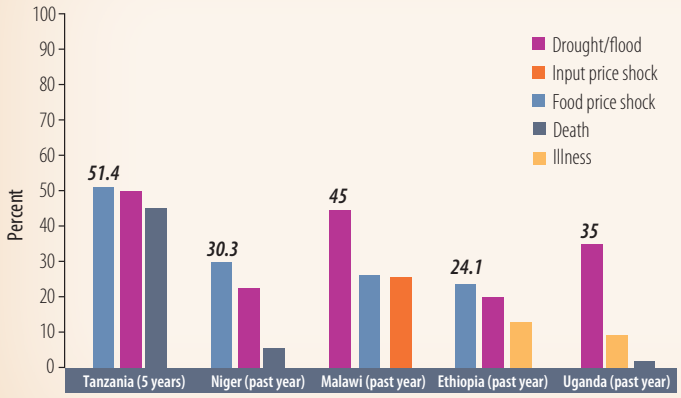
Old and new natural disasters continue to pose important risks

Droughts are another threat to the sustainability of Africa's growth momentum. The pernicious effects of droughts for Africa's growth and poverty have long been documented and continue to pose enormous challenges, as witnessed by the 2008–11 drought in the Horn of Africa, which affected 13 million people and severely disrupted agricultural production and livelihoods in drought-affected areas. But Africa's natural disaster profile is also changing, with floods (and cyclones) increasingly also causing havoc. With climate change adding uncertainty, disaster risk management will need to be an integral part of Africa's growth and poverty-reducing policy agenda.

More than 1,000 major natural disaster events have been recorded in Sub-Saharan Africa since 1970. Of these, 670 were floods (440 of which were recorded during the last decade). This increasing prevalence of floods has remained relatively neglected. Yet in some countries, especially those home to river basins such as Nigeria (Niger River basin) and Zambia (Zambesi River basin), many more people have been affected by floods than by drought. Flash floods can also cause substantial havoc, especially in urban areas. The 2009 flood in Ouagadougou, Burkina Faso, for example, affected 150,000 people and killed 46 (World Bank 2015b). It was caused by exceptionally high rainfall of 263 millimeters in 12 hours, exacerbated by poor drainage and hydraulic infrastructure. In Malawi, heavy rains caused widespread flooding this January. Nonetheless, droughts continue to affect the largest number of people, especially in semi-arid and subhumid areas of the Sahel countries, the Horn of Africa, and Southern Africa. Cyclones

and tropical storms affect countries on the southeastern coast along the Indian Ocean (Madagascar, Mozambique, and the Indian Ocean islands).

FIGURE 11: Top three adverse shocks commonly reported by households



Source: Nikoloski, Christiaensen, and Hill 2015.

Over a fifth of households in Ethiopia, Malawi, Niger, and Uganda reported having experienced a climate shock over the last year

The importance of natural disasters for households is apparent in the microdata (figure 11). About a fifth of households in four African countries (Ethiopia, Malawi, Niger, and Uganda) reported having experienced a climate shock over the last year (a drought or flood). Climate shocks were also the most reported shocks in Nigeria, and close to the most in Tanzania (50 percent), where five-year recall periods were used. In the vast majority of cases (84 percent), the reported climate shocks concerned droughts (not floods), consistent with the pattern depicted for these six countries.

To be sure, economic price shocks (food, input, and output price shocks) were also reported with high frequency (for instance, food price shocks impacted the same number of households as climatic shocks, and even more in Ethiopia and Niger). And health shocks (death or illness) were only slightly less frequent than climate shocks (20 percent of households on average), and occurred with higher regularity in Nigeria and Tanzania. Digging deeper, Nikoloski, Christiaensen, and Hill (2015) find that climate shocks prove particularly harmful for rural residents. In the above-mentioned six African countries, they are 2.3 times more frequent among rural than urban households. Similar patterns are reported for price shocks. Unemployment and loss of business occurred more frequently among urban citizens.

With respect to households, the poor usually suffer the most in terms of their level of both consumption and human development, given higher exposure to natural disasters and more limited capacity to cope (World Bank 2015). And the effects of shocks may be long-lasting, with young adults (aged 19 to 22) who were aged 12 to 36 months at the peak of the 1984 Ethiopia Famine found to be at least 5 centimeters shorter than the older cohort and their unaffected peers (Dercon and Porter 2014). Indicative calculations by the authors suggest that such height loss may lead to income losses of around 5 percent per year over their lifetime.

Climate change is increasing natural disaster risks, and also interacts with other trends, such as urbanization, to change the risk profiles. Droughts are expected to become more likely in central and southern Africa, and drought frequency will likely increase in currently dry regions. Climate-smart agriculture is called for. In contrast, higher, but also more extreme, rainfall is expected in the Horn of Africa and parts of East Africa. This increases the risk of floods, but may also alleviate the

occurrence of rain shortages (and increase the potential for hydropower). Flexibility will be key to benefiting from higher rainfalls, while also being able to deal with the extremes. Finally, sea-level rise is increasingly a concern for countries with populated urban centers and informal settlements in low-lying coastal areas, such as those along the coasts of West and East Africa (including the densely populated Niger Delta), as well as for island economies such as Madagascar, Mauritius, and the Seychelles.

Climate change adaptation and disaster risk management will need to be embraced now to address this slow but deep-running threat to Africa's growth and poverty-reducing performance. On the upside, the changing climatic environment also shifts the cost-benefit ratios of long-needed investments such as in irrigation infrastructure. They stand to become much more necessary and profitable.

The Ebola epidemic and what it highlights about systemic effects

The Ebola outbreak has slowed significantly in 2015, but progress toward zero cases remains challenging, with reversals in Guinea and Sierra Leone. The primary and secondary impacts of the Ebola epidemic continue to reverberate. As of late March 2015, the cumulative number of cases neared 25,000 and deaths surpassed 10,000. Over the course of 2014, Ebola killed roughly twice as many people as malaria in Guinea, Liberia, and Sierra Leone, and it killed about the same number as tuberculosis, even without taking the likely undercounting of Ebola deaths into account. The direct impact of the disease in deaths and illness has been substantial.

Furthermore, the economic impact in those countries has been massive. In the second half of 2014, all three countries saw flat or negative income growth. Forecasts for 2015, with ongoing investor aversion, are sobering, with contractions in Guinea and Sierra Leone, and projected growth in Liberia less than half what was predicted before the crisis (World Bank 2015c) (table 1). These projections are consistent with mobile phone surveys in Liberia and Sierra Leone, which document significant unemployment in Liberia and small enterprise closures in Sierra Leone (World Bank 2015d; 2015e).

Beyond the immediate impacts on economic activity, there are several indicators that suggest potential long-term impacts on human capital. Schools in all three countries were closed for the second half of 2014 and early 2015. Vaccinations for measles dropped between 25 and 50 percent, with likely similar drops for other diseases, including whooping cough and polio (Dennis 2015). Survey evidence suggests that postnatal visits in Sierra Leone dropped (World Bank 2015e). Many children have been orphaned, and many others have been adversely affected by the economic impacts of the epidemic (Evans and Popova 2015). All of these could lead to disease outbreaks down the line or—at the very least—reductions in health and well-being.

TABLE 1: GDP growth forecasts for 2015, for Guinea, Liberia, and Sierra Leone

		2015 growth forecast		
	Est. 2014 GDP ($ billion)	June 2014	January 2015	GDP loss ($ million)[a]
Guinea	6.2	4.3	-0.2	540
Liberia	2.3	6.8	3.0	180
Sierra Leone	5.0	8.9	-2.0	920
TOTAL	13.5			1,640

Source: World Bank staff calculations.
Note: a. Includes base effect from lost 2014 growth.

Early concerns of a major spread to other African countries have not, to this point, been borne out. After a successful national and international response to a single case in Senegal and a handful of cases in Nigeria and Mali, all three countries have been declared Ebola free. Other countries in West Africa, particularly the Gambia and Senegal, experienced negative impacts on income through reduced travel and tourism, lost trade through closed borders, and disrupted supply chains, but those impacts have been modest. Most recent estimates for the economic impact in 2015 outside of Guinea, Liberia, and Sierra Leone are roughly $550 million (World Bank 2015e).

What the Ebola epidemic highlights about health systems

While the direct and indirect impacts of the Ebola epidemic have been significant, they also highlight preexisting weaknesses in the health systems of the three most affected countries, and of much of the continent. For example, consider maternal mortality as one indicator of the overall quality of health systems. Over the last 25 years, maternal mortality has fallen in Sub-Saharan Africa, but it remains more than double that of developing countries in general. Likewise, the number of health care workers is the lowest of any region in the world, and barely one-quarter the global average. Disease surveillance systems reflect these same weaknesses. These affect the risk not only for infectious diseases, but for all health conditions.

The Ebola epidemic can serve as a catalyst to increase investments in health systems, both in those countries directly affected by the epidemic and in Sub-Saharan Africa more broadly. Improved surveillance systems, embedded within stronger health systems overall, will be crucial to short-term recovery and long-term improvements. Investments in health care workers at each skill level are one key component of that health system strengthening, from doctors and nurses to community outreach workers. These actions will not only help to avoid the next infectious disease outbreak, but also to improve the quality of life and consequently the economic prosperity of individuals across Africa.

External risks

Slower-than-expected output growth in China would weigh on demand for the region's commodities, driving prices down further. A further decline in the already depressed price of metals, especially iron ore, gold, and copper, would severely affect a large number of countries in the region and lead to a substantial drop in export revenues. A scaling down of operations and new investments in these countries in response to the low prices would reduce output in the short run, and reduce growth momentum over an extended period of years.

Any further decline in oil prices, while unlikely, would further lower revenues in oil-exporting countries, requiring them to undertake deeper fiscal adjustments with sharper expenditure cuts. It may prompt some oil companies to delay or even cancel planned investments in 2015.

A sudden adjustment of market expectations to the upcoming tightening of monetary policy in the United States could adversely affect the region's emerging and frontier markets, especially in countries that receive substantial capital inflows, such as South Africa. However, quantitative easing in the Euro Area should contribute to continued attractive borrowing conditions on Eurobond markets, allowing

frontier-market governments to maintain market access. Recent episodes of capital market volatility suggest that countries with large macroeconomic imbalances would face strong downward pressure on the exchange rate, and hence an increased risk of inflation, further constraining policy.

POLICY CHALLENGES

The consequences of the terms-of-trade shock on economic activity will depend on the policy response. Commodity exporters with limited policy buffers will have less flexibility to implement gradual adjustment of public spending to the lower commodity prices and protect current account balances. Allowing currencies to depreciate will provide a buffer against the impact of the weaker export prices. At the same time, it will be important for these countries to prevent inflation induced by currency depreciation from becoming a constant threat. In addition, the commodity price shock highlights the need for commodity exporters to diversify their economies—both output and fiscal revenues—away from primary commodities, which will require them to implement deep structural reforms that will remove impediments to private sector activity and improve the business environment.

For many countries in the region, large fiscal deficits and inefficient government spending remain sources of vulnerability. In these countries, focus will need to be on strengthening fiscal positions and restoring fiscal buffers to increase resilience against exogenous shocks. Fiscal consolidation should involve a shift in spending priorities that supports both the efficiency of public expenditures and long-term growth. In the countries where inflation remains high or has been rising and the currency has weakened, monetary policy tightening might be needed to ward off any second-round effects of price increases.

The poor face risks from changing conditions in the broader economy and from fiscal adjustments. Attention must, thus, also be on protecting the poor from income losses arising from these shifts.

Despite these challenges, there are opportunities for policy makers in both oil-importing and oil-exporting countries in the region. Falling oil prices reduce the need for fuel subsidies or make room for higher energy taxes. Fiscal resources released by lower fuel subsidies could either be saved to rebuild fiscal space or reallocated toward better-targeted programs to assist poor households, or could be used to make critical infrastructure and human capital investments (World Bank 2015a). Along with reducing the burden on state coffers, market-based fuel prices will also help to redress allocative inefficiencies in the use of energy.

Beyond macroeconomic policies, there is an urgent need across the region for deep structural reforms to ignite and sustain rapid productivity growth across all sectors, but especially prioritizing agriculture and diversification of rural economies. Boosting fundamentals such as lower transport cost, cheaper and more reliable power, and a more educated and skilled labor force will benefit all sectors. Past issues of *Africa's Pulse* have addressed these issues in detail.

Section 2: Falling Commodity Prices: Headwinds for Sub-Saharan Africa?

- The 57 percent decline in the price of oil from June 2014 to January 2015 is not unprecedented. But commodity prices have become more synchronized in the current commodity super cycle, which began in 2000 and is associated with the rapid industrialization and urbanization of dynamic large emerging market economies, most notably, China.
- Sub-Saharan Africa is a net exporter of primary commodities. Oil is the most important commodity traded in the region. Ninety six percent of the total exports of oil-exporting countries come from the three biggest exports of each country, which represent nearly 30 percent of their GDP. This dependence exposes them to swings in oil prices.
- Overall, the initial terms-of-trade shock effect reflects a loss in the price of exports relative to imports of 18.3 percent for the region. Much of this deterioration in the ratio of export to import price is explained by the decline in oil and other energy commodities. For instance, the decline in terms of trade is about 40 percent for oil-exporting countries. By contrast, countries that exported agricultural commodities experienced a much smaller deterioration in their terms of trade of 0.6 percent, and exporters of metals and minerals show a modest gain of 1.2 percent.
- Fourteen countries are highly vulnerable to the fall in commodity prices; that is, they experienced terms-of-trade deterioration greater than 10 percent. Among these, nine countries—eight major oil exporters and Mauritania, which experienced a dramatic loss in terms of trade due to the high share of iron ore in its export basket—experienced terms-of-trade deterioration of 20 percent or more. Five countries experienced a terms-of-trade deterioration of 10 to 15 percent. Most of these countries are energy exporters, but changes in nonfuel export prices have also played an important role. For example, in the Democratic Republic of Congo, the negative shock from oil is magnified by additional losses attributed to weaker copper prices.
- More vulnerable countries have weaker quality of policies and institutions as measured by selected Country Policy and Institutional Assessment (CPIA) indicators (World Bank 2014).[2] The quality of macroeconomic management for this group shows a deterioration in the period following the global financial crisis. There is also a wide gap in terms of the quality of the business regulatory environment between the countries with low and high vulnerability. This gap is more pronounced when looking at the efficiency to mobilize revenues.

2 The CPIA Africa report can be downloaded at http://datatopics.worldbank.org/cpia/.

INTERNATIONAL COMMODITY PRICES: IS THE COMMODITY SUPER CYCLE NEAR THE END?

The sustained growth record of Sub-Saharan Africa during the last 20 years was partly attributed to good policies—that is, sound macroeconomic frameworks that delivered aggregate stability, as reflected in lower inflation and healthy fiscal positions—and higher investment rates. However, faster growth in the region was also attributed to the strong performance of resource-rich countries supported by an external environment of rising international prices for their commodity exports.

Commodity prices—and especially crude oil prices—experienced an impressive surge in the run-up to the global financial crisis. For instance, the price of oil rose from an average of $25 per barrel in January 2000 to a monthly average peak of $133 per barrel in July 2008. Prices of metals and minerals nearly tripled from January 2000 to July 2008, whereas food prices grew nearly 170 percent over the same period. There was, of course, a great deal of heterogeneity in the evolution of international prices across the different commodities. In the case of commodities exported by the region, iron ore prices more than quintupled, while copper prices almost quadrupled from the beginning of 2000 to July 2008. The international price of cocoa and rice tripled, while that of coffee almost doubled. Cotton, on the other hand, grew only 63 percent.

Super cycles of commodity prices: Demand-driven by nature

The upward trend in commodity prices experienced at the start of the 21st century was coined a "commodity price super cycle." Super cycles are typically characterized by (a) the length and amplitude of the commodity price upswings; and (b) price increases over a wide range of commodities, most notably, among inputs for industrial production and urban development. Commodity super cycles are typically driven by the emergence of a sustained appetite for raw materials during the industrialization of a major economy or of a major group of economies (Heap 2005). Erten and Ocampo (2013) identify three super cycles (from trough to trough) that occurred previous to the post-2000 commodity super cycle. They occurred during 1894–1932 (with a peak in 1917), 1932–1971 (with a peak in 1951), and 1971–1999 (with a peak in 1973). These commodity super cycles have been associated with the protracted U.S. growth in the late 19th and early 20th century and the post-World War II reconstruction of Europe and the emergence of Japan as a major economic player.

The current commodity super cycle is associated with the rapid and sustained industrialization-cum-urbanization of dynamic large emerging market economies, most notably, China. Over the last 15 to 20 years, China has become a major engine for global growth, and its greater presence in the global economy has generated major shifts in production, trade, and investment patterns across the world (Prasad and Rumbaugh 2003). China has also made its presence felt in the commodity markets: the Chinese demand for commodities has increased at an unusually fast pace for its level of income per capita. During 2010, China's consumption of nonrenewable energy resources accounted for 20 percent of global production, but its consumption of agricultural crops and base metals accounted for 23 and 40 percent of global production, respectively.

The fast-paced economic growth in China reflects the rapid expansion of commodity-intensive activities in the traded export sector and large-scale fixed asset investment (Yu 2011). For instance, infrastructure

investment and construction in China explains over half of the country's copper usage, while consumer and industrial goods account for nearly one-third (Ye 2008). Econometric evidence suggests that shocks to China's aggregate activity have a persistent short-run impact on oil and base metal prices, while shocks to consumption have a negligible effect on commodity prices (Roache 2012).

Empirical evidence shows that international prices of oil and metals have moved historically with the business cycles of advanced countries; however, this relationship changed in mid-1997. Industrial production in emerging Asia appears to have become a more dominant driver of oil price fluctuations. This could be attributed to increased outsourcing of production to Asia from advanced countries that generates higher levels of energy demand as greater shares of world manufacturing are produced in relatively energy-inefficient Asian firms. For metals, surges in prices since 2002 are explained not only by increasing Asian industrial activity but also by the rising intensity of metal production (Cheung et al. 2007).

Commodity super cycles are tightly related to the rapid industrialization and urbanization of a group of dynamic economies. However, as the level of income per capita of these countries increases, their commodity consumption follows an S-curve pattern: it stabilizes at very high levels after the rapid and accelerating growth (Roache 2012). Once commodity consumption stabilizes, periods of much lower commodity prices tend to follow (Canuto 2014; Jacks 2013).

Commodity prices have experienced sharp swings since the global financial crisis.[3] More recently, the world economy has experienced sharp declines in oil prices. The price of a barrel of oil has dropped significantly from $108 in June 2014 to $47 in January 2015 (figure 2). Moreover, a number of commodity prices other than oil have also weakened over the last year; however, the extent of their decline has been far from uniform. For instance, energy commodities experienced a year-on-year (YoY) drop of 50 percent in January 2015—a sharper decline than that experienced by metals and minerals (16 percent) and agricultural commodities (nearly 10 percent). Again, there are significant differences across goods in the pace of the decline; the international price of iron ore and copper dropped 47 and 20 percent YoY, respectively, in January 2015. Cotton and soybean prices dropped nearly 25 percent, while the price of cocoa and coffee increased.

Benchmarking the current oil price decline

The international price of crude oil has declined sharply since June 2014. After fluctuating around $105 per barrel during the first six months of 2014, the monthly average price of crude oil hit a five-year low in January 2015 (nearly $47 per barrel)—an approximately 57 percent decline since June 2014.[4] Between January and March of this year, oil prices rebounded slightly. However, the cumulative drop between June 2014 and March 2015 still exceeds 50 percent. There are different forces at play driving the current decline of crude oil prices at different frequencies.

Lower oil prices are explained not only by supply shocks but also by demand shocks. From the demand side, sluggish demand growth for oil is partly attributed to the weak recovery in Europe and to China's

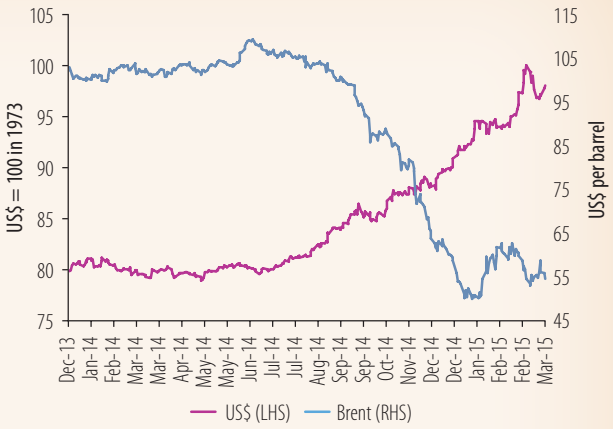
3 After the sharp drop in the last quarter of 2008 and first half of 2009, ample policy stimulus in the advanced world and among large and dynamic emerging markets produced a postcrisis recovery in commodity prices.

4 This international price for crude oil refers to the average of the Brent, WTI, and Dubai prices.

slowdown in economic activity. On the supply side, technological innovations in hydraulic fracturing and horizontal drilling techniques have enabled U.S. producers to access oil supplies trapped in shale oil fields. U.S. shale oil production grew from nearly 0.4 million barrels per day in 2007 to more than 4 million barrels a day in 2014 (Kilian 2014).[5] Moreover, the conflict in the Middle East has not created major disruption in the production of crude.[6] Others have suggested that the November 27, 2014, announcement by Saudi Arabia (the largest exporter of crude oil in the world) that it would maintain its share in world markets rather than cut production to defend a price contributed to the slide in oil prices.[7] Finally, the plunge in oil prices has been accompanied by a sharp appreciation of the U.S. dollar which, since end-June 2014, has appreciated more than 20 percent (see figure 12) (Baffes et al. 2015).

There is a strong negative correlation between the U.S. dollar and oil prices

FIGURE 12: Oil prices and the U.S. dollar

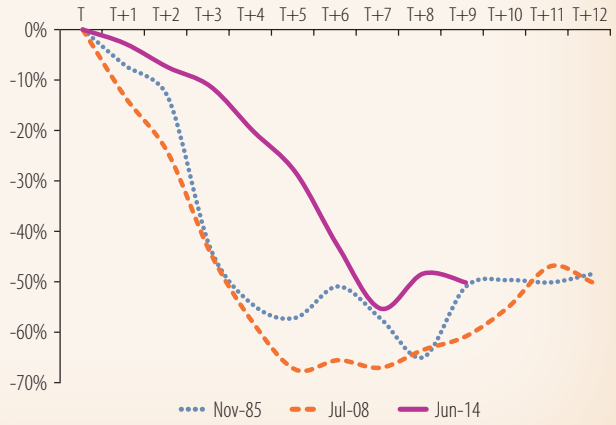


Source: Bloomberg.

Note: The U.S. dollar index is the weighted geometric mean of the U.S. dollar value relative to the major world currencies (Euro, Japanese Yen, British Pound, Canadian Dollar).

Since 1970, there have been three episodes of sharp decline in oil prices; the price of oil declined 57 percent since June 2014.

FIGURE 13: Oil prices



Source: DECPG Commodity Markets Outlook, World Bank.

Note: Period T corresponds to the month and year where the oil prices peak according to the Bry-Boschan monthly algorithm. We selected those episodes.

The negative association between oil price and exchange rates may be explained by increases in real interest rates in the United States. Frankel (2006) argues that higher U.S. interest rates strengthen the U.S. dollar and reduce the price of internationally traded commodities in the U.S. dollar—even if the price has not fallen or declined at a slower pace in foreign-currency terms. Anticipation of interest rate hikes by the Federal Reserve in 2015 may, however, trigger other channels of transmission (Frankel 2014). Portfolio managers may shift into Treasury bills (or other U.S. dollar-denominated assets) and out of commodity contracts. Firms may want to decrease inventories in anticipation of high rates. Finally, high interest rates may increase the incentive to extract nonrenewable resources today rather than tomorrow, thus boosting production and reducing their price.

The pronounced drop in crude oil prices since June 2014 is not unprecedented. Data on peak-to-trough cycles in crude oil prices from January 1960 to January 2015 show two other episodes of a cumulative drop from peak to trough that exceeds 50 percent: (a) from a peak in November 1985

5 To gauge the importance of the industry, shale oil accounted for almost half of U.S. oil production and a quarter of the total quantity of oil used by the U.S. economy in March 2014 (Kilian 2014).

6 Oil production in Libya has tripled to nearly 900,000 barrels a day since June (although it is 40 percent lower than in 2012). War has not stopped Iraq's oil production (approximately 3.1 million barrels a day). Finally, the Organization of Petroleum Exporting Countries (OPEC) boosted September production to an 11-month high of 30.9 million barrels a day.

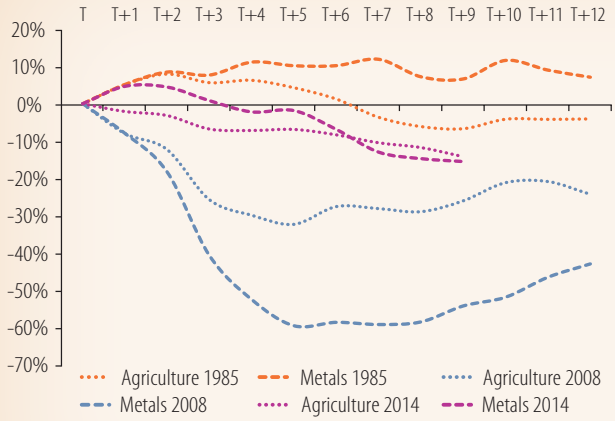
7 There are also other forces operating in the medium term that might explain a secular decline in oil prices, such as the substitution to other types of energy (solar and wind) and the increasing use of fuel-efficient vehicles.

to a trough in July 1986, with a price decline of 66 percent; and (b) from July 2008 to February 2009 with a cumulative oil price drop of 68 percent.[8] The drop in the average price of crude oil from June 2014 to January 2015 is approximately 57 percent (see figure 13). For the peak-to-trough episodes of 1985–86, it took the international price of oil more than 15 years to recover to previous peak levels. The current price of oil (an average of US$52.8 per barrel for March 2015) is 60 and 51 percent of that in the corresponding monthly peaks of July 2008 and June 2014.[9]

It has been argued that the recent decline in oil prices has an underlying set of shocks that is more in line with the developments in 1985–86: supply shocks appear to have played a larger role than demand shocks. There was a significant increase in the supply of oil from non-OPEC countries (Russia during the 1980s and U.S. shale oil producers in 2010s), and technological innovations in the production of oil (off-shore drilling in the 1980s and fracking in the 2010s). Furthermore, in both episodes, Saudi Arabia changed its policy directive in oil markets from price targeting to maintaining world market share. However, the synchronized weakening of energy, metals, and minerals, and agricultural prices was mainly driven by the contraction of global economic activity. We should note that the drop in international oil prices since June 2014 has not been as deep as that of 1985–86 and 2008–09.

Figure 14 shows the cumulative variation of the prices of agricultural commodities and of metals and mineral ores over the next eight months following the peak in oil prices of the three episodes mentioned above. During 1985–86, agricultural products initially increased but then declined by 6 percent in the eight months following the price drop, while metals and minerals experienced a 7 percent increase. As we argued above, the unprecedented negative shock on global economic activity during 2008–09 led to a sharp and broad-based weakening of commodity prices. On average, agricultural prices declined nearly 30 percent from July 2008 to March 2009, while the drop in metals and minerals was comparable to that of oil (a cumulative reduction short of 60 percent).

FIGURE 14: Commodity prices



Source: DECPG Commodity Markets Outlook, World Bank.

Note: Period T corresponds to the month and year when the oil prices peak, according to the Bry-Boschan monthly algorithm. We selected episodes where the peak-to-trough cumulative variation of oil prices exceeds 50 percent. Those peaks correspond to the months of November 1985, July 2008, and June 2014. The figure depicts the cumulative variation over the subsequent months of the international price indexes of agricultural goods, metals and mineral ores, and energy commodities.

There is significant variability in the evolution of nonoil commodity prices after a plunge in oil prices

There is also a great deal of heterogeneity in the dynamics across groups and within groups of commodity prices during periods of sharp decline in oil prices. Metals and minerals is the group with the largest price decline in 2008. Within this group, the international price of iron ore experiences the

8 The identification of episodes of sharp declines in oil prices implemented by the World Bank (2015) and Baffes et al. (2015) consists of selecting seven-month periods where the cumulative drop in oil prices exceeds 30 percent. They identify six periods that are related to major changes in global economic activity and world oil markets.

9 Baumeister and Kilian (2015) show that more than half of the plunge in oil prices was predictable in real time as of June 2014 and, hence, it reflects earlier cumulative effects of demand and supply shocks (instead of more recent shocks). Furthermore, the faster decline in oil prices during the second half of 2014 relative to other commodity prices might reflect oil-market-specific developments that occurred prior to June 2014—say, positive oil supply shocks or unexpectedly low demand for storage in response to expectations of higher future oil production.

sharpest drop after the oil peak prices of July 2008 and June 2014 (68 and 37 percent, respectively) followed by nickel, tin, and copper. The price of agricultural commodities also weakened, although at a lower rate than that of metals and minerals. On average, the drop in the price index for beverages, raw materials, and food slightly exceeded 10 percent since June 2014. However, the price of some agricultural commodities weakened at a faster pace. For instance, the price of cotton, wheat, soybean, and soybean meal exceeded 20 percent, whereas that of rice, bananas, and groundnuts strengthened.

In general, there is a sharp and broad-based decline in commodity prices during the global financial crisis as a result of the drop in world demand for commodities—especially, those associated with industrialization and urbanization, such as energy and metals. During the 1985–86 episode, there is a major drop in energy prices, but not for metals and minerals or for food and agricultural raw materials. Since June 2014, the prices of all groups of commodity prices have weakened, although at a slower pace than that of the decline in 2008. These findings imply that, first, the commodity price episode of 1985–86 was driven mainly by shocks specific to the oil market rather than global demand weakening, and second, the sharp drop in global economic activity explains the commodity price decline of 2008–09. The reduction of the global demand for commodities is more pronounced among energy commodities (crude oil and natural gas) and metals and minerals (iron ore, copper, aluminum, among others). Finally, both oil-market-supply and global-demand shocks were at play during the recent decline in commodity prices. Oil sharply weakened over the last eight months, and there has been a synchronized decline in the price of commodities that are inputs for industrialization and urbanization. This might signal not only that the peak of the super cycle has already occurred, but also that the end of the cycle is (almost) near.

CHARACTERISTICS OF THE CURRENT CYCLE OF COMMODITY PRICES: HOW DIFFERENT IS IT FROM EARLIER CYCLES?

This section characterizes the main features of the evolution of commodity prices during the last 15 years (that is, 2000–15) relative to 1970–99. We look at the basic properties of fluctuations in international commodity prices from two complementary perspectives. First, a statistical analysis of price fluctuations over the two aforementioned periods that includes the computation of the moments of the distribution and correlations is conducted. Second, peaks and troughs of international commodity prices using the Harding and Pagan (2002) algorithm are identified. Once those turning points are identified, the properties of upswings and downswings in international prices—as measured by the duration and amplitude of the different phases of their cycles—are examined.

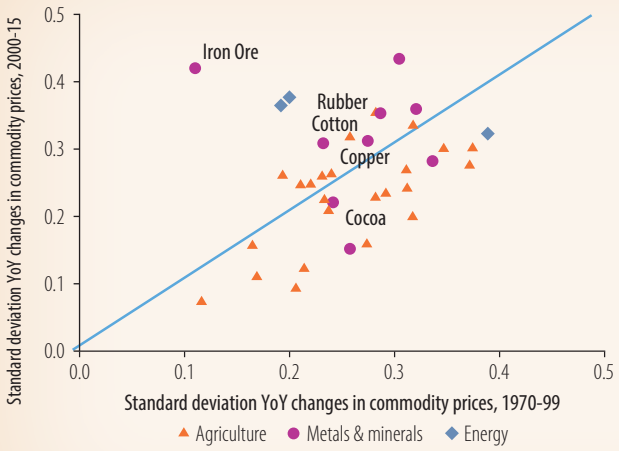
The analysis of commodity price movements will attempt to respond to the following questions: (a) have the distribution of commodity price fluctuations changed over time, or, more specifically, have commodity prices become more volatile over time?; and (b) have commodity prices become more correlated over time, or are they decoupling over time? To accomplish this task, we analyzed monthly information on commodity prices from January 1970 to February 2015.

Has commodity price volatility risen over time?

Figure 15 plots the volatility of (annual) changes in the international prices of commodities during 1970–99 compared to their corresponding volatility in 2000–15. The standard deviation of annual

changes in the price of 36 commodities is obtained for the two subperiods.[10] We find that 16 of the 36 commodities displayed more volatile fluctuations over the last 15 years relative to 1970–99. The standard deviation increased almost 50 percent for those commodities that experienced greater volatility during 2000–15, while it declined by 25 percent for those commodities with lower volatility in the last 15 years. The most notable increases in volatility occurred among energy commodities and base metals. For instance, the standard deviation of coal and natural gas almost doubled from 1970–99 to 2000-15 (that of oil was slightly lower). The standard deviation of iron ore prices during 2000–15 was four times as high as during 1970–99, while the standard deviation of the rest of base metals (copper, lead, nickel, tin, and zinc) grew between 15 and 40 percent over time. Finally, only 8 of 24 agricultural commodities displayed higher volatility during 2000–15, and, as a whole, the volatility of these 8 commodities increased nearly 15 percent, on average.

FIGURE 15: Commodity price volatility



Source: DECPG Commodity Markets Outlook, World Bank.

Note: The scatterplot depicts the standard deviation of year-on-year changes in 36 commodity prices during 1970–99 compared to those during 2000–15. Figures above the 45-degree diagonal represent commodities that display higher volatility during 2000–15.

Metals and energy commodity prices have become more volatile over the last 15 years

Further testing of rising commodity price volatility over time involves examination of the duration and amplitude of upswings and downswings in commodity prices; more specifically, it involves evaluating whether these properties have changed over time. Have upswings in international commodity prices become longer and more pronounced? Have downswings in international commodity prices become shorter and shallower? To answer these questions we look at the different peak-to-trough (downswing) and trough-to-peak (upswing) phases of the cycle of international commodity prices.

Results at the group level show that the duration of upswings in commodity prices has increased, although at different rates. The median amplitude in upswings more than doubled for energy commodities, while that of agriculture slightly increases, and the amplitude of the cycle of metal prices remains almost invariant. The average duration of downswings in the prices of energy and metals declined, but increased for agricultural commodities. The median amplitude in downswings is largely unchanged for different commodity groups. The evidence on changes in duration and amplitude across groups masks a great deal of heterogeneity within groups.

Have commodity prices become more synchronized over time?

The salient feature of commodity price super cycles is that they are mainly demand-driven, and this implies that individual commodity prices will tend to move together with a strong positive correlation

10 This basket of 36 commodities comprises 24 agricultural commodities, 9 metals and minerals, and 3 energy commodities.

(Pindyck and Rotemberg 1990). One would expect, then, a greater co-movement between fuel and nonfuel commodity prices and among nonfuel commodity prices over the last 15 years (that is, the current commodity super cycle) compared with 1970–99.

Table 2 shows the correlation matrix of a selected group of commodity prices.[11] The numbers above the diagonal (shaded in red) represent correlation coefficients for 1970–99, whereas those below the diagonal correspond to 2000–15 (shaded in green). Results show that 79 pairwise correlation coefficients are larger during 2000–15 relative to 1970–99. Focusing only on those with a positive correlation in the latter period, we find that 75 pairwise correlations (more than 70 percent of the pairwise correlations computed per period) were positive and stronger than during 1970–99. Note that the median correlation for those commodity pairs with a positive co-movement increased from 0.28 during 1970–99 to 0.39 during 2000–15. The median correlation among nonoil commodities increased slightly from 0.34 to 0.38, whereas the commodity pairs that involved energy commodities increased from 0.12 to 0.42. The correlation between fuel prices and base metals (for example, aluminum, copper, and iron ore) exceeded 0.67 during 2000–15, while it was below 0.3 during 1970–99. Pairwise correlation among base metals was also high during 2000–15 (it exceeded 0.6).

TABLE 2: Commodity price correlation, 1970–99 and 2000–15
Correlation among commodity prices has increased over time

	Crude Oil	Natural Gas	Cocoa	Coffee	Tea	Rice	Wheat	Sugar	Tobacco	Cotton	Aluminum	Iron Ore	Copper	Gold	Silver
Crude Oil	1	0.3986	0.0004	0.0287	0.1489	0.1614	0.2265	0.1491	0.1342	0.2737	0.1725	0.2411	0.2883	0.3687	0.4140
Natural Gas	0.5785	1	-0.0592	-0.0829	0.1800	0.1013	0.2013	0.1130	0.0581	-0.0498	-0.1493	0.2627	-0.1058	0.1913	0.1136
Cocoa	0.1714	0.0214	1	0.4875	0.4069	0.0506	-0.1423	-0.0898	0.1447	0.2214	0.1600	-0.0242	0.1039	-0.0760	0.0508
Coffee	0.2581	0.0392	0.3193	1	0.2613	-0.1470	-0.1711	-0.1767	0.0576	0.1072	0.3026	0.0454	0.2581	-0.0540	0.0824
Tea	0.4354	-0.0015	0.3066	0.1638	1	-0.0266	-0.1195	0.1586	0.3297	0.2497	0.1459	0.0507	-0.0275	0.1014	0.1617
Rice	0.4613	0.4258	0.1242	0.0456	0.2859	1	0.5608	0.3015	-0.0581	0.3415	0.1267	-0.1076	0.4237	0.3150	0.1729
Wheat	0.6450	0.3567	0.1286	0.2670	0.3700	0.3301	1	0.1685	0.0286	0.2355	0.0873	-0.0407	0.4453	0.2141	0.1841
Sugar	0.1868	-0.0353	0.4144	0.6298	0.1959	-0.0742	-0.0660	1	0.0051	0.0014	0.1535	0.0577	0.0240	0.5049	0.2781
Tobacco	-0.2095	-0.3100	0.2576	0.2199	0.1422	-0.1523	-0.2837	0.2754	1	0.1409	-0.2602	0.5334	-0.0568	-0.1564	-0.0684
Cotton	0.3375	0.1981	0.2500	0.6193	0.2940	-0.0299	0.4845	0.3884	0.0755	1	0.1994	0.0985	0.4889	0.3019	0.2371
Aluminum	0.6702	0.3877	0.1212	0.4018	0.3054	0.1704	0.4538	0.3218	-0.2495	0.4153	1	-0.2307	0.5222	0.3833	0.3991
Iron Ore	0.8056	0.4224	0.2479	0.3067	0.3913	0.2955	0.6676	0.2500	-0.1684	0.4608	0.6155	1	-0.0515	0.1017	0.1017
Copper	0.6813	0.1916	0.1604	0.3806	0.4824	0.0964	0.5401	0.3770	-0.1724	0.4830	0.8919	0.6853	1	0.2609	0.3161
Gold	0.4223	-0.0147	-0.0463	0.3636	0.4257	0.3501	0.3710	0.3852	-0.1354	0.2110	0.3222	0.3715	0.4677	1	0.7945
Silver	0.4924	0.0591	0.0492	0.5929	0.3789	0.2189	0.5258	0.4067	-0.0651	0.5694	0.5189	0.4483	0.6232	0.8230	1

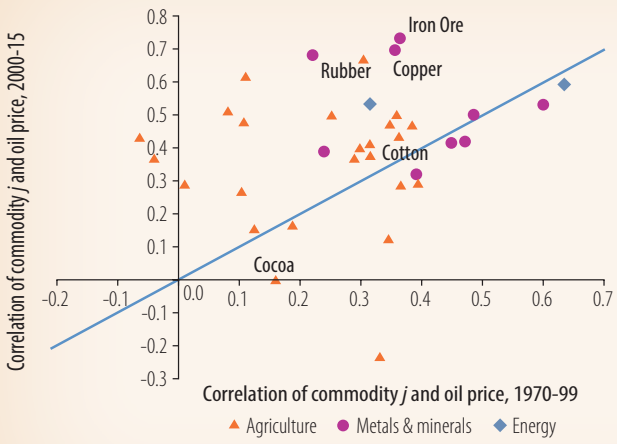
Source: World Bank staff calculations.

Note: The table reports the correlation among year-on-year changes in international commodity prices. The numbers above the diagonal represent correlation coefficients for 1970-99, while those below the diagonal correspond to 2000-15.

11 The selected group of 15 commodities that produced 105 pairwise correlation coefficients for each period.

Figure 16 complements the information presented in table 2 by depicting the changes in the co-movement between oil prices and the prices of a wider basket of fuel and nonfuel commodities.[12] From a total of 35 pairwise correlations between oil and other commodities, we find that 24 pairwise correlations (nearly 70 percent of the sample) increased over time. Again, the largest correlation with oil prices is exhibited by three base metals (aluminum, copper, and iron ore). Finally, note that 18 of the 25 agricultural commodities—whose correlation with oil price is depicted in figure 2—exhibit a greater correlation during 2000–15, most notably, rubber and wood pulp.

FIGURE 16: Co-movement of oil and commodity prices



Co-movement of commodities with oil prices has increased over the last 15 years

Source: World Bank.

Note: The scatterplot depicts the price correlation of commodity *j* and oil (both expressed in annual variations) for 36 commodity prices (other than oil) during 1970–99 compared to those during 2000–15. Figures above the 45-degree diagonal represent greater co-movement between commodity *j* and oil prices during 2000–15.

Thus, key characteristics of the current commodity price super cycle are higher volatility for some commodities and more synchronized movement among commodity prices. Compared with 1970-99, energy commodities and base metals have become more volatile, but the volatility of agricultural commodities has declined. In tandem, the co-movement between fuel and nonfuel prices, has strengthened. Base metals such as aluminum, copper, and iron ore exhibit the largest correlation with oil prices, but agricultural commodity prices have also become more correlated with oil.

BOOM-BUST IN COMMODITY PRICES AND THEIR IMMEDIATE IMPACT ON TERMS OF TRADE

Sub-Saharan African countries are typically more likely to experience sharp collapses in economic activity than any other region in the world. In fact, real GDP in Sub-Saharan Africa is almost twice as likely to fall into a deep recession as in other developing countries. The excess volatility in output and consumption of Sub-Saharan African countries relative to other developing countries and advanced economies is typically attributed in the literature to the size and occurrence of exogenous external shocks. In general, external shocks play an important role in driving volatile output fluctuations (Akıncı 2013; Kose and Riezman 2001). For instance, output fluctuations tend to be more volatile in environments with sharp swings in the relative price of their exports. In turn, high terms-of-trade volatility reflects structures of trade and production that are not diversified and that rely mainly on primary commodities.

In the event of an external shock, some countries tend to have an internal environment (that is, structural features) that exacerbates the response to the shock. For instance, the lack of diversification of the export sector or financial mechanisms may magnify the response of the economy to a shock in terms of trade. In

12 In contrast to the calculations underlying table 2, this scatterplot depicts the correlation between the international price of oil and the price of 35 commodities (among fuel and nonfuel commodities).

fact, having a nondiversified basket of exports—concentrated in a few primary commodities— increases the vulnerability of the real sector to adverse terms-of-trade shocks (Loayza and Raddatz 2006).

Natural resources in Sub-Saharan Africa: What does the region export?

Sub-Saharan Africa (SSA) is a net exporter of primary commodities. During 2010-12, the region as a whole had a trade surplus in oil of 12.3 percent of GDP. It also registered trade surpluses in nonoil commodities such as cocoa, iron ore, gold, and coffee. Despite efforts to expand and diversify the export base over the last decade, the region's export basket is still dominated by a limited array of primary commodities. The share of the top five commodity exports exceed one-third of GDP in five SSA countries: Angola, Chad, Côte d'Ivoire, Mauritania, and Republic of Congo. In 28 of 48 SSA countries, the top five export goods represented more than 50 percent of total exports in 2012.

In terms of export earnings, SSA's main export goods are crude oil, gold, natural gas, silver, cocoa, and iron ore. Crude oil is the top export of Angola, Cameroon, Chad, Republic of Congo, Gabon, Nigeria, and Sudan. The export earnings in oil typically exceeded 80 percent of merchandise exports for all oil-abundant countries, with the exception of Cameroon. Extractive industries play a key role in various economies. For instance, iron ore is the top commodity export in Mauritania, copper is a main commodity export in the Democratic Republic of Congo and Zambia, aluminum in Guinea, and tin in Rwanda. In other countries, agriculture is very important for the economy. For example, coffee is the main commodity export of Burundi and Ethiopia, cocoa is the top commodity export of Côte d'Ivoire and Togo, and cashews are the principal export of Guinea-Bissau.

In general, import trade is more diversified, but the dependence on fuel and a few industrial imports is still substantial. The five main import commodities represent between 3.5 and 7.1 percent for the Republic of Congo and Namibia, respectively, and 39 and 36.5 percent of total merchandise imports for Cameroon and Côte d'Ivoire, respectively. Import trade is highly concentrated in terms of products; 43 of 48 countries in the region import steel.

Oil is the most important commodity traded in the region; it is among the top five export items in 18 of the 48 countries in the region. Fifteen countries report imports of oil and oil products among their top 5 import items. Oil trade is more important on the import side in countries such as Kenya, Senegal, South Africa, and Togo. On the export front, oil is more important in Angola, Republic of Congo, Equatorial Guinea, Nigeria, South Sudan, and Sudan, among others.

Table 3 illustrates the previously mentioned fact that, regardless of the concentration measure, exports are more concentrated than imports by a large margin (around five times). Regarding exports, unsurprisingly, energy-exporting countries have concentration measures that are much higher than other countries. Indeed, 96 percent of their total exports come from their three biggest exports, representing almost 30 percent of their GDP. This dependence exposes them to swings in energy prices. Agriculture-exporting countries seem to also be highly concentrated, with their top three exports representing 72 percent of their merchandise export, above the continent's median. Countries exporting metals and minerals have slightly lower concentration ratios, with their top three exports accounting for just over 60 percent of exports. Other countries, or noncommodity countries, seem to be well diversified,

TABLE 3: Concentration of exports and imports for the region, 2012

	Concentration ratios[a]			
	% Merchandise trade		% GDP	
	CR3	CR5	CR3	CR5
I. Exports				
Sub-Saharan Africa of which:	68.7	73.9	9.2	11.0
• Agricultural exporters	71.5	78.9	5.7	5.8
• Metals and minerals exporters	60.7	65.3	12.9	15.4
• Energy exporters	96.0	96.7	29.6	29.8
• Others	18.4	18.8	2.6	2.8
II. Imports				
Sub-Saharan Africa of which:	13.3	15.3	4.5	5.3
• Agricultural exporters	13.7	14.7	5.3	6.1
• Metals and minerals exporters	13.6	15.8	3.7	4.5
• Energy exporters	10.3	11.4	2.3	2.6
• Others	12.1	15.4	6.5	8.1

Source: World Integrated Trade Solutions (WITS) database.
Note: a. CR3 and CR5 are the share of the top 3 and 5 commodity exports and imports, respectively.

with a median of the top five exports below 20 percent. On the import side, the story is a little different in that all country groups have fairly low concentration ratios.

Figure 17 also shows that energy-exporting countries have more concentrated exports and that the level of concentration is relatively higher than imports. Six of the 10 countries with the most concentrated exports are energy exporters, and all have a significant part of their export in energy, metals and minerals, or agriculture. As mentioned, imports are less concentrated, with concentration ratios topping off at less than 40 percent, compared to four countries being above 98 percent on the export side. Countries with the highest commodity import concentration structure show more diversification as only two of those countries are energy exporters, two export metals and minerals, and four export agricultural products.

A first-order estimate of the terms-of-trade effect of the current change in commodity prices

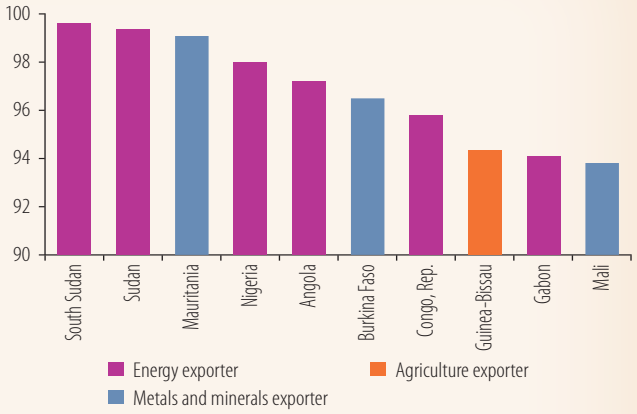
Recent sharp swings in commodity prices (figure 2) have had a significant impact on many countries in the Africa region. Most notably, the plunge in oil prices has created severe budgetary and balance-of-payments problems for oil exporters like Angola, Chad, the Republic of Congo, Gabon, and Nigeria. However, it has benefited oil importers by drastically reducing their import bill.

The Africa region as a whole is not only a net exporter of crude oil (with a trade surplus of 12.3 percent of GDP during 2010–12), but it is also an exporter of other commodities, including agricultural raw materials, beverages, base metals, and precious metals. Recent fluctuations in nonfuel commodities have also been important. Several commodity prices different from oil have also weakened over the last year, although the trend has been far from uniform. Iron ore prices have declined by 37 percent

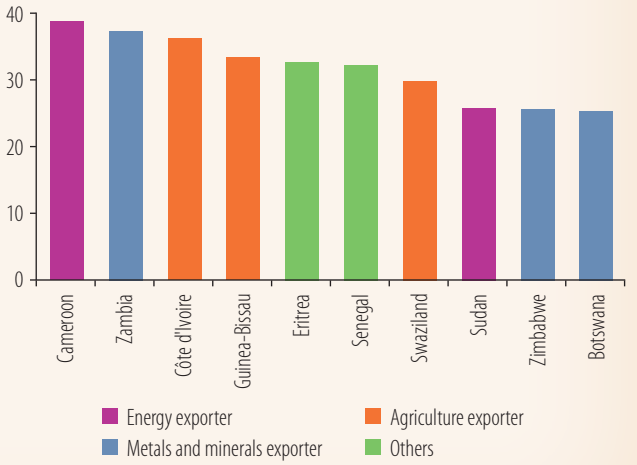
The structure of exports is more biased toward commodities than that of imports in Sub-Saharan Africa

FIGURE 17: Share of top five products in commodity trade, 2012

A. **Commodity Exports**



B. **Commodity Imports**



Source: World Integrated Trade Solutions (WITS) database.

Note: Countries with the largest share of top five commodity exports and commodity imports relative to their total merchandise exports and imports, respectively.

while international prices of rubber and cotton dropped approximately 24 percent and 17 percent, respectively. However, some African countries have actually had a boost from terms-of-trade fluctuations thanks not only to weak prices of oil imports but also to the prices of plywood (10 percent), ground nuts (7 percent), and aluminum (3 percent).

This section computes the first-order aggregate terms of trade for 48 countries in the region (both resource rich and resource poor) using a basket of 36 commodities. This basket includes 3 energy commodities, 9 metals and minerals, and 24 agricultural commodities.[13] This particular group of commodities was selected due to its significant presence in the commodity basket of the region, and the existence of liquid markets that allow for the identification of a clear international price. Having a diversified basket in the analysis highlights the need to understand the granularity of the impact on aggregate terms of trade of movements in international prices of commodities. The commodity basket for a few African countries might be underrepresented, however, due to price data limitations. Among the commodities with missing (or the lack of international) prices are diamonds (with a large share in the export basket of Botswana, the Central African Republic, the Democratic Republic of Congo, Namibia, and Sierra Leone), uranium (Namibia and Niger), cloves (Comoros and Tanzania), fish (Cabo Verde and the Seychelles), and bauxite (Guinea).

To assess the initial impact of recent commodity price movements for Sub-Saharan African countries, the estimated changes in their corresponding terms of trade resulting from movements in commodity prices is examined. For each commodity *i*, the percentage variation between the average price of 2015 (as forecasted in January 2015) and the average price of 2014 is computed—which is denoted here as

13 The group of energy commodities comprises crude oil, natural gas, and coal. The group of metals and minerals (including precious metals) comprises aluminum, copper, gold, iron ore, lead, nickel, silver, tin, and zinc. Agricultural commodities (food, beverages, and raw materials) comprises bananas, beef, cocoa, coffee, cotton, groundnuts, groundnut oil, logs, maize, oranges, palm oil, plywood, rice, rubber, sawn wood, sorghum, soybeans, soybean meal, soybean oil, sugar, tea, tobacco, wheat, and wood pulp.

$$\frac{\Delta P_i}{P_{i,2014}}$$

The change in the terms of trade (*TOT*) for country *j* with respect to commodity *i* in 2015 relative to 2014 is defined by

$$\frac{\Delta TOT_j^i}{TOT_{j,2014}^i} = \sum_{i=1}^{n} (S_j^{ix} - S_j^{im}) \frac{\Delta P_i}{P_{i,2014}}$$

where

$$S_j^{ix}, S_j^{im}$$

are the shares of commodity *i* in country *j*'s exports and imports, respectively, and P_i is the world price of commodity *i*. The terms-of-trade change for country *j* is the sum of these changes over all the commodities considered. Note that this first-order approach tends to underestimate the net trade benefits resulting from price changes, since export supply and import demand are currently adjusting to new relative prices and exchange rates in a manner that should be welfare improving. Thus, this is an assessment only of the magnitude of the initial shock to trade in the region before any adjustments in supply, demand, or economic policy.

The initial approximation of the terms-of-trade effects of commodity prices may also be under- or over-estimated in countries for other reasons. First, the trade structure considered in the assessment of the terms-of-trade effects was computed over the period 2010-12. However, extraction from recent discoveries of nonrenewable resources may change these structures over time. For instance, tungsten became the major commodity export of Rwanda in 2013. Second, the calculation of the terms-of-trade effect involves average prices in international markets. Since they are considered for a broad group of countries, these prices may not necessarily match those received by the country. For instance, there are some discrepancies in the variation of Kolkata and Mombasa tea prices. Third, price change used is the expected percentage variation of the international price of each commodity for 2015, that is, the price predicted for 2015 compared with the actual price for 2014. This forecast might differ from actual year-on-year or year-to-date changes in commodity prices up to March 2015. Fourth, one may not distinguish sharp declines in commodity prices from more secular downward trends if the time horizon over which the price changes is longer. Calculating average annual variation in commodity prices over 3- or 4-year periods will conceal the sharp decline of oil prices over the last 9 months. Finally, the basket of commodities excludes those goods where some form of processing has been undertaken and, hence, are classified as manufacturing goods. For instance, we exclude exports of aluminum bars in Mozambique, refined copper in Zambia and the Democratic Republic of Congo, and exports or imports of refined petroleum in some African countries.

The effects on the terms of trade of a price shock for each commodity are simulated. The percentage variation between the 2015 price projected by the World Bank and the actual price for 2014 is computed.[14] Terms-of-trade effects can be interpreted as the outcome of expected change in

14 The vector of commodity prices projected for 2015 is taken from DECPG's forecasts conducted in January 2015. See http://www.worldbank.org/content/dam/Worldbank/GEP/GEP2015a/Price_Forecast.pdf.

TABLE 4: Aggregate terms-of-trade effects of changes in commodity prices for SSA and subregions *(Percentage change)*

	TOT Effect due to:			Overall TOT Effect
	Agriculture	Metals & minerals	Energy	
Sub-Saharan Africa	-0.31	-0.86	-17.10	-18.26
of which:				
Agricultural exporters	-2.44	-0.25	2.06	-0.63
Metals and minerals exporters	-0.14	-2.17	3.50	1.19
Energy exporters	0.02	-0.02	-39.55	-39.55
Others	-0.11	0.00	1.41	1.30
Fragile	-0.56	-0.74	-20.12	-21.42
HIPC	-1.15	-0.75	-9.50	-11.40
Memo: Terms of trade (TOT) gainers and losers (GDP-weighted)				
TOT losers	-0.35	-0.23	-19.83	-20.41
TOT gainers	0.00	-0.56	1.87	1.3

Source: World Integrated Trade Solutions (WITS) database.

Note: The aggregate TOT effects for the region as a whole. Agricultural exporters are those with share of agricultural commodity exports in total merchandise exports that exceeds 25 percent of GDP. The same threshold applies to exporters of metals and minerals, and energy commodities.

commodity prices in 2015. Table 4 shows aggregate estimates of the terms-of-trade change for Sub-Saharan Africa as a whole, and the contribution of price swings in agricultural, metals and minerals, and energy commodities.

Overall, the initial terms-of-trade shock effect reflects a loss of 18.3 percent for Sub-Saharan Africa as a region, and this deterioration is mainly explained by the decline in oil and other energy commodities. However, the terms-of-trade effect changed at a different pace depending on the extent of abundance of natural resources in the country. For instance, the decline in terms of trade is about 40 percent for oil-exporting countries. By contrast, countries that exported agricultural commodities experienced a much smaller deterioration in their terms of trade of 0.6 percent, and exporters of metals and minerals show a modest gain of 1.2 percent.

Finally, the impact of commodity prices on countries that may have other covariate risks is computed. For instance, the terms of trade of fragile countries in the region were reduced by 21 percent, whereas that of *heavily indebted poor* countries declined by 11 percent. Note that the main driver of the terms-of-trade deterioration for this group was energy prices, the contribution of which exceeded 80 percent of the overall change in terms of trade.

Figure 18 illustrates the estimated terms-of-trade changes for 48 countries in the region for which relevant commodity export, import, and international price data are available. According to their degree of vulnerability, the map shows SSA countries classified as being more vulnerable, less vulnerable, and resilient to the current decline in commodity prices. More vulnerable countries are those that register terms-of-trade deterioration that exceeded 10 percent, while those with smaller terms-of-trade decline (smaller than 10 percent) are considered less vulnerable. Countries that registered terms-of-trade gains are labeled as resilient.

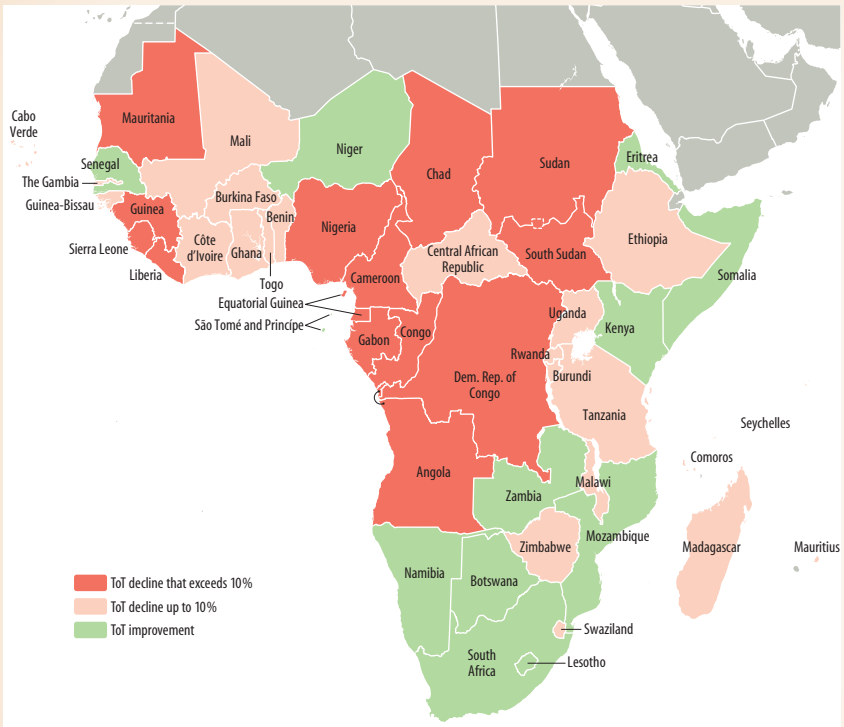
Calculations show that 36 countries in the region (out of a total of 48) experienced a deterioration in terms of trade (which includes both the more and less vulnerable countries). These countries represent nearly 80 percent of the population and about 70 percent of the level of economic activity of the region.

Fourteen countries are highly vulnerable to the fall in commodity prices; that is, they experienced terms-of-trade deterioration greater than 10 percent. In contrast, no country in the region was able to register terms-

of-trade gains greater than 10 percent. In fact, the distribution of gains and losses in terms of trade across SSA countries is asymmetric; the negative terms-of-trade shocks are significantly larger than the positive ones. The average terms-of-trade change among the countries that registered a deterioration is -20.4 percent, while that of the gainers is 1.3 percent. Figure 19 shows that countries that had the largest losses in terms of trade represent nearly 40 percent of the region's population and more than 50 percent of its economic activity. In contrast, the countries that exhibited terms-of-trade gains represented only 22 percent of the region's population and less than one-third of its GDP.

FIGURE 18: Terms-of-trade effects

The impact of commodity price movements on terms of trade varies across countries in the region



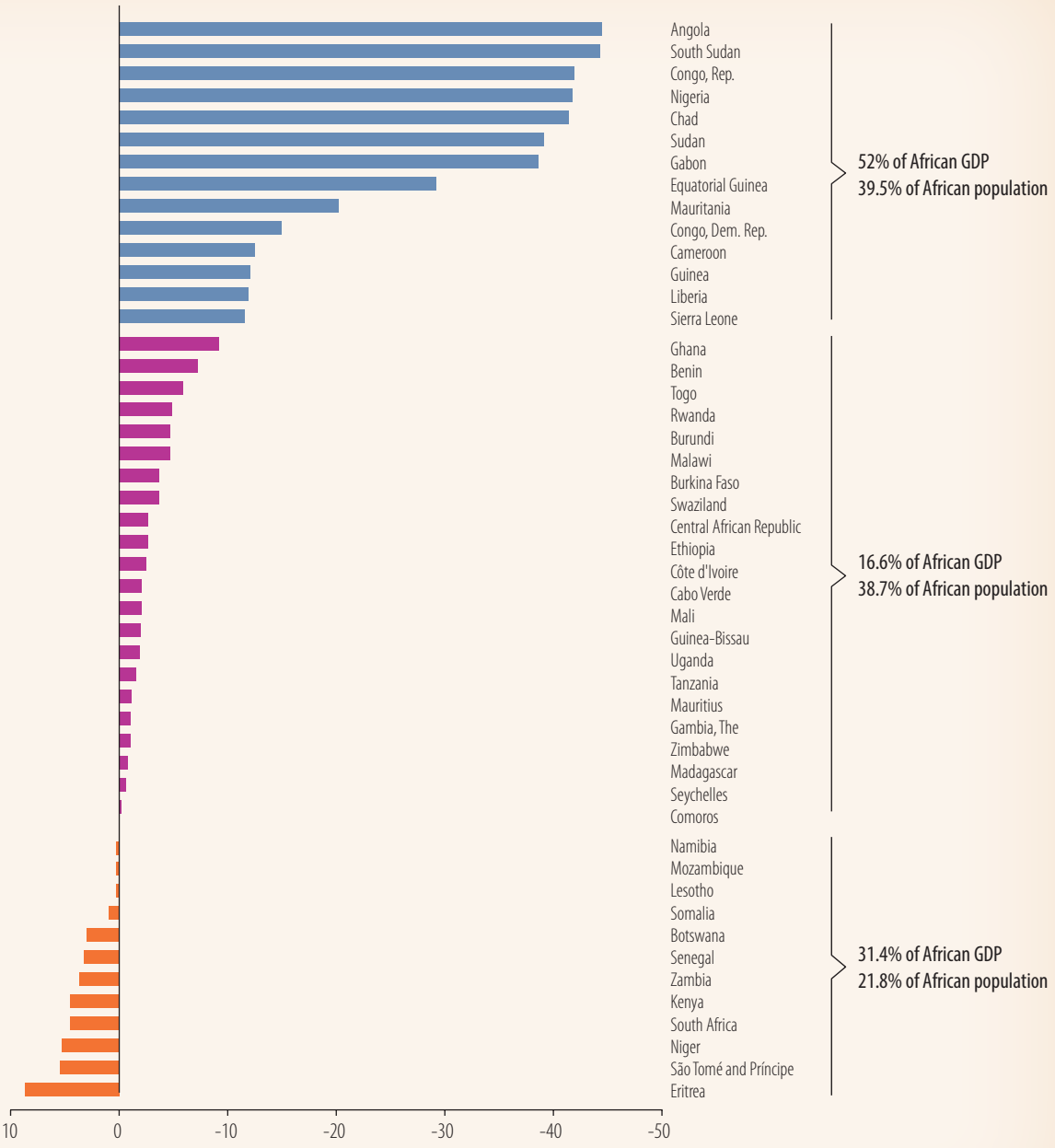
Sources: World Integrated Trade Solutions (WITS) and World Bank.

Note: The aggregate terms-of-trade effects are computed as the sum of the price shock of commodity *j* times the difference of their export and import shares relative to total export and import merchandise. Price shocks were computed as the percentage variation of the predicted 2015 price of commodity *j* relative to the actual 2014 price.

Figure 20 zooms in on the magnitude of the changes in the terms of trade and their sources of variation (resulting from movements in international prices of agricultural, metals and minerals, and energy commodities). It suggests a natural classification of African countries according to the magnitude and nature of the terms-of-trade effect recently experienced. Among the highly vulnerable countries, 9 experienced terms-of-trade deterioration of 20 percent or more. Eight of these countries—Angola, Chad, Republic of Congo, Equatorial Guinea, Gabon, Nigeria, Sudan, and South Sudan—are major oil exporters. The ninth country, Mauritania, experienced a dramatic loss in terms of trade due to the high share of iron ore in its export basket. A second group of 5 countries experienced a terms-of-trade deterioration in the range of 10 to 15 percent. Most of these countries are energy exporters, but changes in nonenergy export prices have also played an important role. The fall in the terms of trade in Cameroon, the Democratic Republic of Congo, and Guinea comes primarily from oil. In the Democratic Republic of Congo, the negative shock from oil is magnified by additional losses attributed to weaker copper prices. In Guinea, it is partially offset by aluminum price hikes. Declining prices of cocoa also contributed to the deterioration of terms of trade in Cameroon. Finally, iron ore explains the large terms-of-trade decline in Liberia and Sierra Leone. In the case of Liberia, oil and rubber also contributes to the deterioration.

Thirty six countries in SSA experienced a deterioration in their terms of trade; these countries represent nearly 80 percent of the population and about 70 percent of GDP of the region.

FIGURE 19: Distribution of terms-of-trade gains and losses



Source: World Bank staff estimates.

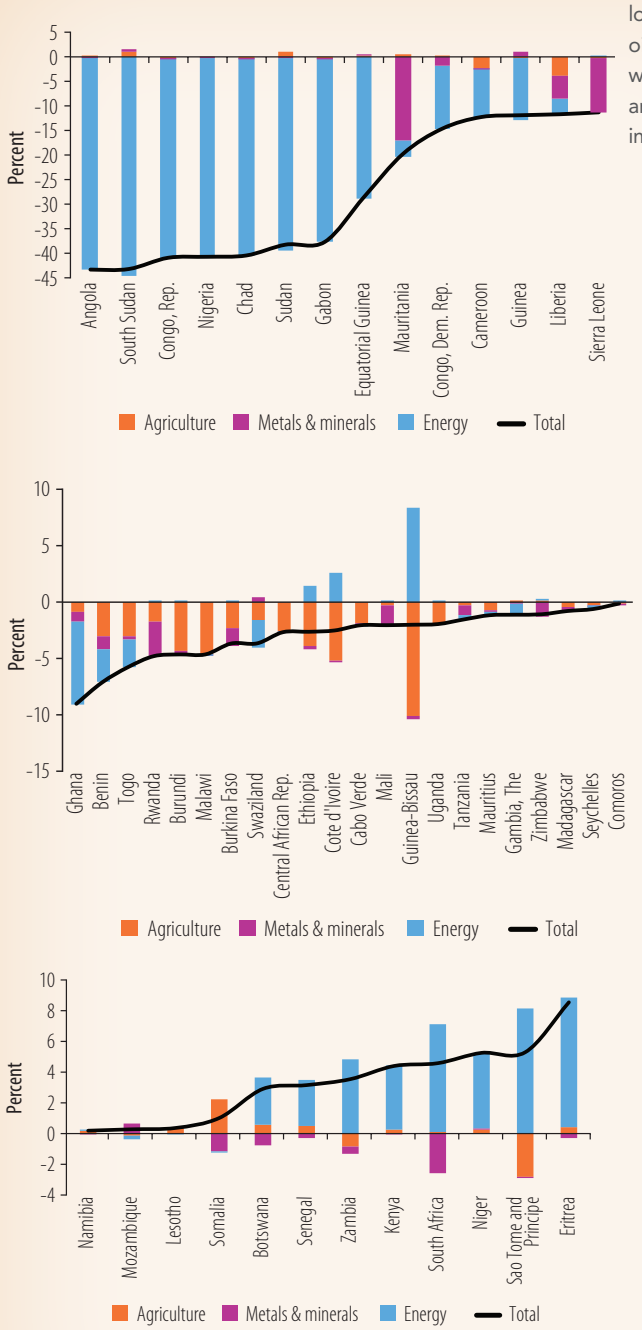
Note: The aggregate terms-of-trade effects are computed as the sum of the price shock of commodity *j* times the difference of their export and import shares relative to total export and import merchandise. Price shocks were computed as the percentage variation of the predicted 2015 price of commodity *j* relative to the actual 2014 price. The countries more vulnerable to the decline in international commodity prices are those with terms-of-trade (TOT) deterioration that exceeds 10 percent. Countries with a deterioration lower than 10 percent are denoted as less vulnerable countries. Countries with TOT gains are labeled as more resilient countries.

Twenty two countries in Sub-Saharan Africa faced declining terms of trade that were smaller than 10 percent. In this group of countries, the terms-of-trade deterioration in Ghana (of nearly 9 percent) is attributed to weakening prices of oil and, to a lesser extent, cocoa and gold. Most of the terms-of-trade deterioration in Togo comes from a decline in the price of cocoa, while Benin experienced a weakening in the price of cotton. For Benin, terms-of-trade losses from oil exports were accompanied by a deterioration attributed to declining prices of cotton and gold.

For the 19 countries that experienced a reduction in their terms of trade smaller than 5 percent, these losses were attributed to weaker nonenergy commodities (except for Swaziland). Weaker prices of tin and coffee explain the decline in aggregate terms of trade of Rwanda, while tobacco and, to a lesser extent, cotton, drive the losses in Malawi. Furthermore, terms-of-trade deterioration in Burundi is mainly driven by declining coffee prices, while sugar and oil jointly explain the fall in Swaziland. In this group of countries with medium vulnerability, the benefits from cheaper fuel and natural gas for (net) energy importers were fully offset by the deterioration in the export prices of metals and minerals and agricultural commodities. For instance, declining prices for cashew nuts erase the benefits of cheaper fuel in Guinea-Bissau, while the losses attributed to weaker prices of cocoa and rubber erase the gains from cheaper oil in Côte d'Ivoire. Finally, some countries in this group were affected by sharp declines in coffee prices (Ethiopia and Uganda), gold (Mali and Tanzania), and nickel (Zimbabwe).[15]

FIGURE 20: Terms-of-trade effects

Terms-of-trade losers are mostly oil exporters, while winners are mostly oil importers



Source: World Bank.

Note: Countries are more vulnerable to declining commodity prices are those whose aggregate terms-of-trade deterioration exceeds 10 percent. Those with terms-of-trade losses of less than 10 percent are defined as countries less vulnerable. The countries more resilient to declining commodity prices are denoted as more resilient. The price shock is the change in the predicted price for 2015 compared with the actual price for 2014.

Twelve countries in Sub-Saharan Africa experienced positive terms-of-trade shocks. Again, the magnitude of terms-of-trade gains in this group of resilient countries is markedly smaller than that of the losses of the more vulnerable countries. Most of the countries in this group benefit from weaker fuel prices; however, these benefits were partly reduced by offsetting effects from sharp swings in different commodity prices. Botswana, South Africa, and Zambia benefit from lower fuel prices, but these gains are partially offset by losses coming from declining international prices of nickel, iron ore, and copper, respectively. Terms-of-trade gains are registered by Kenya and Senegal thanks

15 This calculation does not account for additional benefits that these countries might receive by increasing imports of cheaper fuel.

to lower oil prices, but these gains were estimated at less than 5 percent. The positive terms-of-trade effects of São Tomé and Principe (5.3 percent) are attributed to weaker oil prices and are partly offset by lower cocoa prices. Finally, Kenya and Niger[16] benefit strongly from lower oil prices and, to a much lesser extent, from stronger prices of tea and maize, respectively.

The discussion conducted above is partly summarized in table 5, which explores whether having commodities other than oil may have helped oil exporters cushion the decline in fuel prices, and either contributed to or offset the gains from cheaper oil for nonfuel commodity exporters. The table shows that countries like Rwanda and Tanzania had moderate terms-of-trade effects coming from either oil or the entire basket of commodities. Some countries such as Ghana and Togo are more vulnerable to negative terms-of-trade effect when only oil prices decline, but the deterioration in the terms of trade is partly offset when all commodities are taken into account.

TABLE 5: Typology of Sub-Saharan African countries by their terms-of-trade effects of declining prices

Oil TOT Impact	Commodity TOT Impact: More resilient	Commodity TOT Impact: Less vulnerable	Commodity TOT Impact: More vulnerable
More resilient	Botswana Eritrea Kenya Mozambique Niger São Tomé and Príncipe Senegal South Africa Zambia	Cabo Verde Central African Republic Côte d'Ivoire Ethiopia Guinea-Bissau Malawi Mali Mauritius Uganda Zimbabwe	Sierra Leone
Less vulnerable	Lesotho Namibia Somalia	Burkina Faso Burundi Comoros Madagascar Rwanda Seychelles Tanzania	
More vulnerable		Benin Gambia, The Ghana Swaziland Togo	Angola Cameroon Chad Congo Republic Congo, Democratic Republic Equatorial Guinea Gabon Guinea Liberia Mauritania Nigeria South Sudan Sudan

Source: World Bank.

Note: The aggregate terms-of-trade effects of changes in commodity prices are used to define the low-, medium-, and high-vulnerability countries. We consider two scenarios—one where only oil prices change (oil TOT impact), and one where all commodity prices change. Countries are less vulnerable if their negative impact on terms of trade is smaller than 10 percent, while countries with more vulnerability are those with terms-of-trade deterioration that exceeded 10 percent.

QUALITY OF POLICIES: RECENT TRENDS

Many countries in Sub-Saharan Africa benefited from the commodity price super cycle. However, it is warranted to ask whether these countries improved the quality of their policies and institutions during the good times. It has often been argued that countries experiencing terms-of-trade windfalls would delay the institutional reforms or macroeconomic policy adjustments necessary to continue growing on a balanced path. Agency and common pool problems are typically argued as the culprits of delaying reforms (Alesina, Ardagna, and Trebbi 2006; Eslava 2011).

Figure 21 depicts the evolution of macroeconomic outcomes over the last 10 years for the three groups of SSA countries according to their terms-of-trade effects. Fiscal and current account deficits widened after 2011 for all groups of countries. For

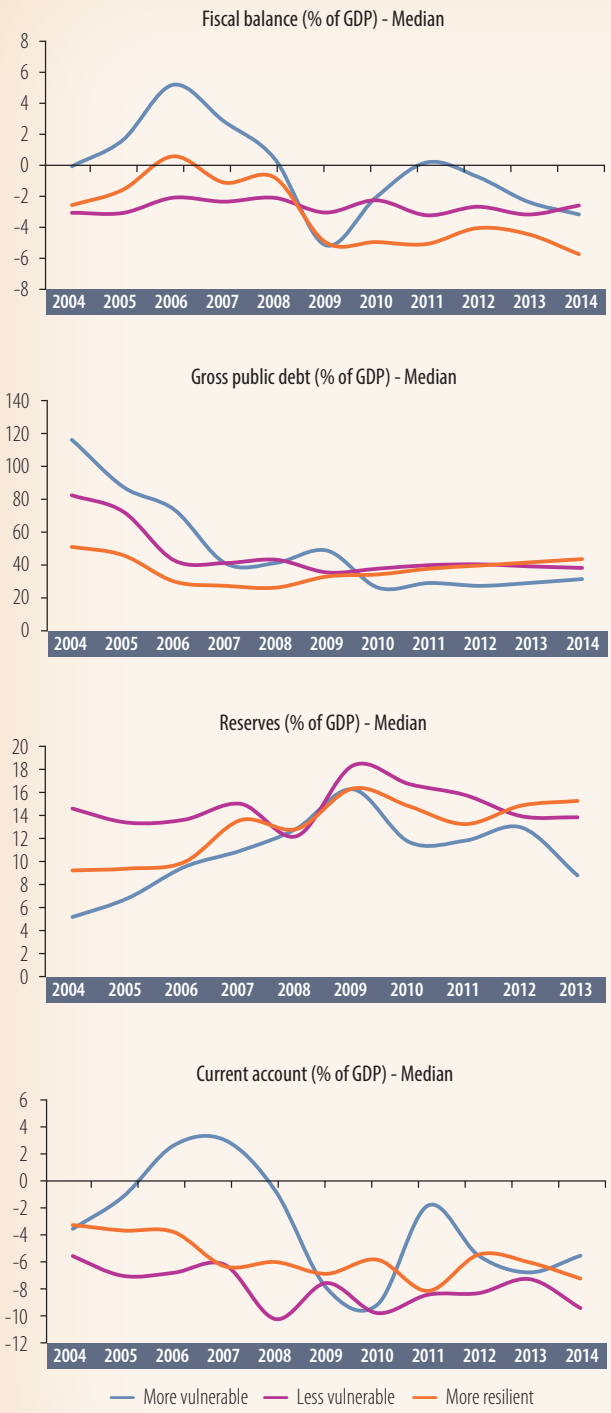
16 Terms-of-trade effects of Niger may be misrepresented due to the fact that uranium and thorium ore are not accounted for in the commodity export basket of the country.

countries that were more vulnerable to the weaker commodity prices, the current account deficit was nearly 8 percent of GDP, while the fiscal deficit exceeded 2 percent of GDP. There was also a slight increase in public debt since 2009; the gross public debt of more vulnerable countries increased by more than 5 percentage points of GDP, while that of the more resilient countries increased nearly 10 percentage points of GDP. In contrast, reserves were trending upward in the run-up to the crisis, and central banks started deploying reserves in 2009. The international reserves of the more vulnerable countries were reduced by 7 percentage points of GDP, while that of the less resilient dropped only 4.5 percentage points of GDP. The more resilient countries have deployed only 1 percent of GDP since 2009, and their level of reserves exceeds 15 percent of GDP. Finally, on average, the more resilient countries have more flexible exchange rate arrangements than the more vulnerable ones.

Figure 22 plots the current account and the overall fiscal balance for SSA countries for 2007 and 2013. These years preceded large adverse shocks; 2007 preceded the global financial crisis and a sharp drop in commodity prices as a result of lower global demand, and 2013 preceded the current plunge in oil prices and other commodities that was initiated in the second half of 2014. The two scatterplots show that current account and fiscal positions have moved in a southwest direction; that is, they have deteriorated. In 2007, six countries that are now labeled more vulnerable had both fiscal and current account surpluses. These countries were, of course, benefiting from higher growth supported by commodity prices. By 2013, the number of countries with

FIGURE 21: Macroeconomic management

Countries with greater terms-of-trade deterioration experienced more volatile macroeconomic performance

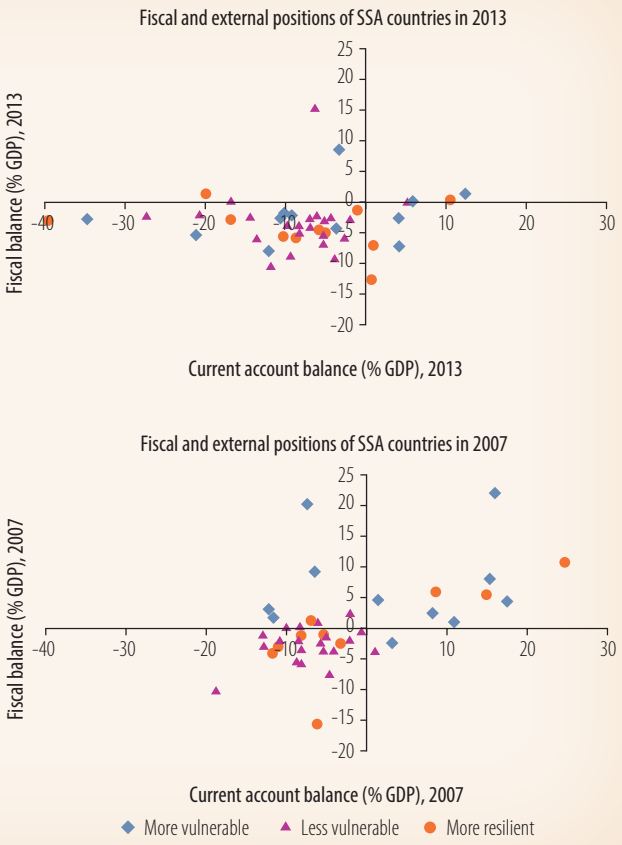


Sources: World Economic Outlook, IMF; Bleaney and Tian 2014.

Note: The countries more vulnerable to the decline in international commodity prices are those with terms-of-trade (TOT) deterioration that exceeds 10 percent. Countries with a deterioration lower than 10 percent are denoted as less vulnerable countries. Countries with TOT gains are labeled as more resilient countries.

Fiscal and external positions have worsened among African countries, especially among the terms-of-trade losers

FIGURE 22: Twin deficits



Source: World Economic Outlook, IMF.

both fiscal and current account surpluses was reduced to only two. Furthermore, 23 SSA countries had current account and fiscal deficits in 2007, and that number increased to 33 in 2013.

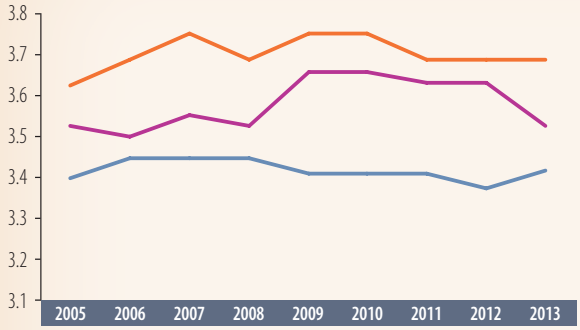
Figure 23 shows the evolution of the quality of policies and institutions in SSA countries since 2005, as measured by selected CPIA indicators (World Bank 2014).[17] CPIA scores show that the quality of macroeconomic management had deteriorated in the group of countries that have been affected the most by weaker fuel and nonfuel commodity prices during the postcrisis period.[18] There was also deterioration of the business environment in these countries, and the slight recovery experienced after 2010 was not sufficient to reach precrisis peak levels. Moreover, there is a considerable gap in terms of the quality of the business regulatory environment between the countries with low and high vulnerability. This gap is more pronounced when looking at the efficiency to mobilize revenues.

In an environment of lower commodity prices, governments that rely heavily on commodity revenues will have to find other ways to collect revenues in order to fund public investment programs and other spending. Reforms to elevate the efficiency of revenue mobilization are needed to keep the government providing public goods to the population. Finally, low scores are achieved in transparency, accountability, and corruption in the public sector for all groups of countries in SSA. However, there are still considerable differences between more vulnerable and resilient countries. This implies that, on average, the governments of net commodity exporters (especially fuel) have been less transparent and accountable than those of net aggregate commodity importers and some nonfuel net exporters. Prudent and transparent management of resource windfalls in booms and busts is of much relevance for resource-rich countries (see box 1).

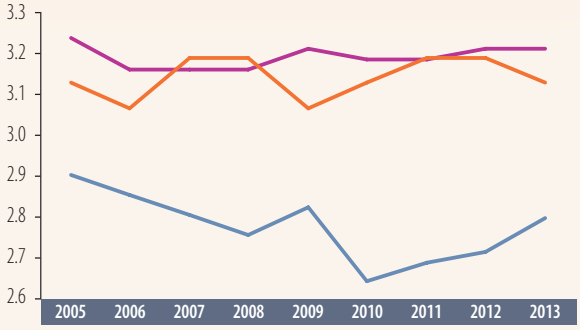
17 The CPIA Africa report can be downloaded at http://datatopics.worldbank.org/cpia/.CPIA scores are available only for IDA-eligible countries.
18 Scores are group averages. There is considerable variation in country-level scores within groups.

FIGURE 23: Quality of policies and institutions

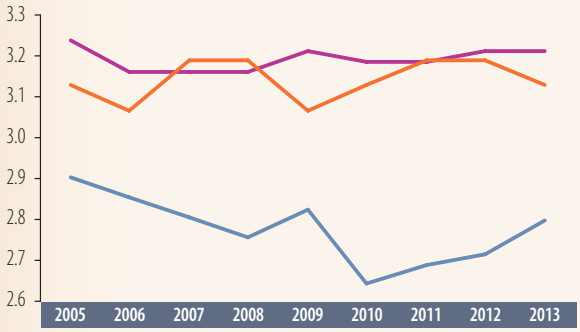
A. Macroeconomic management



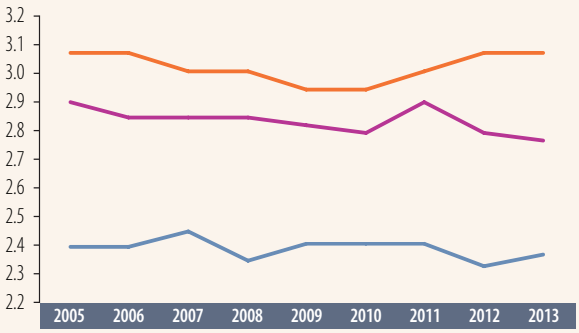
B. Business regulatory environment



C. Efficiency of revenue mobilization



D. Transparency, accountability, and corruption in the public sector



More vulnerable — Less vulnerable — More resilient

Countries with greater terms-of-trade deterioration have weak scores in economic policies and institutions

Sources: CPIA Africa Report 2014; World Bank.

Note: CPIA scores are for IDA-eligible countries only. The countries more vulnerable to the decline in international commodity prices are those with terms-of-trade (TOT) deterioration that exceeds 10 percent. Countries with a deterioration lower than 10 percent are denoted as less vulnerable countries. Countries with TOT gains are labeled as more resilient countries.

BOX 1: Save, invest, or consume: Budget rules under resource price uncertainty

How to manage resource windfalls is an important issue for resource-rich countries of Africa. A key question is whether windfalls should be saved—that is, the bird-in-hand rule, as in Chile and Norway, or spent on pressing social needs that are largely unmet because of capital scarcity. A recent paper (Devarajan et al. 2014) sheds some light on this issue by simulating the impact of resource windfalls on long-term growth and welfare, under resource price uncertainty.[a] The aim is to formulate simple budget rules to apply under conditions of volatile resource revenues.

Four strategies or budget rules for use of revenue windfalls are considered: (a) an all-consuming rule with the windfall transferred to households—think of this as a universal dividend; (b) an all-investing rule, with the windfall used for public investment (the assumption is that there is some inefficiency in investment, so that investment is only 50 percent effective in raising output); (c) an all-savings rule, or all-wise rule, with the windfall saved in a sovereign wealth fund and invested abroad; and (d) a balanced rule, with a fixed amount saved and the remainder invested (a 50–50 allocation between savings and investment is used in the analysis, but the appropriate allocation will depend on factors

BOX 1
Continued

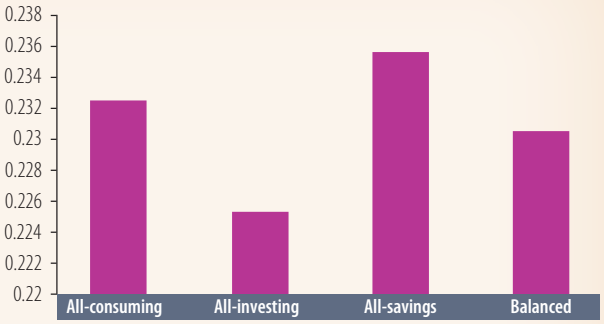
such as the elasticity of output to public capital, and interest rate premium on rising level of foreign debt). Two types of resource price shocks are examined: a temporary shock, both an increase and decrease in price; and persistent but uncertain shocks.

Three policy lessons are derived from the simulation results of the economic effects of price shocks under different budget rules.

First, when the temporary price shock is positive, the best strategy is to save the entire windfall abroad and transfer the interest earnings to citizens over time (figure B1.1). These transfers raise consumption, and the welfare gains from this strategy are higher than the all-consumption and all-investment strategies.

Second, with a negative price change, however, the all-saving strategy is no longer superior. Now, the best strategy is the all-investing one (figure B1.2). This cuts public investment instead of reducing transfers to households, which directly reduces consumption, or drawing down the sovereign wealth fund, which is equivalent to increasing debt.

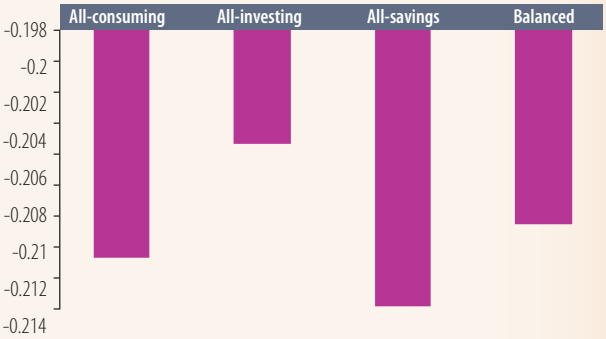
FIGURE B1.1: Welfare impact of a temporary positive one-standard-deviation change in the resource price



Source: Devarajan et al. 2014.

Note: The welfare measure is the percentage increase in the deterministic steady state consumption that gives the same level of utility brought about by the shock to resource price.

FIGURE B1.2: Welfare impact of a temporary negative one-standard-deviation change in the resource price



Source: Devarajan et al. 2014.

Note: The welfare measure is the percentage increase in the deterministic steady state consumption that gives the same level of utility brought about by the shock to resource price.

Third, when shocks occur persistently, the best strategy to consumption smoothing is the balanced rule. This rule provides insurance against both negative and positive shocks.

Note: a. The authors extend the dynamic 1-2-3 model by introducing uncertainty. The ensuing 1-2-3-4 model is of a small open economy with four economic agents (household, firm, government, and rest of the world), two types of capital (public and private), and four goods (a domestic good, a traditional export good, a resource export good, and an import good). A windfall is defined as the difference between the current and steady state level of royalties from the resource export.

CONCLUSION

Despite 20 years of sustained growth, most African countries have seen little diversification of their economic structure and composition of trade. In short, the region continues to be a net exporter of primary commodities. Oil is, by far, the most important commodity traded in the region. Among oil exporters, 96 percent of total exports have come from the three biggest exports of each country, which represent nearly 30 percent of their GDP. This dependence exposes these countries to swings in oil prices. Unsurprisingly, the pronounced drop in oil prices since June 2014 has translated into a sharp initial terms-of-trade deterioration for this group of countries, and for the region as a whole. Although net oil importers are set to gain from sharply lower global prices of energy commodities, the gains have been muted, in some instances, by price declines in these countries' commodity exports. This is especially so for some exporters of metals and minerals. In the current commodity price cycle (2000-15), nonfuel commodity prices are moving more closely with those of fuel prices. The greater synchronization of price movements heightens exposure to negative commodity price shocks.

Management of resource windfalls takes on added importance during downswings in commodity prices. As countries grapple with issues of whether windfalls should be saved or spent, attention to the quality and efficiency of public spending is needed. A case in point is phasing out inefficient and regressive gasoline and other oil-related subsidies and replacing these with better-targeted social protection interventions. Priority should also be given to implementing appropriate social protection policies to cushion the effects on the poor in countries that need to tighten fiscal balances (and other macroeconomic adjustments).

As tailwinds have transformed into headwinds, there is heightened focus on structural transformation and sustainability of growth. Sustained development requires inclusive growth. This must start with agriculture, where more than 80 percent of the poor are still employed (Africa's Pulse vol. 10). Despite substantial policy commitments in the 2003 Maputo Declaration (and the 2014 Malabo declaration), productivity growth in African agriculture has remained disappointing. Attention is urgently needed to the question of the relative effectiveness of different kinds of policy interventions in agriculture. Poverty reduction and income growth also arise through economic diversification, and job creation in the vastly heterogeneous services and manufacturing sectors. Sustainably breaking into manufacturing requires continued progress in a number of "structural" issues, such as access to reliable and affordable power, lower transport costs and better logistics, a more skilled labor force, and lower unit labor costs in manufacturing.

Reducing conflict risks and promoting stability must be high on the policy agenda. It requires acting on the drivers of fragility, such as investment in lagging regions, reform and improvement of the security sector, greater openness regarding public matters, and broadening the scope of governance in the extractive sector to incorporate issues such as political bargaining at the local level, subnational dynamics, and the negative local-level externalities that this sector can impose.

Priority must also be on strengthening health systems. This will not only help avoid the next infectious disease outbreak, but also improve the quality of life, and consequently the economic prosperity of all Africans.

Appendix I

Classification of Sub-Saharan African (SSA) countries

I. Classification of SSA countries by the nature of their commodity exports[a]

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

II. Classification of SSA countries by the impact of declining commodity prices on the aggregate terms of trade [b]

More vulnerable	Less vulnerable		More resilient
Angola	Benin	Madagascar	Botswana
Cameroon	Burkina Faso	Malawi	Eritrea
Chad	Burundi	Mali	Kenya
Congo, Democratic Republic	Cabo Verde	Mauritius	Lesotho
Congo, Republic	Central African Republic	Rwanda	Mozambique
Equatorial Guinea	Comoros	Seychelles	Namibia
Gabon	Côte d'Ivoire	Swaziland	Niger
Guinea	Ethiopia	Tanzania	São Tomé and Príncipe
Liberia	Gambia, The	Togo	Senegal
Mauritania	Ghana	Uganda	Somalia
Nigeria	Guinea-Bissau	Zimbabwe	South Africa
Sierra Leone			Zambia
South Sudan			
Sudan			

Source: World Bank.

a. Countries are classified as exporters of a specific commodity group if the share of exports of said category is above 25 percent.

b. The aggregate terms-of-trade effects are computed as the sum of the price shock of commodity j times the difference of their export and import shares relative to total export and import merchandise. Price shocks were computed as the percentage variation of the predicted 2015 price of commodity j relative to the actual 2014 price. The more vulnerable countries to the decline in international commodity prices are those with terms of trade (TOT) deterioration that exceeds 10 percent. Countries with a deterioration lower than 10 percent are denoted as less vulnerable countries. Finally, countries with TOT gains are labeled as more resilient.

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