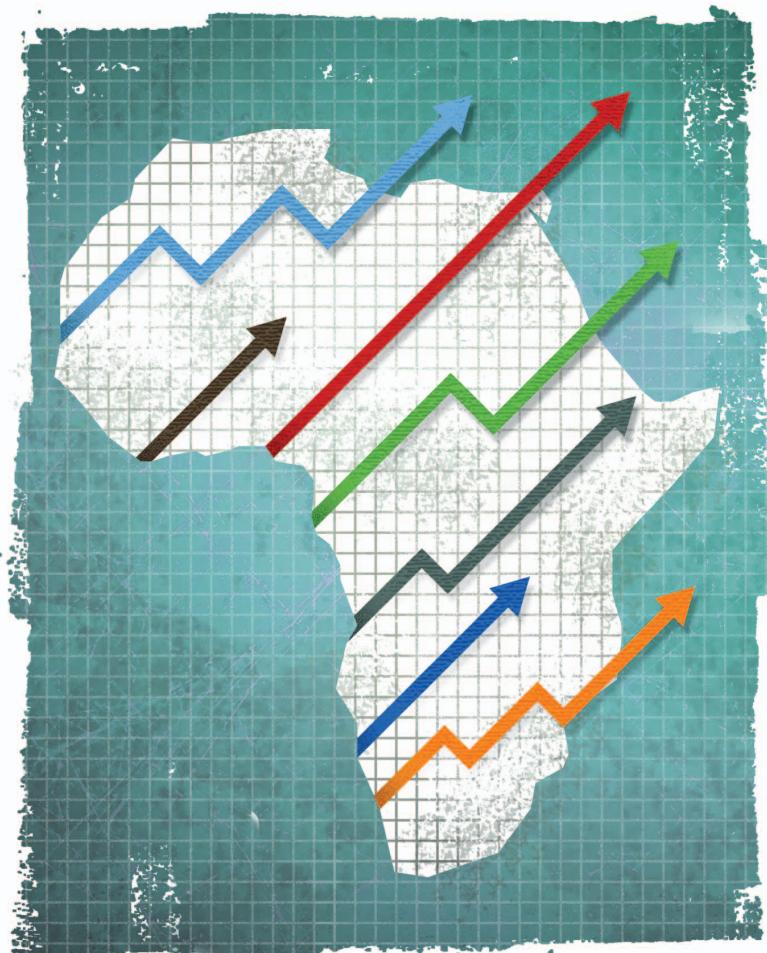


# Africa's Pulse

*An analysis of issues shaping Africa's economic future*



- ▶ Growth remains stable in Sub-Saharan Africa. Some countries are seeing a slowdown, but the region's economic prospects remain broadly favorable
- ▶ The Ebola outbreak is exacting a heavy human and economic toll on affected countries and, if not rapidly contained, the risk of wider contagion grows
- ▶ In Sub-Saharan Africa, growth in agriculture and services is more effective at reducing poverty than growth in industry

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## Summary

- ▶ Global growth has been weak, with divergent trends in high-income countries, and below long-run growth levels in developing countries.
- ▶ Sub-Saharan Africa is growing at a moderate pace, reflecting in part a slowdown in some of the region's large economies. Public infrastructure investment, a rebound in agriculture, and a buoyant services sector are key drivers of growth in the region.
- ▶ Prospects for the region remain favorable, despite headwinds. External risks of higher global financial market volatility and lower growth in emerging market economies weigh on the downside. In several Sub-Saharan African countries, large budgetary imbalances are a source of vulnerability to exogenous shocks and underscore the need for rebuilding fiscal buffers in these countries.
- ▶ A key risk on the domestic side is a contagion of the Ebola outbreak. Without a scale-up of effective interventions, growth would slow markedly not only in the core countries (Guinea, Liberia, and Sierra Leone), but also in the subregion as transportation, cross-border trade, and supply chains are severely disrupted.
- ▶ Sub-Saharan Africa is lagging sharply in achieving the Millennium Development Goals (MDGs); for example, the region has achieved only a third of the poverty target of halving the proportion of people living under \$1.25 a day, while globally this target has already been met. In addition, there is considerable variation across countries in how much progress is being made on the MDGs.
- ▶ The region's pattern of growth and economic transformation has implications for poverty reduction. In Sub-Saharan Africa, growth in agriculture and services has been more effective at reducing poverty than growth in industry.
- ▶ Structural transformation has a role to play in accelerating poverty reduction in Sub-Saharan Africa. Increasing agricultural productivity will be critical to fostering structural transformation. Boosting rural income diversification can facilitate this transformation, as well. Investments in rural public goods and services (for example, education, health, rural roads, electricity and ICT), including in small towns, will be conducive to lifting productivity in the rural economy.
- ▶ Although Sub-Saharan Africa's pattern of growth has largely bypassed manufacturing, growing the region's manufacturing base, especially by improving its fundamentals—lower transport cost, cheaper and more reliable power, and a more educated labor force—will benefit all sectors.

## Section 1: Recent Developments and Trends

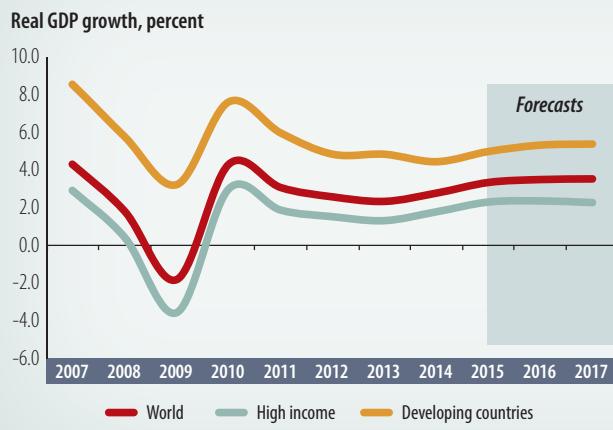
- ▶ Following weaker-than-expected growth in the first half of 2014, a modest pickup in global growth is expected in the second half of the year, lifting growth to around 2.6 percent in 2014, to 3.2 percent in 2015, and to an average yearly rate of 3.3 percent during 2016–17.
- ▶ Despite headwinds, medium-term growth prospects for Sub-Saharan Africa remain favorable. Regional gross domestic product (GDP) growth is projected to strengthen to an annual rate of 5.2 percent during 2015–16 from 4.6 percent in 2014, and to rise to 5.3 percent in 2017.

### GLOBAL ECONOMY

Global growth has been weaker than expected, amid mixed performance in a number of major countries (figure 1). In the United States, the Euro Area, and Japan, it averaged 0.6 percent in the first half of 2014, but growth across these countries has diverged considerably. Growth in the United States has been gathering momentum, but the Euro Area and Japan appear to be stagnating. Supported by rising employment and investment growth, a still accommodative monetary policy, and easing fiscal consolidation, U.S. growth recovered strongly in the second quarter from a sharp contraction in the first quarter. The recovery in the U.S. economy is expected to gather pace in the second half of 2014 as better employment prospects support real income growth and confidence, fiscal consolidation pressures ease, and investment rises in line with strong profits and favorable financing conditions. GDP growth for 2014 is projected at about 2.1 percent, rising above trend in 2015 to around 3.0 percent.

Meanwhile, growth appears to have stagnated in the Euro Area and Japan. With the strength of the recovery continuing to be impaired by weak domestic demand, ongoing balance sheet adjustments, and a fragmented banking sector, Euro Area GDP was flat in the second quarter, following a small uptick in the first quarter. A slow improvement in credit and labor market conditions should provide some momentum ahead, but investment prospects remain subdued and precautionary savings still high. Exports should gradually pick up, supported by strengthening demand from the United States and a weakening euro. Growth is expected to resume in the second half of the year, with overall growth for 2014 projected to reach about 1.0 percent. In Japan, a sales tax hike in April caused a more significant contraction in activity than initially expected, while exports failed to pick up despite a weak yen. Monetary policy accommodation and reform commitments will provide ongoing support, but fiscal consolidation is expected to keep domestic demand subdued throughout 2015, with exports recovering only slowly. Real GDP growth is projected to average 1.0 percent in 2014, down from 1.5 percent in 2013.

FIGURE 1: Global GDP growth



A modest pickup in global growth is expected in the second half of 2014, lifting growth to 2.6 percent for the year

In developing countries, growth is expected to remain below long-run average levels in most regions. This is partly due to weak external demand and withdrawal of fiscal stimulus, especially in major emerging market countries. In China, growth is expected to slow from 7.7 percent in 2013 to 7.4 in 2014 and to an average of 7.1 percent during 2015–17, as it makes the transition away from an investment-led growth strategy toward greater emphasis on domestic consumption. However, developing countries are expected to benefit from the projected pickup of economic activity in high-income countries in the second half of 2014, which is expected to lift trade growth modestly. This should provide some impetus to developing countries, particularly those for which the United States is a major trading partner. In addition, still accommodative U.S. monetary policy and the European Central Bank's announced policy measures to ease credit are supporting capital flows to most developing regions.

Overall, a modest pickup in global growth is expected in the second half of 2014 to raise annual growth to around 2.6 percent for the year. Growth is expected to strengthen to 3.2 percent in 2015 and to an average yearly rate of 3.3 percent during 2016–17. High-income country growth is expected to come in at 1.8 percent in 2014, up from 1.3 percent in 2013, and to average 2.3 percent a year during 2015–17. Developing-country growth is expected to edge lower to 4.4 percent in 2014 before rebounding to 5 percent in 2015, and to average 5.4 a year during 2015–17.

Monetary policy tightening in the United States, deflation in the Euro Area, and geopolitical tensions in a number of regions present risks to the global outlook. Monetary policy in high-income countries is expected to diverge. The U.S. Federal Reserve is projected to start raising policy rates in mid-2015, which carries the risk of financial market volatility. In contrast, in the Euro Area, where inflation continues to drift downward, deflation risks are increasing, and the European Central Bank has announced additional easing measures to begin in October. In Japan, where inflation expectations are still weakly anchored, loose monetary policy is projected to continue. Developing countries and emerging market economies are especially vulnerable to bouts of financial market disruptions and volatility as a result of changes in monetary policy in high-income countries or weakening investor sentiment if geopolitical tensions (for example, in Russia or Iraq) or health concerns (for example, from the Ebola virus in West Africa) escalate. Such disruptions can trigger a sharp withdrawal of funds from these countries and place strong downside pressure on domestic currencies.

## RECENT ECONOMIC DEVELOPMENTS IN SUB-SAHARAN AFRICA

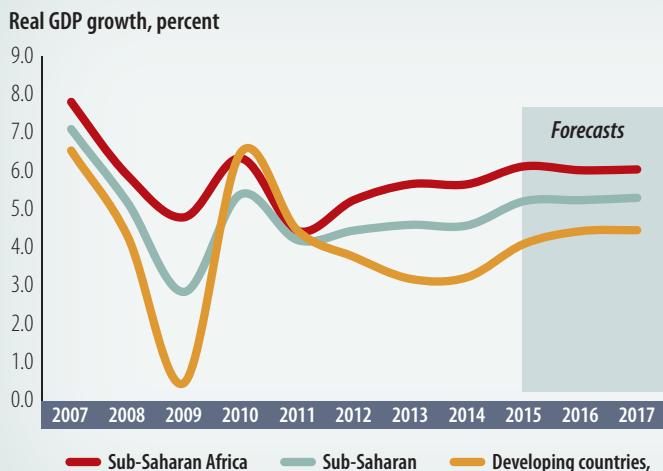
Growth has moderated in Sub-Saharan Africa, reflecting in part a slowdown in some of the region's largest economies. Growth slowed notably in South Africa, the region's second-largest economy, due to structural bottlenecks, labor unrest and low investor confidence. The South African economy expanded a modest 1.0 percent year-on-year in the second quarter of 2014, its lowest growth rate since the 2009 financial crisis, slowing from an already weak 1.6 percent expansion in the first quarter as strikes in the platinum sector dragged mining and manufacturing output down. In Angola, oil production declined with mature oil fields coming off stream, causing a marked deceleration in growth. By contrast, economic activity strengthened in Nigeria, the region's largest economy. GDP advanced 6.5 percent year-on-year in the second quarter, up from a 6.2 percent expansion in the first quarter. Growth also remained robust in many of the region's low-income countries including, notably, Cote d'Ivoire, Ethiopia, Mozambique, and Tanzania. However, the Ebola outbreak severely disrupted economic activity in Guinea, Liberia, and Sierra Leone, causing growth to slow in these countries.

Overall, GDP growth in the region is projected to be 4.6 percent in 2014, the same as in 2013 (figure 2). Excluding South Africa, average GDP growth for the rest of the region is expected to hold steady at 5.6 percent, a faster pace than other developing regions excluding China. GDP per capita growth is expected to hold steady at 2.1 percent in 2014.

Public infrastructure investment, a rebound in agriculture, and a buoyant services sector were key drivers of growth in the region. Substantial infrastructure investment, including in ports, electricity capacity, and transportation continued to be undertaken across the region, helping to sustain high growth rates in many countries. In Cote d'Ivoire, a strong increase in cocoa production and rice output boosted agriculture growth, and Ethiopia's robust growth continued to be supported by the agriculture sector and public investment, particularly in infrastructure. Services sector expansion, led by transport, telecommunications, financial services, and tourism, is spearheading overall economic growth in countries such as Nigeria, Tanzania, and Uganda. However, the region is seeing a slowdown in foreign direct investment (FDI) flows, an important source of financing of fixed capital formation: FDI is expected to be around \$29 billion in 2014, down from nearly \$32 billion in 2013. The slowdown reflects subdued global demand and weaker commodity prices, especially of metals. Overall, net capital inflows to the region are projected to amount to 4.3 percent of regional GDP in 2014 compared with 5.1 percent in 2013 as FDI and portfolio investment flows register significant declines.

The fiscal policy stance remained expansionary across the region during 2014, resulting in large budgetary imbalances. The fiscal deficit for the region as a whole is projected to widen to 3.6 percent of GDP from 3.1 percent of GDP in 2013, with significant variations among countries. The fiscal position of many countries deteriorated due to increasing current and capital expenditures, but also to declining revenues, notably among oil-exporting countries facing both declining production and lower oil prices. In Angola, for example, the overall fiscal balance is projected to deteriorate sharply from a surplus of 0.3 percent of GDP in 2013 to a deficit of 4.1 percent of GDP in 2014, with declining oil revenues and an increase in the wage bill as the main factors behind the deficit. At the same time, several countries took measures to control expenditures that are helping to stabilize or reduce their fiscal deficits. Nigeria's overall deficit is projected to narrow to 2.9 percent of GDP in 2014, driven in part by higher oil and gas revenues, but also by expenditure restraint, including a decline in subsidies as a percent of GDP. In Senegal, the overall fiscal deficit is projected to decline to 5.1 percent of GDP in 2014 from 5.5 percent in 2013, mainly on the back of expenditure restraint as the authorities implement measures aimed at streamlining less productive spending, including on wages and salaries and goods and services.

FIGURE 2: GDP growth in Sub-Saharan Africa



Source: World Bank.

GDP growth in the region is projected to be 4.6 percent in 2014, strengthening to an average annual pace of 5.2 percent during 2015-16

Notwithstanding ongoing efforts to control spending, strengthen revenue administration, and undertake tax policy reforms, the widening fiscal deficit for the region as a whole suggests uneven progress in rebuilding fiscal space, and underscores the need for countries in the region to take advantage of the benign global financial conditions to rebuild depleted fiscal buffers. This will entail curbing current spending, which has contributed to the expansionary fiscal stance, and focusing on quality and efficiency of investment spending. Fiscal consolidation measures would help contain the rising primary fiscal deficits, which were a major factor behind the buildup in debt-to-GDP ratios observed in 2013, notably among frontier market countries.

Inflation edged up in the region, but was not a major concern in most countries (figure 3). Overall, inflation rose from 6.2 percent (y/y) in the beginning of 2014 to 6.9 percent (y/y) in July. The uptick in inflation was most visible in the frontier market countries that also sustained large currency depreciations—notably Ghana, where inflation was in double digits. In some countries, inflation remained above the upper limit of the central bank target range for 2014, prompting a tightening of monetary policy (figure 4). In South

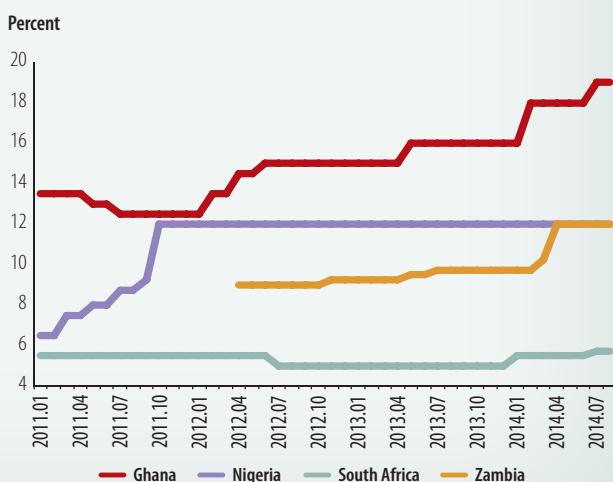
Africa, the reserve bank hiked the repo rate by an additional 25 basis points to 5.75 percent in July following a 50-basis-point increase in January; and in Ghana, the central bank raised the monetary policy rate by 100 basis points to 19.0 percent in July. Reduced real disposable income and higher borrowing costs weighed on investor sentiment and kept household consumption subdued, putting a brake on economic activity in these countries.

**FIGURE 3: Inflation trends**



Source: World Bank.

**FIGURE 4: Policy interest rates**



Source: World Bank.

Inflation inched higher across the region, but is not a major concern for a majority of African countries

Inflation exceeded central bank targets in some countries, prompting an increase in policy interest rates

Current account deficits remained elevated across the region, reflecting the expansionary fiscal policy stance, declining commodity prices, and rising investment-related imports. The current account deficit for the region as a whole is expected to widen from an estimated 2.4 percent of GDP to 2.7 percent of GDP in 2014. Commodity prices weakened further in 2014, with oil marginally down from a year earlier, and agriculture and metals down 2.5 percent and 4 percent, respectively, reflecting increased supply and weakening demand, all of which is expected to weigh on exports, especially from oil and metal-producing countries (figure 5). In contrast, spurred by infrastructure investment projects and

private consumption growth, the demand for imports has remained strong across the region. In this environment, reducing the twin fiscal and current account deficits remains a major policy challenge for several of the region's frontier market countries, such as Ghana and Kenya, and for South Africa, which is exposed to capital outflow volatility due to its heavy reliance on portfolio capital flows (figure 6).

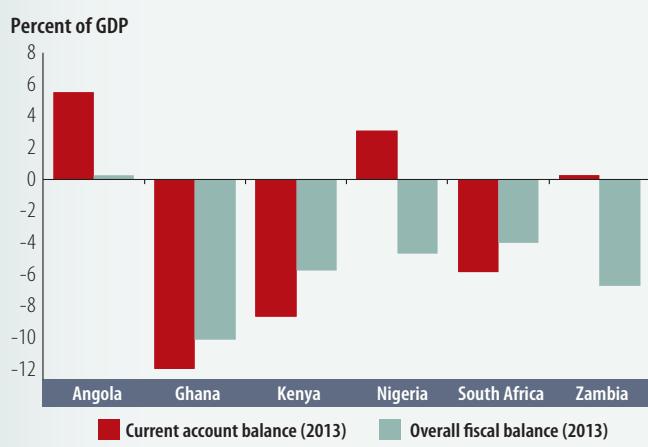
In a context of benign global financial conditions, most of these countries have, however, been able to tap international financial markets again. Renewed investor interest in the region, following a sharp contraction in the first quarter of 2014, enabled a strong increase in Eurobond sovereign issuances, including a maiden issuance by Kenya. Year-to-date, total issuance for the region including South Africa, amounted to US\$6.9 billion, exceeding the US\$6.5 billion issued in 2013 (figure 7). Several countries made a successful return to the international bond markets. Zambia's \$1.0 billion sale of 10-year dollar denominated government bonds in April 2014 was followed by those of the governments of Cote d'Ivoire (\$750 million) and Senegal (\$500 million) in July, and Ghana (\$1.0 billion) in September. Many of the issuances were highly oversubscribed, with orders reaching \$8 billion in the case of Kenya and nearly \$5 billion for Cote d'Ivoire. Moreover, sovereign spreads fell across the board, although they remain relatively high for Ghana and Zambia, suggesting that investors were differentiating between countries on the

FIGURE 5: Global commodity prices



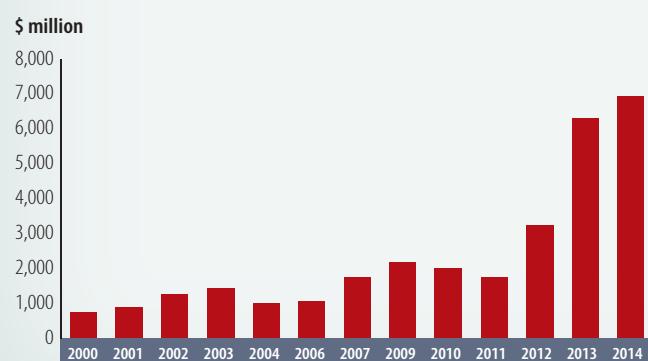
Commodity prices weakened further in 2014, with agriculture and metals down 2.5 percent and 4 percent, respectively

FIGURE 6: Current account and fiscal balances in selected countries



Elevated fiscal and current account deficits leave countries vulnerable to shifts in external conditions

FIGURE 7: Sovereign bond issuance by Sub-Saharan Africa, year-to-date



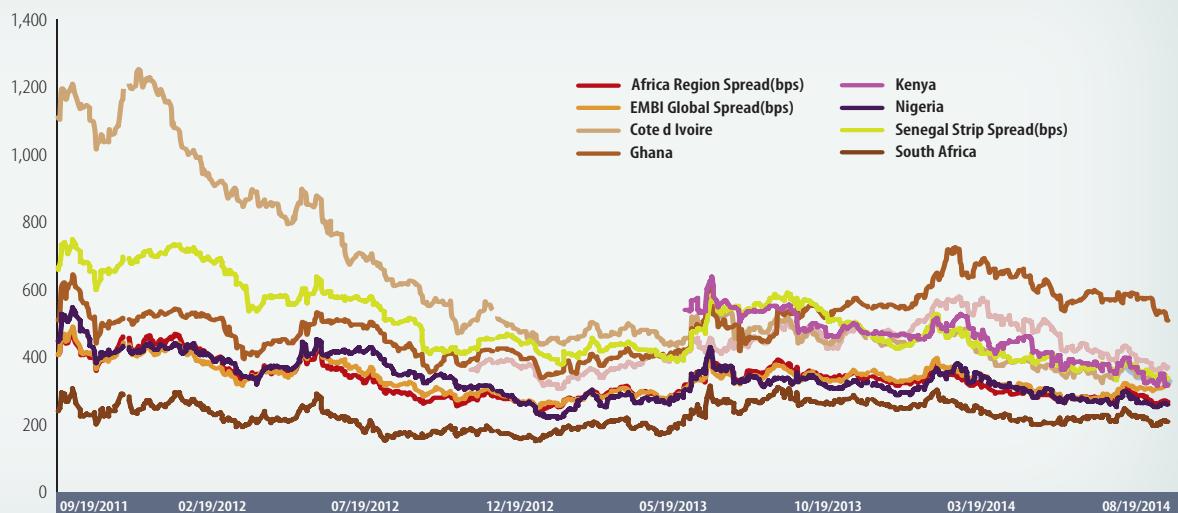
At \$6.9 billion to date, sovereign bond issuances have already surpassed last year's

basis of macroeconomic imbalances and the pace of reforms (figure 8). This highlights some of the risks inherent in borrowing in global financial markets. Some of the region's countries are turning to the sukuk market as a source of long-term financing for infrastructure needs (box 1).

Sovereign bond spreads fell across the board, but they remain relatively high in some countries

FIGURE 8: Sovereign bond spreads

Basis points



Source: Bloomberg.

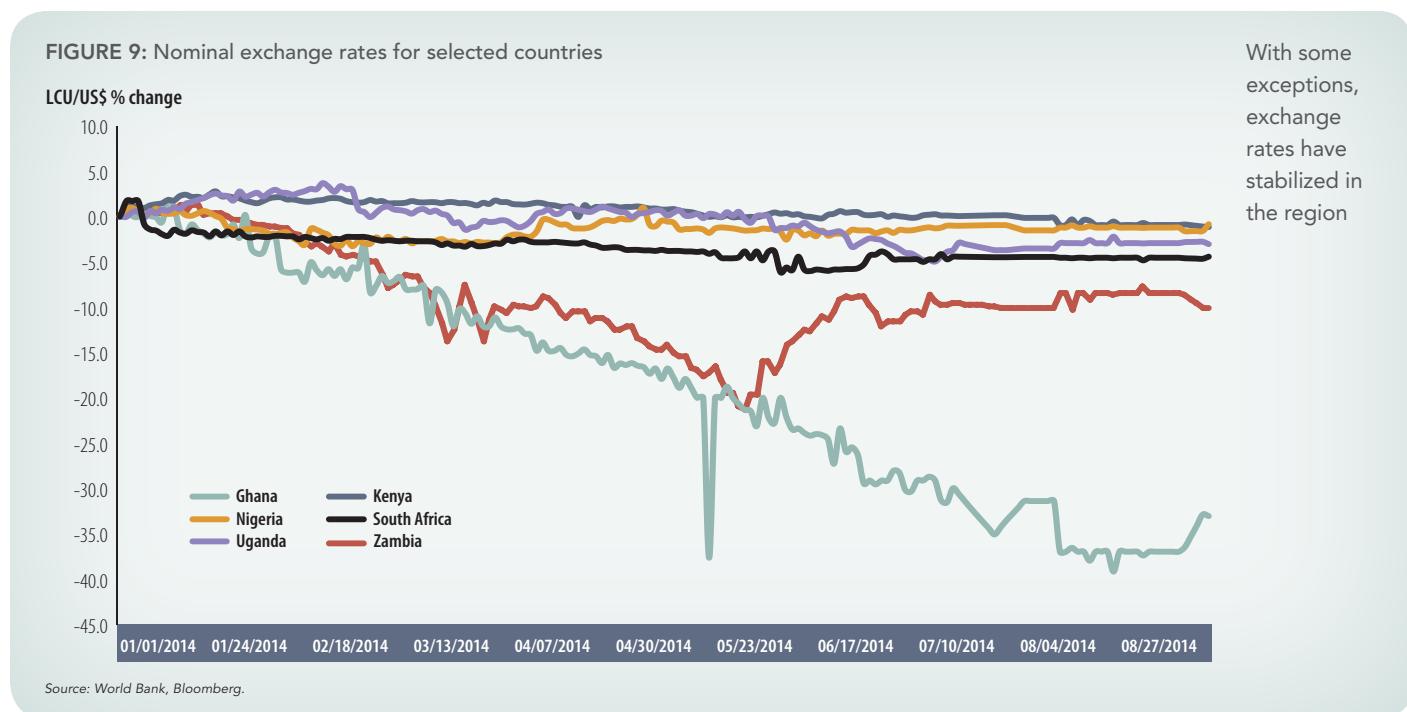
**BOX 1:**  
Sub-Saharan African countries are tapping the sukuk market

Sub-Saharan African countries are turning to sukuk bonds for financing infrastructure. A sukuk (Islamic bond) is a financial instrument representing a risk-sharing way to provide capital, typically to governments. Through this mechanism, sukuk (bond) holders own shares of assets relating to specific projects or investments for which the capital was provided. Sukuk holders are entitled to revenue generated from these assets. Global sukuk issuance was \$120 billion in 2013, down 21 percent from 2012, yet still over five times the 2008 total (Gelbard et al. 2014). Most sukuk activity is concentrated in the Gulf Cooperation Council countries and Malaysia, but African countries are beginning to access this source of funds.

Earlier this year, Senegal issued the continent's first major sovereign sukuk at 100 billion Senegal francs (US\$208 million). The nation's sukuk will be used to invest in infrastructure for improved water and power distribution. While Senegal might have issued Sub-Saharan Africa's largest sukuk, the popularity of Islamic financing as a source for government debt has increased across the region. In July 2012, Sudan raised 955 million Sudanese pounds (US\$165 million) through this bond instrument, and Gambia routinely sells this financial instrument. This September, South Africa issued a US\$500 million sukuk. The nation's five-year sukuk was priced at 3.9 percent. Other countries in the region have expressed an interest in issuing this financial instrument, as well.

Through sukuk, African countries can diversify their investor base, while deepening local capital markets. Since funds from sukuk can be used only to finance projects reflecting real economic activity, most such instruments are used to fund infrastructure projects. Thus, sukuk provides an important mechanism for long-term financing of large public projects.

The region's main currencies have generally stabilized (figure 9), following significant volatility early in the year, which could help contain inflationary pressures going forward. The Zambian kwacha continued to slide in the first half of the year, weakening by over 20 percent, before rebounding. Concerns about loose fiscal stance and low external reserves led to bouts of renewed pressure on the Ghanaian cedi, which depreciated by more than 40 percent against the U.S. dollar in the first nine months of the year.



## ECONOMIC OUTLOOK FOR SUB-SAHARAN AFRICA

Despite headwinds, medium-term growth prospects for Sub-Saharan Africa remain favorable. Regional GDP growth is projected to strengthen to an average annual pace of 5.2 percent during 2015–16, from 4.6 percent in 2014, and to rise to 5.3 percent in 2017. Under this baseline scenario, GDP per capita will rise steadily from an estimated 2.1 percent in 2014 to 2.6 percent in 2015, reaching 2.8 percent in 2017.

Public investment in infrastructure, increased agricultural production, and a buoyant services sector are expected to continue to support growth in the region. The growth pickup is expected to occur in a context of reduced support from commodity prices and net FDI flows as global demand remains subdued. Overall, Sub-Saharan Africa is forecast to remain one of the fastest-growing regions. Private consumption in the region is expected to remain strong during 2015–17. Reduced imported inflation, aided by a benign global inflationary environment and stable exchange rates, and adequate local harvests are expected to help contain inflationary pressures in most countries, which should allow for some gains in real disposable incomes. However, currency-induced price pressures, which could weigh on consumer sentiment and slow private consumption growth, remain a concern for countries with a heavy reliance on portfolio flows, including Ghana and South Africa.

Government consumption is projected to grow at a moderate pace as governments across the region strive to restrain current expenditures, allowing for some fiscal consolidation to take place. The

expansionary fiscal policy stance that has led to budgetary imbalances has been found to be linked more systematically to current expenditures than to capital spending, with insignificant correlation to capital expenditures. Ongoing efforts to contain wages and salaries and streamline less productive expenditures on goods and services are therefore important consolidation steps. In this context, steps by Ghana and Zambia to control spending will be key to correcting their large fiscal and external imbalances.

Net exports are again projected to make a marginal contribution to GDP growth in the region over the forecast horizon. The contributions of net exports will be constrained by lower commodity prices, which could be exacerbated by low output in countries such as Angola, where production is stagnating. In metal-exporting countries, increased output would mitigate the weakness of metals prices. On the import side, the demand for capital goods is projected to remain strong, as governments continue to frontload infrastructure investments and private consumption remains strong. Reflecting these trends and the weakening of commodity prices, the current account deficit in the region is projected to widen from an estimated 2.4 percent of GDP in 2013 to an average of 3.0 percent of GDP in 2015 and 2016.

At the country level, growth is expected to remain robust in Nigeria, supported by the continued expansion of nonoil sectors, particularly the services sector, which now accounts for more than 50 percent of GDP. South Africa is expected to experience steady but slow economic growth as gradually improving net exports help mitigate the drag from monetary and fiscal policy tightening; and infrastructure bottlenecks, especially in the electricity sector, are progressively alleviated in the coming years and help to lift investment sentiment. Among other middle-income countries, high interest rates and rising inflation due to currency depreciation are expected to slow economic activity, including notably in Ghana.

In low-income countries, political stability and continued investment in infrastructure should keep growth rates high. The Ebola outbreak is expected to severely disrupt activity in key economic sectors in Guinea, Liberia, and Sierra Leone and to slow growth in these countries in 2014. Economic spillovers are, however, expected to be modest and contained to Ghana and Nigeria, the main transportation hubs in the West Africa subregion, provided further contagion can be controlled rapidly. The economic dislocation will be more adverse under a pessimistic scenario of containment.

## RISKS TO THE ECONOMIC OUTLOOK

The outlook is subject to significant downside risks stemming from both domestic and external factors. Key domestic risks include a more widespread extension of the Ebola outbreak, a deterioration of the security situation in a number of countries, and risks associated with expansionary fiscal policy and currency weaknesses. A sudden increase in volatility in financial markets and lower growth in emerging markets are among the major external risks to the region's outlook.

### *Domestic risks*

*Widespread contagion of the Ebola outbreak:* Without a scale-up of effective interventions, the virus could spread more rapidly than assumed in the baseline, and become harder to control as it reaches large urban centers and new countries with a weak public health infrastructure and low institutional capacity to deal with the outbreak. In addition to the loss of lives, affected countries would suffer a sharper decline in output, with growth slowing markedly not only in the core countries but also in the subregion as transportation, cross-border trade, and supply chains are severely disrupted. See box 2.

The 2014 outbreak of Ebola in West Africa is exacting a heavy humanitarian toll. Beyond the tragic loss in human lives and suffering, the Ebola epidemic is already having a measurable economic impact in terms of foregone output, higher fiscal deficits, rising prices, and lower real household incomes and greater poverty. These economic impacts include the costs of health care and foregone productivity of those directly affected but, more important, they arise from the aversion behavior of others in response to the disease.

**BOX 2:**  
The economic  
impact of the  
Ebola epidemic<sup>a</sup>

### ***Channels of impact***

The impact of the Ebola epidemic on economic well-being operates through two distinct channels. First are the direct and indirect effects of the sickness and mortality themselves, which consume health care resources and subtract people either temporarily or permanently from the labor supply. Second are the behavioral effects resulting from peoples' fear of contagion, which in turn leads to a fear of association with others and reduces labor force participation, closes places of employment, disrupts transportation, and motivates some government and private decision makers to close seaports and airports.

### ***Short-term impact on economic activities***

Since the escalation of the Ebola outbreak in July 2014, there has been a sharp disruption of economic activities across sectors in Guinea, Liberia, and Sierra Leone. The largest economic effects of the crisis are those resulting from changes in behavior (driven by fear), which have resulted in generally lower demands for goods and services and consequently lower domestic income and employment.

The services sector has been hit particularly hard across all three countries. In Liberia, where services comprise approximately half of the economy and employ nearly 45 percent of the labor force, wholesale and retail traders have reported a 50 to 75 percent drop in turnover relative to the normal amount for the trading period. The domestic transport sector has been severely affected, with gasoline and diesel sales down by 21 and 35 percent, respectively. Average hotel occupancy across the three countries has fallen from 60 to 80 percent year-round before the crisis to 13 to 40 percent, resulting in many layoffs of hotel workers. In Sierra Leone, a sharp reduction in international flights servicing the country has increased its isolation from global markets.

Significant impacts have also been felt in agriculture, which is the mainstay of much of the population in these countries. In Guinea, which is among the poorest countries in West Africa, agriculture in Ebola-affected areas has been hit by an exodus of people from these zones, affecting the production of key export commodities, such as coffee, cocoa, and palm oil. Although robust price data are not yet available, reports indicate rice price spikes of up to 30 percent in Ebola-affected areas in Sierra Leone. A Food and Agriculture Organization rapid assessment in the district of Kailahun, Sierra Leone, indicates that at least 40 percent of farmers have either abandoned their farms and moved to new, safer locations or have died. In the most productive agroecological areas, about 90 percent of the plots have not been cultivated. This is due in part to current restrictions on movement, and to an expressed fear by farmers of meeting or even sharing working tools.

Mining has not yet been severely affected by the Ebola outbreak in West Africa, and companies have indicated they intend to maintain their originally planned production levels to the extent possible. Nonetheless, in Liberia, investments to expand capacity to 15 million tons per year have been put on hold, and one major mining company closed its operation in August, contributing to an expected contraction in the mining sector of 1.3 percent in 2013 compared with an initial projection for growth above 4 percent.

Preliminary estimates indicate that GDP growth in 2014 could be sharply lower in Guinea (from 4.5 percent to 2.4 percent) and Liberia (from 5.9 percent to 2.5 percent), with a loss of over 3 percentage points for Sierra Leone (from 11.3 percent to 8.0 percent). In terms of foregone output, this amounts to a total of US\$359 million across the three countries, already a major loss. The fiscal impact of the crisis has also been enormous, emanating from the combination of revenue shortfalls from reduced economic activities and increased expenditures, particularly for health and social protection. Financing gaps in 2014 for the three core countries range from US\$80 million to US\$120 million, totaling over US\$290 million. Slow containment and exponential growth of the disease will lead to even greater financing gaps in 2015.

### ***Medium-term impacts***

In light of the considerable uncertainty about the future trajectory of the epidemic, two epidemiological scenarios were used to estimate the medium-term economic impact, extending to the end of 2015. One scenario corresponds to rapid containment within the three most severely affected countries, while a second scenario corresponds to slower containment in the core three countries, with some broader regional contagion.

The likely economic impact of the Ebola epidemic will be significant for the affected countries in any plausible scenario. However, the scenario in which the epidemic is not swiftly contained promises to leave a much deeper adverse economic impact. Even in the absence of broad epidemiological contagion, those countries in the region with tourism are already feeling the economic impact. For example, in Gambia—where tourism accounts for nearly 11.5 percent of GDP—an estimated 65 percent of hotel reservations have been cancelled since the beginning of the crisis. Economic modeling suggests that the economic impact for the region as a whole is likely to run into the billions and potentially into the tens of billions.

a. This section is adapted from The World Bank Group, "The Economic Impact of the 2014 Ebola Epidemic: Short- and Medium-Term Estimates for West Africa," September 17, 2014.

*Deterioration of the security situation:* The conflict in South Sudan and security concerns in northern Nigeria could deteriorate further, with significant regional spillovers. Since the outlook for a political settlement remains poor, the South Sudan conflict could escalate further and significantly disrupt trade in the subregion, including in Kenya and Uganda. An intensification of the Boko Haram insurgency in Nigeria could further disrupt agricultural production in northern Nigeria and spur violence in the subregion, prompting governments in neighboring countries, including Cameroon, to divert additional budgetary resources to security-related expenditures.

*Heightened fiscal vulnerabilities:* Budgetary concerns and currency weaknesses will remain sources of vulnerability for many countries in the region. Notably, a continuation of loose fiscal policy could lead to a further deterioration of already weak fiscal positions in some countries. Fiscal buffers would be further depleted, increasing the vulnerability of the countries concerned to exogenous shocks. In Ghana and Zambia, budget risks will remain salient given public sector wage pressures. In Zambia, for example, 37 percent of the 2014 budget is allocated to the public wage bill, thanks to the 2013 public sector wage award. Currency concerns are also likely to continue. A combination of weak export growth, high import demand, and negative investor sentiment could cause the currencies of frontier market economies to weaken significantly against the dollar, contributing to inflation in these countries. While moderate

food prices and prudent monetary policies have seen inflation remain low in many countries in 2014, currency-induced price pressures will pose a persistent threat.

### External risks

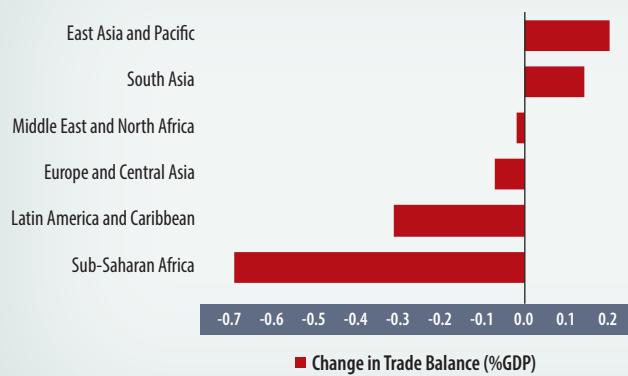
*Higher market volatility:* A sudden increase in risk premia and volatility in global financial markets from their current low levels remains a significant downside risk for the region. It would not only adversely affect South Africa, which depends heavily on portfolio capital flows to finance its current account balance, but also frontier market countries such as Ghana, Nigeria, and Zambia, which have increased their reliance on external market financing. Recent episodes of capital market volatility suggest that countries with large macroeconomic imbalances would face strong downward pressure on the exchange rate and high currency-induced inflation.

*Lower growth in emerging market economies* represents another significant downside risk to the regional outlook. A sharper slowdown in economic activity in emerging markets, particularly in China, would most likely lead to a lower demand for commodities, which could see a significant decline in their price, especially where supply is abundant. A further decline in the already depressed price of metals, particularly iron ore, gold, and copper, will severely affect a large number of countries in the region. In countries such as Mauritania, Mozambique, Niger, Tanzania, and Zambia, metals account for a large percentage of exports, while their extraction has led to significant FDI flows. A protracted decline in metals prices could lead to a significant decline in exports and cause foreign investors to scale down their operations in these countries, which could adversely affect their growth momentum. Actual outcomes will, of course, depend upon other growth opportunities. For example, in Tanzania, the development in the gas sector could well mask a potential declining trend in metals in the country in the long run.

Simulation results suggest that the income effects of a sharper decline of commodity prices on Sub-Saharan African economies could be significant. A scenario is considered where the prices of metals (aluminum, copper, gold, iron ore, and silver) and agricultural commodities (cocoa, coffee, cotton tea, and tobacco) decline by 15 percent

from the baseline in 2014. Sub-Saharan Africa would be affected the most, with the trade balance deteriorating by 0.7 percent of GDP (figure 10). Naturally, this aggregate result hides significant variations at the country level. Among commodity exporters, countries where metals or agricultural products represent a large share of total exports will see their terms of trade deteriorate sharply. Mauritania, Cote d'Ivoire, Tanzania, Togo, Guinea, and the Democratic Republic of Congo will be particularly affected (figure 11).

**FIGURE 10: Simulation results of a commodity price decline by region**



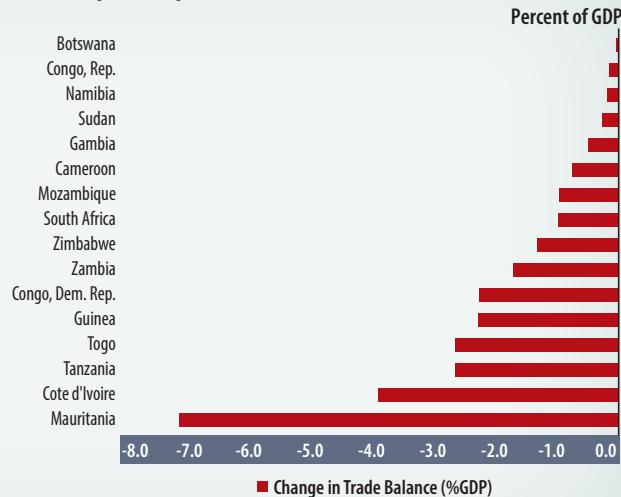
Source: World Bank staff estimates.

Note: Results are for a 15 percent decline in non-energy commodity prices.

A sharper-than-expected decline in commodity prices would affect Sub-Saharan Africa the most

Countries with the least diversified commodity exports would experience the most terms of trade deterioration

**FIGURE 11:** Simulation of a commodity price decline by country



Source: World Bank staff estimates.

Note: Results are for a 15 percent decline in non-energy commodity prices.

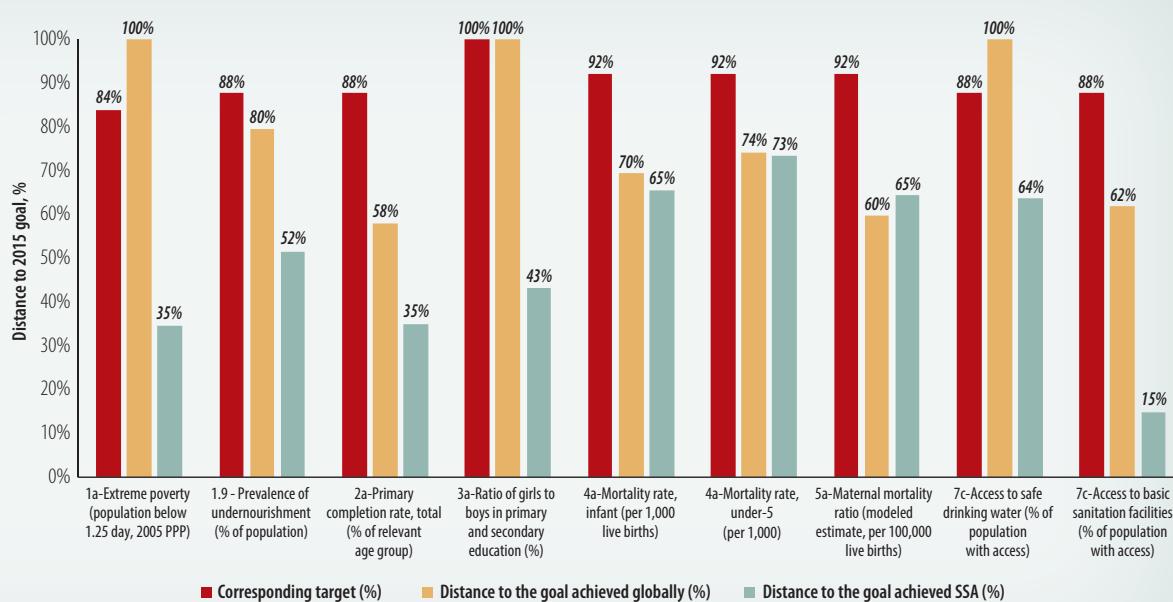
## SUB-SAHARAN AFRICA AND THE MILLENNIUM DEVELOPMENT GOALS

Sub-Saharan Africa is the region whose progress is lagging the most on the MDGs. The region has achieved only 35 percent of the poverty target of halving the proportion of people whose income is below US\$1.25 a day (2005 purchasing power parity basis), while globally this target has already been met (figure 12). Progress on other MDGs is lagging as well, with only 52 percent of the target met on undernourishment, and 35 percent of progress made on the primary completion rate. Substantial gains have been made on the health MDGs, but child mortality rates remain high in Sub-Saharan

Africa. For the health MDGs, only eight countries have met the under-five mortality rate target, and only four countries have made sufficient progress on meeting the target by 2015, while not a single country has met the target for infant mortality, and only one country has made enough progress to meet the target by 2015. Sixty-five percent of the maternal mortality target has been met, with regional progress outpacing global progress. Nevertheless, women in Sub-Saharan Africa face a lifetime risk of maternal death that is about 90 times greater than for women in high-income countries.

Progress on achieving the MDGs is lagging the most in Africa; the largest gap is in access to improved sanitation facilities

**FIGURE 12:** Global and Sub-Saharan Africa Progress toward the MDGs



Source: World Bank staff estimates.

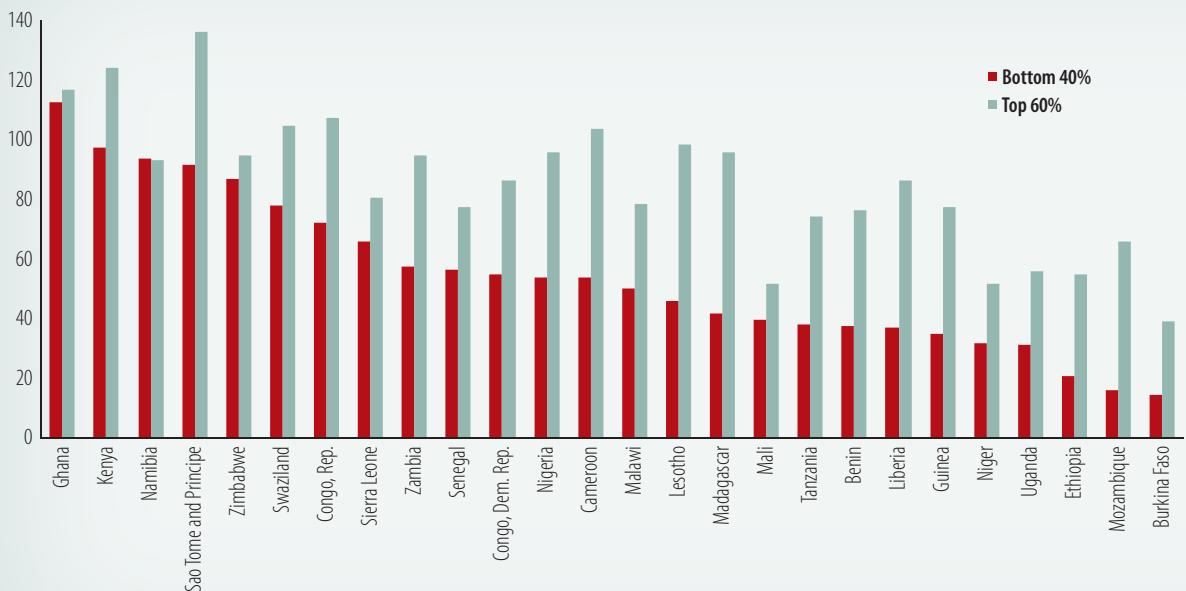
Note: A value of 100 percent means that the respective MDG has been reached. Corresponding target indicates progress currently needed to reach the goal by 2015. Latest available value denotes current progress as illustrated by the most recent available data.

The water and sanitation targets remain a problem for people in most developing countries. Sub-Saharan Africa is lagging the most, with 36 percent of its population lacking access. Access to improved water sources and improved sanitation facilities is correlated with wealth. In Sub-Saharan Africa, almost 90 percent of the richest fifth of the population use improved water sources, while only 35 percent of the poorest fifth of the population do (WHO and UNICEF 2013). However, this region also had the worst starting position, with an even worse situation in rural areas, where only 23 percent of the population has access to improved sanitation; in urban areas the access rate is 20 percentage points higher. This large disparity in Sub-Saharan Africa is the principal reason the MDG sanitation target is unlikely to be met.

Sub-Saharan Africa's fragile states are further behind on achieving the MDGs than other countries in the region. Among fragile states, no countries are likely to meet the 2015 target on prevalence of child malnutrition and infant mortality. Only two countries (Comoros and Liberia) are making enough progress to meet the MDG education target of primary completion rate by 2015, and only three countries (Eritrea, Liberia, and Madagascar) are making enough progress to meet the under-five mortality rate.

Within-country progress on the MDGs is uneven, with considerable inequity in outcomes. For example, on the primary school completion rate, many children that start school drop out before completing the primary stage, discouraged by cost, distance, physical danger, and failure to progress. Access to primary education has also been inequitably distributed across households. The result is unequal outcomes on the education MDG. For example, in Mali, Niger, and Uganda, primary completion rates for children in the lowest two quintiles of the income distribution are between 20 and 30 percent, while for the highest quintiles, primary completion rates range between 60 and 100 percent (figure 13).

**FIGURE 13: Primary completion rate by income group (% of relevant age group)**



Source: World Bank staff estimates based on Edstats, World Bank.

Note: The completion rate can exceed 100 percent if there are many overage students in the last grade of primary school.

Primary school completion rates are correlated to wealth: The bottom 40 percent of Africans have completion rates between 20 and 30 percent, compared to 60 and 100 percent for the top 60 percent

## Section 2: Economic transformation and poverty reduction in Sub-Saharan Africa

- ▶ Nearly two decades of strong growth are transforming the structure of Africa's economies, but not as expected.
- ▶ Sectoral composition of output has shifted in favor of services, with this sector's growth outpacing that of agriculture and industry: Between 1995 and 2011, annual per capita growth in the services sector averaged 2.6 percent compared to 1.7 percent in industry and less than 1 percent in agriculture.
- ▶ While agriculture's share in output has declined, so has that of industry. However, there are divergent trends within industry, with extractives gaining output share and manufacturing's share declining.
- ▶ Export diversification has been limited, as well; primary commodities continue to account for three-fourth of Sub-Saharan Africa's total goods exports, and the share of the region's top five exports in total exports has climbed to 60 percent in 2013 from 41 percent in 1995.
- ▶ Labor shifts reflect sectoral changes, but almost 60 percent of Africa's jobs and 78 percent of its poor workers continue to have a foot in agriculture, the sector with the lowest productivity. The extent of reallocation of labor to high-productivity, nontraditional activities has been limited; the movement of workers has been out of agriculture and into services, not manufacturing.
- ▶ The pattern of growth and economic transformation has implications for poverty reduction. In Africa, growth in agriculture and services has been more poverty reducing than growth in industry. In the rest of the world, by contrast, industry and services have a larger impact on reducing poverty.
- ▶ Structural transformation has a role to play in accelerating poverty reduction in the region. Increasing agricultural productivity will be critical to fostering structural transformation. Boosting rural income diversification can facilitate this transformation, as well. Investments in rural public goods and services (for example, education, health, rural roads, electricity, and ICT), including in small towns, will be conducive to lifting productivity in the rural economy.
- ▶ Although Sub-Saharan Africa's pattern of growth has largely bypassed manufacturing, growing the region's manufacturing base, especially by improving its fundamentals—a better business climate, lower transport cost, cheaper and more reliable power, and a more educated labor force—will benefit all sectors.

### AFRICA'S GROWTH AND ECONOMIC TRANSFORMATION

African countries have seen a dramatic turnaround in economic expansion beginning in the mid-1990s. Between 1995 and 2013, economic growth averaged 4.5 percent per year in real terms, comparable to the rate in the rest of the developing world and more than double the pace of growth of the previous 20 years. On a per capita basis, output growth has been more modest at 1.7 percent a year (figure 14). Most of the region's countries have participated in the surge in growth, though there is considerable variation in the extent of the rebound. Previous editions of *Africa's Pulse* have documented the region's impressive growth performance and analyzed the link between growth, poverty, and inequality. This edition examines how the sectoral composition of this growth has impacted poverty reduction in the region and what the role of structural change could be. The latter is of particular interest, given

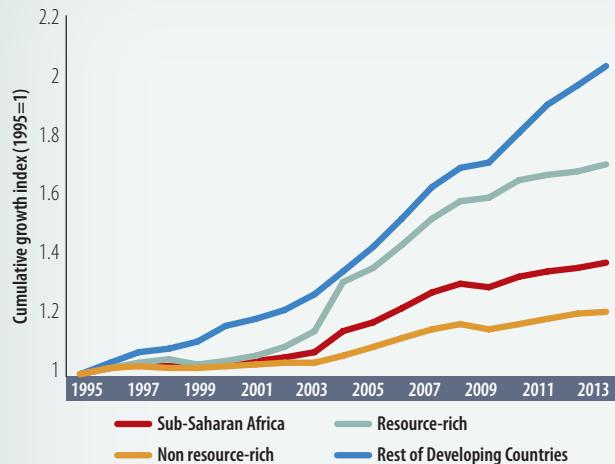
rising concerns about the sustainability of Africa's solid growth.<sup>2</sup>

*Economic transformation.* The pattern of Africa's growth over the last two decades has transformed the economic structure of the region's economies and shifted the sectoral composition of output. Decomposing output growth by sector shows that the fastest-growing sector was services, with industry and, in particular, agriculture, growing at a slower pace.<sup>3</sup> Between 1995 and 2011, per capita growth averaged 2.6 percent in the services sector and 1.7 percent in industry. Agricultural growth lagged substantially at 0.9 percent. Overall, services accounted for 62 percent of cumulative growth in GDP per capita from 1995 to 2011, compared to 24 percent for industry and 13 percent for agriculture (figure 15).

This differential growth performance is reflected in the declining share of agriculture in GDP over the same period, with the average share falling from 17.5 percent to around 15 percent (figure 16). Industry's share in GDP dipped as well, falling to 30 percent from 33 percent. Trends within industry diverged widely, however. The share of other industry (which includes mining) rose sharply, led by Sub-Saharan Africa's boom in natural resources. At the same time, the share of manufacturing shrank to under 10 percent. In the region's economic transformation, the services sector has been the big gainer, growing its share in GDP from 49 percent in 1995 to 55 percent in 2011.

The sectoral trend in other developing countries differs from that of Sub-Saharan Africa in important ways. A notable difference is that per capita growth in industry in other developing countries is much higher (4.8 percent) than in Sub-Saharan Africa, and matching the pace of growth in services. Consequently, industry's share in output has climbed from 36 percent in 1995 to 39 percent in 2011

**FIGURE 14: Growth in GDP per capita in Sub-Saharan Africa by country groups, 1995–2013**

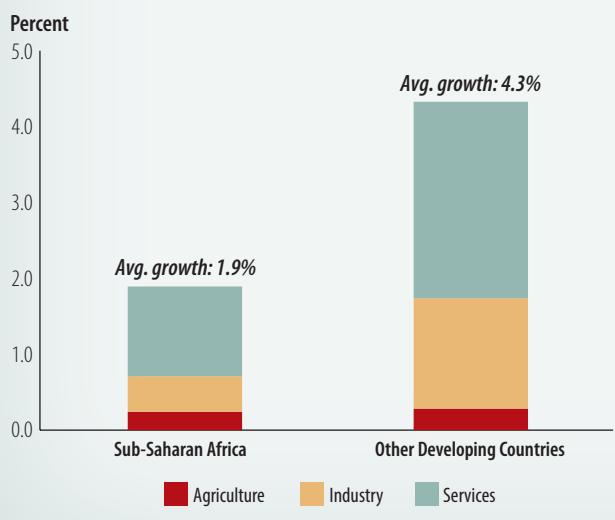


Source: World Bank.

Note: The index presented in this figure depicts the cumulative growth in real GDP per capita from 1995 to 2013 in Sub-Saharan Africa and subgroups. GDP is in U.S. dollars at 2005 prices.

GDP per capita growth in Sub-Saharan Africa averaged 1.7 percent per year from 1995 to 2013, but there was considerable heterogeneity across country groupings

**FIGURE 15: Average growth in GDP per capita by sector, 1995–2011**



Source: World Bank.

The services sector accounted for 62 percent of GDP growth per capita in Sub-Saharan Africa during 1995–2011, compared to 24 percent for industry and 13 percent for agriculture

2 Country groupings used in this section of the report are listed in the Appendix.

3 Agriculture includes cultivation of crops, livestock production, fishing, forestry, and hunting. Industry includes manufacturing, mining, construction, and utilities. Services includes wholesale and retail trade, transport, banking, and public services.

In Sub-Saharan Africa, services have grown as a share of output over the last two decades, while agriculture and manufacturing have declined

FIGURE 16: Sectoral composition of GDP in Sub-Saharan Africa

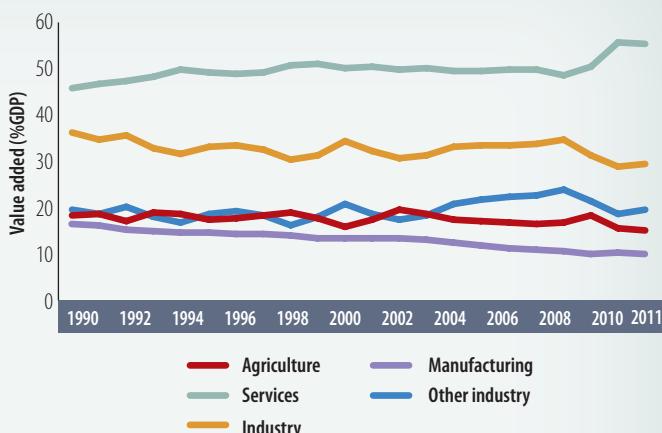
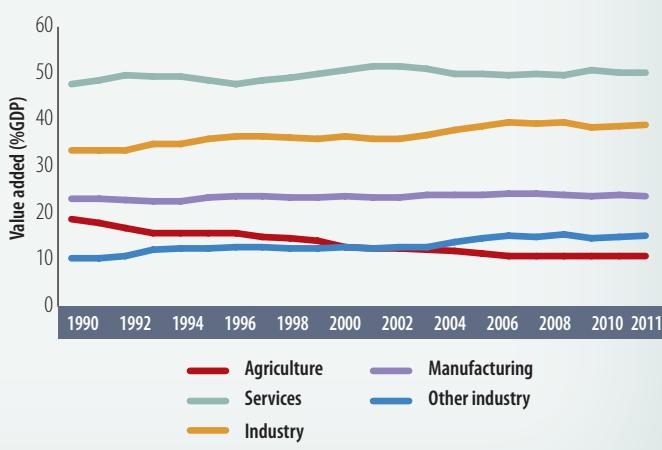


FIGURE 17: Sectoral composition of GDP in other developing countries



Source: World Bank.

Note: Industry comprises manufacturing and other industry.

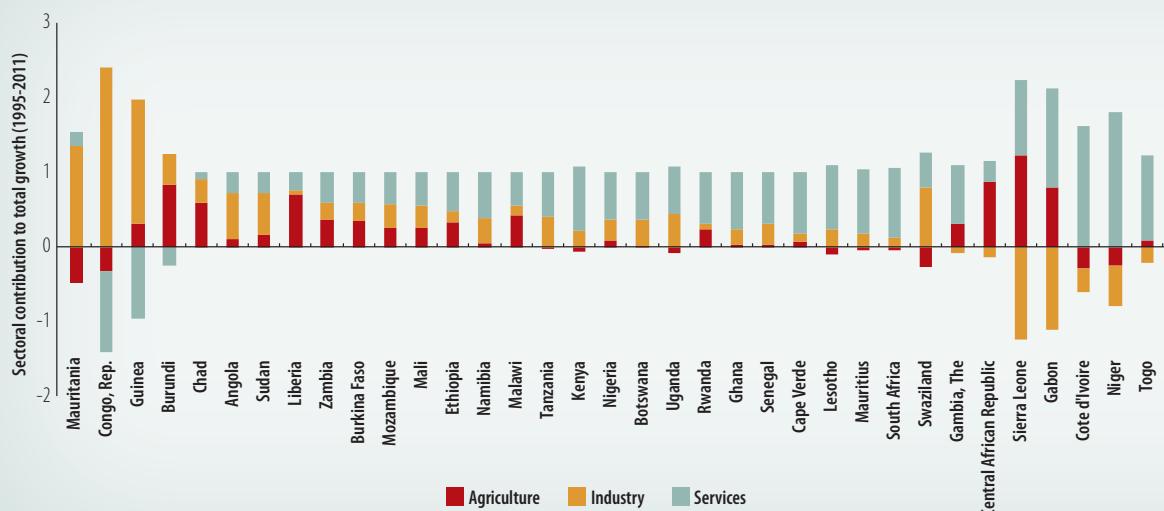
in the former group. And unlike Sub-Saharan Africa, manufacturing has maintained its share in output in other developing countries. There are also some similarities in sectoral changes between these two groups of countries. For example, in both groups, the services sector has gained share in output and agriculture's share has fallen (figure 17).

A country-level perspective shows that African countries generally mirrored the regional pattern of growth and sectoral change. Thus, the region's countries saw an increase in the share of the services sector in GDP and a decline in the corresponding shares of agriculture and industry (figure 18). Notable exceptions to the regional trends include resource-rich countries such as Mauritania, the Republic of Congo, and Guinea, where industry (includes extractives) accounted for an overwhelming majority of cumulative growth since 1995; and Burundi, Liberia, and the Central African Republic, where agriculture has remained the largest driver of growth).

The evolution of labor shares has reflected the shift in sectoral composition of GDP. Using census data as well as Demographic and Health surveys, de Vries et al. (2012) and McMillan and Harttgen (2014) find that the labor share in agriculture has declined and that the movement of workers has been out of this sector and into services, not manufacturing.

Clearly, Africa is undergoing a process of structural change, but not the kind of transformation that was generally expected. According to the standard literature on structural transformation, as economies develop, there is a reallocation of resources across sectors, causing shifts in the labor force. Workers shift from low-productivity jobs to high-productivity jobs. For low-income countries, this has typically been interpreted as a shift out of traditional sectors and activities such as agriculture to modern sectors such as manufacturing—as in East Asia's growth take-off. The 2012 *World Development Report* (World Bank 2012) notes that the creation of millions of higher-productivity, better-paying jobs in labor-intensive manufacturing, especially in Asia, has contributed importantly to the decline in poverty in the developing world. The experience of

FIGURE 18: Sectoral contribution to total growth by country, 1995–2011



Sub-Saharan African countries generally mirrored the regional pattern of growth and sectoral change

Sub-Saharan African countries diverges from this; although the share of agriculture in GDP is declining, so is that of manufacturing. The (informal) and formal services sectors have been absorbing workers and capital, respectively, in most countries, and their share in economic activity is on the rise broadly across the continent. But much of the growth in services has been in low-productivity activities.

The lack of industrialization in Africa's boom has fueled a debate on whether sustainable growth requires a shift in favor of manufacturing (McMillan and Rodrik 2011; McMillan, Rodrik, and Verduzco-Gallo 2013) or whether moving up the quality ladder in sectors where countries can exploit and build on their current patterns of comparative advantage can sustain growth (Hausmann and Hidalgo 2011). India's growth pattern suggests that a shift into high-productivity services, bypassing manufacturing, represents another path to sustainable growth (Ghani, Goswami, and Kharas 2012). Modern services, such as software development, call centers, and outsourced business processes, represent high value-added activities (similar to manufactured products) that can be important drivers of growth for innovative and technology-savvy countries. Similar opportunities may exist in staple and nonstaple agriculture by moving up the value chain as in Nigeria (cassava flour) and Kenya (flowers).

*Diversification of exports:* Diversification of exports away from raw materials and commodities and toward better quality of existing products or new products often supports structural transformation in low-income countries. There is some evidence that in the early stages of development, at per capita income levels below US\$10,000, a country's basket of exports tends to diversify as it exports a wider product range—that is, diversification along the extensive margin (Klinger and Lederman 2009). At much higher incomes (such as in industrial economies), specialization leads to a smaller basket of exports—that is, specialization along the intensive margin (IMF 2014).

Sub-Saharan Africa's overall pattern of trade shows little export diversification during two decades of rapid growth, and exports remain concentrated in a narrow set of products. The share of the top five exports in the region's total merchandise exports increased from 41 percent to 60 percent between 1995

and 2013. Petroleum, iron ore, bituminous minerals, gold, and natural gas comprised the top five exports in 2013, with petroleum and bituminous minerals also being in the top five export products in 1995. The number of new products that have been exported has been low, as well. The composition of the region's exports reflects the pattern of growth, with the rising importance of the resource sector evident in the pattern of exports. Indeed, the region remains heavily reliant on resource-based exports, and the share of primary commodities in total exports is high, at 75 percent (table 1). Within primary commodities, fuels and metals have gained share and agricultural commodities have declined.

Bucking the regional trend, some countries have made progress in diversifying into nontraditional exports. According to the African Center for Economic Transformation's (ACET's) 2014 index, Benin and Rwanda have shown strong progress. In Rwanda, nontraditional exports, particularly vegetables and beverages, have contributed to gains in diversification. In Ethiopia, progress on diversification has been helped by horticulture and leather exports. By contrast, Burkina Faso, Ghana, and Nigeria have seen some slippage on the diversification front, with declining shares of manufacturing and services in exports.

**TABLE 1: Sub-Saharan Africa's exports of manufacturing and primary commodities**

| Median Value (% of merchandise exports) | 1990-00 | 2001-10 | 2011-13 |
|---|---------|---------|---------|
| Manufacturing Commodities               | 22      | 22      | 14      |
| Primary Commodities                     | 72      | 74      | 75      |
| Fuel and Metals                         | 48      | 59      | 64      |
| Agricultural Commodities                | 24      | 15      | 11      |

Source: WITS 2014.

Note: Data are for nominal value of exports.

Evidence shows that several countries have been successful in growing the share of manufacturing in total goods exports. Among these are Senegal, Togo, and Uganda. In Uganda, the share of manufacturing exports has risen from an average of 3 percent of exports during 1990-2000 to 11 percent during 2001-12. The improvement reflects growth of both basic manufacturing goods and more technology-intensive products such as steel and iron rods and plastic tubes and pipes. In Senegal, chemicals and manufacturing products have played a role in lifting the country's share of manufactured exports in total exports to 33 percent from 16 percent over the same period. Other strong performers are Kenya, Madagascar, and Rwanda. Intraregional trade has contributed to the boost in manufacturing exports.

Trade in services offers an important path for diversification, as well. Modern services, such as software development, call centers, and outsourced business processes, are high value-added activities that hold the potential to be an important driver of growth in technology-savvy countries. Favorable global trends, such as the rising shares of services in global trade, and of modern services in total services, provide opportunities for export diversification. Some African countries, such as Kenya (with its successful expansion of mobile banking) and Mauritius (which has grown its tradable business and financial services), are well positioned to benefit from this global trend.

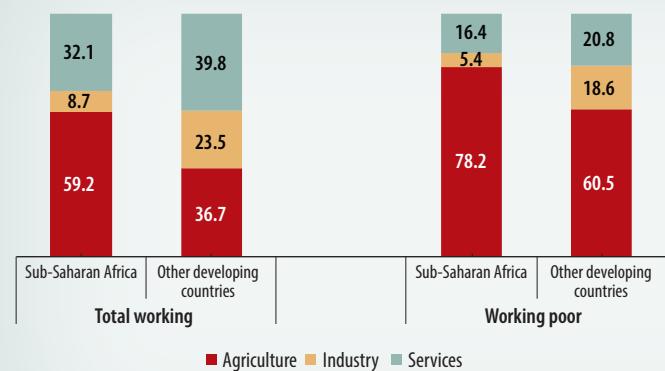
*Change in sectoral composition of labor:* What has this transformation meant for employment and jobs? Although agriculture's output share has fallen to well under a fifth of GDP, 59 percent of the labor force continues to be employed in this sector (figure 19). Moreover, agriculture employs more poor people than

any other sector in Africa. After nearly two decades of economic growth, most Africans continue to earn livelihoods in the traditional economy or the informal sector. In short, the majority of African workers are engaged in nonwage employment—namely, farming and nonfarm small household enterprises. By contrast, labor is more evenly distributed across sectors in other developing countries, with agriculture accounting for 37 percent of employment; manufacturing for 24 percent; and services for 40 percent, representing the largest share.

Moreover, agriculture employs more poor people than any other sector in Africa. While just 5 percent of the poor are employed in industry and 16 percent in services, 78 percent of the poor rely on agriculture for their livelihoods (figure 19). In other developing countries, the distribution of labor is similar among the poor, albeit with a higher proportion working in industry and services than is the case in Sub-Saharan Africa.

Where people work is largely correlated with a country's level of development. Figure 20, shows that the share of labor in agriculture declines with increasing GDP. The opposite is true of employment in services, which rises as GDP per capita rises (figure 21). This is consistent with the agricultural sector employing more of the poor across countries, as well as within them (box 3). Controlling for income levels, the

FIGURE 19: Sectoral composition of labor (percent)



Source: Staff estimates based on International Income Distribution Database.

Note: The numbers correspond to working-age (15–65) population-weighted averages of the most recent surveys between 2002 and 2012. For the working poor, the averages were calculated for a subset of countries with data available on welfare indicators (income or consumption).

Despite a declining share in GDP, nearly 60 percent of the labor force continues to be employed in agriculture. Of Sub-Saharan Africa's poor workers, 78 percent rely on agriculture for their livelihoods

FIGURE 20: Employment share in agriculture by GDP per capita

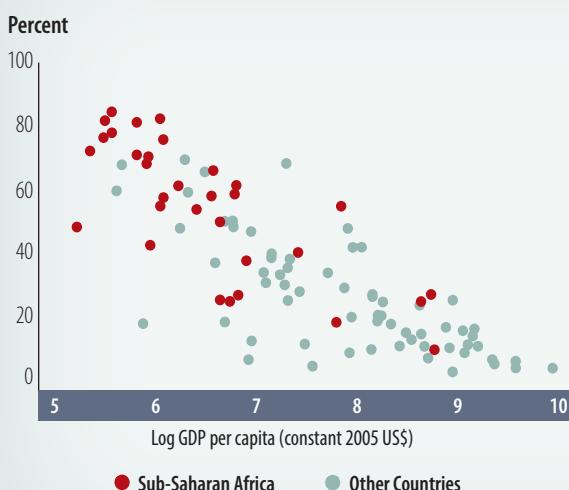
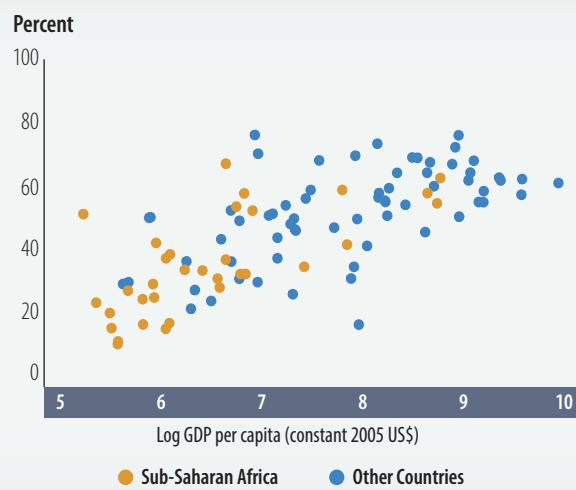


FIGURE 21: Employment share in services by GDP per capita



In Sub-Saharan Africa and other developing countries, the employment share in agriculture falls with higher GDP per capita, and that of services rise

Source: Staff estimates based on International Income Distribution Database and World Development Indicators (2014).

Note: The numbers correspond to the most recent surveys between 2002 and 2012.

pattern of employment shares in agriculture and services in Sub-Saharan Africa is comparable to that in other developing countries.

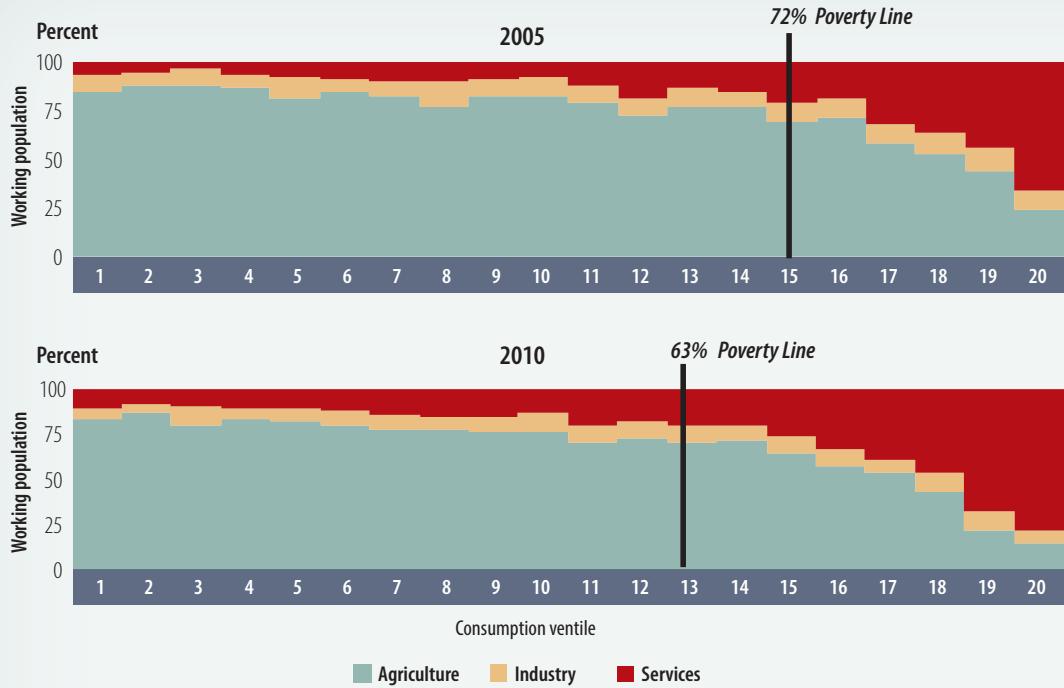
**BOX 3: Shifts in the sectoral composition of labor at different points of the income distribution**

Between 2002 and 2012, the majority of poor households in Sub-Saharan Africa depended on agriculture for their livelihoods (figure 19). This fact, however, is derived from looking at a snapshot of the composition of labor by sector. To understand the drivers of poverty reduction and sectoral transformation, it is also essential to look at the movements in the composition of labor over time and across the income distribution. Ideally, this would mean analyzing the employment trajectory of the poor (and nonpoor) using panel data to obtain estimates by country. Given the scant availability of such surveys in the region, an alternative is to track income ventiles instead of individuals, using cross-sections from the Survey-Based Harmonized Indicators Program (SHIP).

To observe shifts in the sectoral composition of labor at different points in the income distribution, ventiles were constructed by dividing the total distribution of per capita monthly food and nonfood consumption expenditure (2005, purchasing power parity), with each group containing 5 percent of the population. Labor composition was categorized into that in the agriculture (agriculture and fishing), industry (mining, manufacturing, electricity, and construction), and services (commerce and transport, financial, insurance and real state, public administration, and other services) sectors. Rwanda (2005–10) and Senegal (2001–05) were selected for the analysis, because both these countries have experienced substantial reductions in poverty over the last decade. In Rwanda, the poverty headcount at US\$1.25 a day decreased by almost 10 percentage points, from 72.1 percent in 2005 to 63.2 percent in 2010 (figure 22). A reduction of nearly the same magnitude was observed for Senegal between 2001 and 2005 (with 44.2 percent and 33.5 percent poverty headcount, respectively) (figure 23).

Figures 22 and 23 show the percentage of the population by sector (agriculture, industry, and services) on the vertical axis, against the income ventiles. In Rwanda (figure 22), the lower end of the income distribution is still mostly comprised of agriculture, which accounts for at least 80 percent of households up to the seventh ventile. However, there has been an increase in the fraction of households engaged in the services sector at all segments of the distribution. Moreover, more households below the poverty line were engaging in the services sector in 2010 than in 2005. Labor movements from agriculture to services, and complementarities between the two sectors, could be responsible for driving transitions out of poverty. Senegal (figure 23) shows a similar pattern, with more people below the poverty line deriving a livelihood from services in 2005 than in 2001. For example, one notable jump can be seen at the third ventile in 2005, where the services sector accounted for 23 percent of employment, compared to 16 percent in 2001. The agriculture sector also accounts for the highest share of employment at the lower end of the income distribution, with this share declining at higher income ventiles.

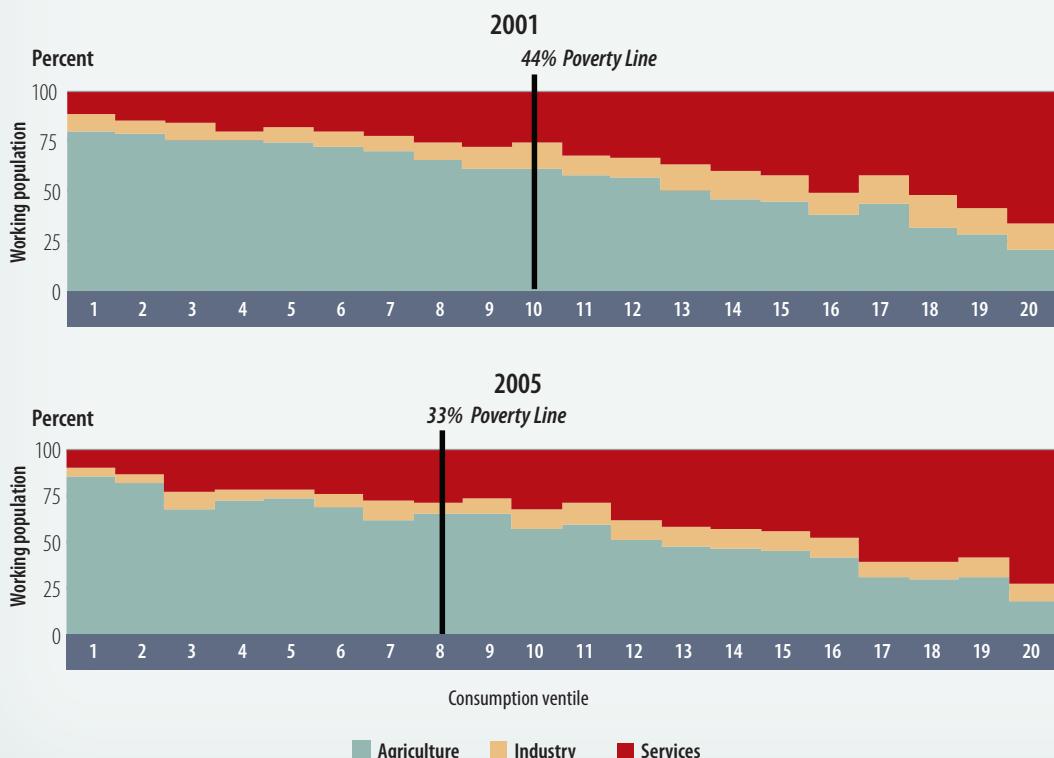
FIGURE 22: Sectoral composition of the distribution of income for Rwanda, 2005 and 2010



Source: Staff estimates using SHIP data.

More people below the poverty line in Rwanda and Senegal derive livelihoods from services than they did before

FIGURE 23: Sectoral composition of the distribution of income for Senegal, 2001 and 2005



Source: Staff estimates using SHIP data.

## HOW DOES THE PATTERN OF GROWTH MATTER FOR POVERTY REDUCTION IN AFRICA?

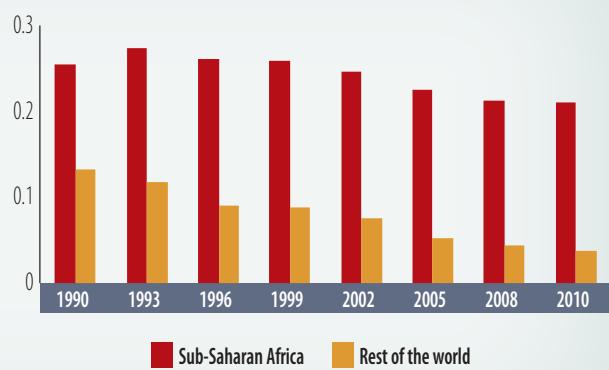
Economic growth has a central role to play in moving people out of poverty. Recent trends in Sub-Saharan Africa point to progress in the fight against income poverty. Between 1990 and 2010, the share of people living on less than US\$1.25 a day in Sub-Saharan Africa declined from an estimated 57 percent to 48 percent. The broad picture emerging from the data is that the region's robust growth is helping to bring poverty down, but not fast enough. At 48 percent in 2010, the poverty rate is sharply behind the desired progress needed by this date to achieve the target by 2015 (figure 24). The depth of poverty, measured by the poverty gap, has also declined at a steeper rate in other developing countries (from 13 percent in 1990 to 4 percent in 2010) than in Sub-Saharan Africa (25 percent in 1990 to 21 percent in 2010) (figure 25).

The MDG target of halving extreme poverty by 2015 has been met globally, but Sub-Saharan Africa continues to lag on this target

**FIGURE 24: Poverty headcount (US\$1.25 a day)**



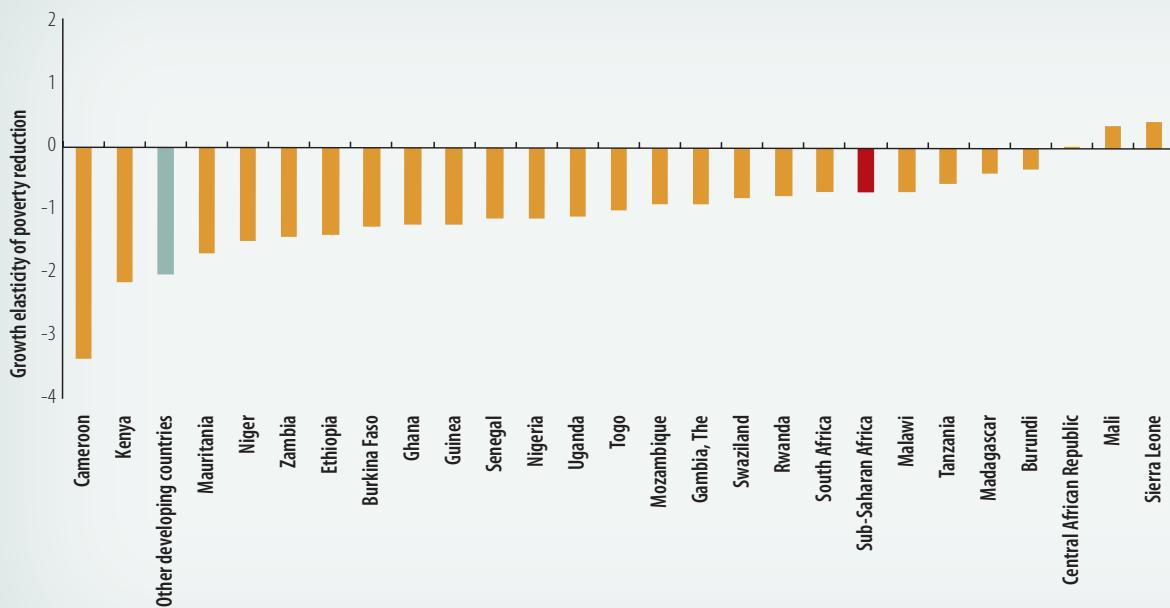
**FIGURE 25: Poverty gap (US\$1.25 a day)**



Source: Staff estimates based on PovcalNet (2014).

Indeed, the conversion of growth into poverty reduction has been slower in Africa than in the rest of the developing world, with average growth elasticities of poverty reduction of -0.7 and -2, respectively (Christiaensen, Chuhan-Pole, and Sanoh 2013). Beyond the broad trends and averages, there is considerable diversity of experience. The growth elasticity of poverty reduction measured as changes in poverty headcount over changes in mean per capita income is illustrated in figure 26 for a subset of Sub-Saharan African countries. There is substantial heterogeneity in this indicator across countries; for example, a 1 percent increase in GDP in Cameroon is correlated with a reduction in poverty more than twice that seen in Zambia. In Burundi, the poverty-reducing effect of growth is only half that of the regional average. The growth elasticity of poverty reduction is positive in some cases, meaning that upward or downward movements in income are associated with poverty movements in the same direction. Data quality issues and lack of availability of recent estimates may be affecting these results but, more important, this reflects the fact that poverty reduction also depends on other conditions, such as inequality, both levels and changes, and sectoral and geographic patterns of growth.

FIGURE 26: Growth elasticity of poverty reduction, latest available data, 2000–10



Source: Staff estimates based on PovcalNet (2014); Christiaensen, Chuhu-Pole and Sanoh (2013).

Note: Figures calculated using the most recent spell between 1997 and 2010 for selected countries.

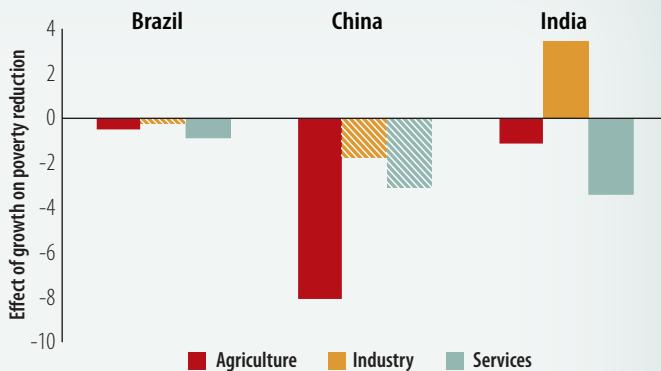
The growth elasticity of poverty in most Sub-Saharan Africa countries is much smaller than that of other developing countries

An issue that arises is whether the pattern of growth has implications for poverty reduction. Namely, does poverty respond differently to growth in different sectors? There are several reasons why there could be differential impacts of sectoral growth on poverty reduction. One obvious reason is due to differences in size of sectors. Thus, even if two sectors have similar growth rates, the effect on poverty can vary because of differences in sector size. But there are also other reasons. Importantly, for output growth to lift people out of poverty, poor people need to be able to participate in the growth—either by contributing to it directly, or by benefiting from it through redistribution. But poor people often face constraints to moving to places where the growth takes place (such as, the capitals), and the political economy constraints to redistribution are typically equally challenging. Thus, poor people are more likely to participate in and benefit from growth if it happens in the activities and areas where they work or live. Consequently, the geographic and sectoral patterns of growth are likely to matter in reducing poverty.

Since poor people are generally engaged in agriculture and concentrated in rural areas, responsiveness of poverty reduction to agricultural growth and rural economic growth is likely to be higher than to growth in other sectors. Another reason is that poor people usually have low labor skills. Growth in sectors with a higher intensity in the employment of unskilled labor is more poverty reducing than growth in other sectors (Loayza and Raddatz 2010). Differences in inequality of assets across sectors can also impact the poverty-reducing effects of sectoral growth. For example, unequal distribution of land ownership may constrain the poverty-reducing effect of agricultural growth (Christiaensen, Demery, and Kuhl 2011). In sum, the pattern of growth matters for poverty reduction because of heterogeneity in the participation of the poor by sector.

In China, growth in the agricultural sector has been exceptionally propoor; in Brazil and India, growth in services has been most poverty reducing

**FIGURE 27: Evidence from Brazil, China, and India on sectoral growth and poverty reduction**



Sources: Data for Brazil from Ferreira et al. (2010), for China from Ravallion and Chen (2007), and for India from Ravallion and Datt (1996).

Note: The results refer to time periods of analysis from 1985 to 2004 for Brazil, 1981–2001 for China, and 1951 to 1991 for India. National poverty lines are used for all countries. Solid bars represent statistically significant coefficients.

the participation of the poor in agricultural growth. This has translated into a four times greater impact of agricultural growth on national poverty than manufacturing and services growth. In Brazil (where it is unequally distributed) and India (where many of the poor are landless), by contrast, it is service sector growth that has been most poverty reducing.

The importance of agriculture in reducing poverty in low-income countries, especially in Africa, stems from the fact that a majority of the poor—three-quarters of the world’s poor live in rural areas—depend on agriculture for their livelihoods (Filmer and Fox 2013; World Bank 2007). It follows, therefore, that growth in this sector will be more beneficial for the poor than growth in sectors in which the poor exhibit lower participation. Christiaensen, Demery, and Kuhl (2011) find that agricultural growth has a greater impact on reducing poverty than nonagricultural growth. Diao, Thurlow, and Fan (2012) find (for six Sub-Saharan African countries) that the impact on the poverty rate of a 1 percent annual increase in GDP per capita driven by agricultural growth is between 53 percent to 127 percent larger than from an equivalent increase in GDP fueled by nonagricultural growth.

But there is also evidence to suggest that not all agricultural growth is equally poverty reducing. For example, growth that positively affects smallholder staple crop productivity, as opposed to export crops, has been found to be more poverty reducing (Diao, Thurlow, and Fan 2012). This follows from the larger multiplier effects and growth elasticities of poverty for such crops—1 percent growth in agriculture driven by cereal or root/tuber productivity growth generates a larger decline in national poverty than a 1 percent growth in agriculture driven by growth in export crops. While export crops typically have higher value and growth potential than food crops, the latter are usually more effective at generating economy-wide growth and reducing national poverty.

There is a sizable literature on the inclusiveness of different types of growth at the country level. Some well-known studies examining this issue at the subnational level are Ravallion and Datt (1996) in India; Ferreira, Leite, and Ravallion (2010) in Brazil; and Montalvo and Ravallion (2010) in China. A comparison of the experiences of Brazil, China, and India shows substantial differences in the sectoral impact of growth on lowering poverty (Ravallion 2010) (Figure 27). In China, growth in the agricultural sector has been exceptionally propoor. Ravallion and Chen (2007) find that access by poor farmers to agricultural land facilitated

## *Sectoral composition of growth and poverty reduction*

Country-level results show substantial differences in the sectoral impact of growth on reducing poverty. We want to examine from a regional perspective how the sectoral composition of growth has mattered for Africa's poverty reduction. Using cross-country analysis, the link between the composition of growth and poverty reduction during 1990-2010 is studied.<sup>4</sup> Three consumption-based measures of poverty are examined: the poverty headcount, which is the proportion of the population living under US\$1.25 a day (2005 purchasing power parity [PPP] basis); the poverty gap, which shows the depth of poverty; and the squared poverty gap, which incorporates the degree of inequality among the poor. All three poverty measures are included in the analysis to see how conclusions vary by poverty measure. Consumption-based poverty measures are from PovcalNet and are based on household survey data.<sup>5</sup> Poverty data are available at three-year intervals beginning from 1981 to 2008 and with a two-year gap between 2008 and 2010 (this does not necessarily represent successive surveys, but years for which data or estimates are available in PovcalNet).

GDP is disaggregated into three broad output sectors: agriculture, industry, and services.<sup>6</sup> This level of disaggregation allows us to include 29 countries in Sub-Saharan Africa and 31 in the rest of the world in our analysis. Sectoral output is value added in GDP by sector, and is from the World Development Indicators database. A finer disaggregation, especially of the manufacturing sector, would be desirable, but issues of data quality are a concern. Data quality issues suggest that results need to be interpreted cautiously.

The empirical analysis confirms that in addition to overall growth of GDP per capita, what matters for poverty reduction is where growth comes from—that is, agriculture, industry, or services (table 2). Growth in the agricultural and services sectors is strongly associated with aggregate poverty reduction, but growth in industry does not have a significant effect on lowering poverty. Statistical tests reject the hypothesis that the sectoral composition of growth does not matter.<sup>7</sup> The impact of GDP originating in the agricultural and services sectors (controlling for size) on national poverty is fairly comparable. A 1 percent increase in GDP per capita led by agricultural growth reduces poverty by 0.67 percent, and the same increase led by services reduces it by 0.96 percent. These poverty-reducing effects come from two sources: sectoral growth in GDP per capita, and the share of each sector in total GDP per capita. If, on average, the share of agriculture in the Sub-Saharan Africa sample were half of what it is, the agricultural sector would have to grow twice as fast to achieve a 0.67 percent reduction in poverty. Likewise, if the services sector share is increased, it would require a correspondingly smaller growth rate to achieve the same reduction in poverty. Larger shares of GDP per capita compensate for lower growth rates, or demand less of growth, for poverty reduction than in sectors with declining shares such as agriculture.

<sup>4</sup> For the empirical analysis the following model, from Ferreira et al. (2010), was estimated separately for headcount, poverty gap, and poverty gap squared using a standard OLS:

$$\Delta \ln P_{it} = \beta^A s_{it-1}^A \Delta \ln Y_{it}^A + \beta^I s_{it-1}^I \Delta \ln Y_{it}^I + \beta^S s_{it-1}^S \Delta \ln Y_{it}^S + \pi_t + u_{it}$$

The dependent variable,  $\Delta \ln P_{it}$ , is the growth rate in the poverty measure. The explanatory variables were included as the share of the sector in total GDP per capita in the previous period ( $s_{it-1}$ ) multiplied by growth in GDP per capita of the sector ( $\Delta \ln Y_{it}^j$ , where  $i$  represents country,  $t$  year, and  $j$  sector [A: agriculture, I: industry, and S: services]).

<sup>5</sup> The data are under revision as a result of newer surveys.

<sup>6</sup> As noted earlier, agriculture includes cultivation of crops, livestock production, fishing, forestry, and hunting; industry includes manufacturing, mining, construction, and utilities; and services includes wholesale and retail trade, transport, banking, and public services.

<sup>7</sup> This is supported by the results of a statistical test where the null hypothesis is that the sector-specific betas are equal ( $\beta^A = \beta^I = \beta^S$ ). The test also compares sector and country-specific betas. This hypothesis was rejected with 99 percent confidence.

TABLE 2: Cross-country regression of sectoral growth and poverty

| VARIABLES    | Sub-Saharan Africa   |                      |                      | Other Developing Countries |                      |                      |
|--------------|----------------------|----------------------|----------------------|----------------------------|----------------------|----------------------|
|              | Headcount            | Poverty Gap          | Sq. Poverty Gap      | Headcount                  | Poverty Gap          | Sq. Poverty Gap      |
| Agriculture  | -0.668***<br>(0.209) | -1.025***<br>(0.318) | -1.322***<br>(0.417) | -1.224<br>(1.268)          | -0.752<br>(1.799)    | -2.411*<br>(1.333)   |
| Industry     | -0.086<br>(0.301)    | -0.078<br>(0.371)    | -0.115<br>(0.434)    | -1.864***<br>(0.483)       | -2.595***<br>(0.624) | -3.079***<br>(0.787) |
| Services     | -0.963***<br>(0.193) | -1.233***<br>(0.254) | -1.493***<br>(0.310) | -1.881***<br>(0.507)       | -1.899***<br>(0.681) | -1.195*<br>(0.683)   |
| Observations | 228                  | 228                  | 228                  | 240                        | 240                  | 239                  |
| Countries    | 29                   | 29                   | 29                   | 31                         | 31                   | 31                   |
| R-squared    | 0.280                | 0.309                | 0.319                | 0.367                      | 0.344                | 0.377                |

Source: Staff estimates based on PovcalNet and World Development Indicators (2014).

Notes: Regression coefficients are elasticity of poverty reduction with respect to aggregate GDP growth originating from a particular sector (controlling for size).

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

But the larger relative size of services also means that the growth elasticity of poverty reduction of this sector is over four times larger than that for agriculture. An increase of 1 percent in per capita GDP growth in agriculture is associated with a decline in poverty of 0.12 percent, while the same increase in services reduces poverty by 0.47 percent (table 3). The regression results for the effect on the squared poverty gap measure show that agriculture and services are more effective in reducing poverty among the poor than industry. The above results are robust to the inclusion of controls.

The empirical results also show that differences in the impact of growth originating in agriculture and services mostly disappear when looking at the effects of the poorest of the poor (as captured by the poverty gap squared measure), underscoring that growth in agriculture is especially beneficial for the poorest. Overall, given limited growth in agricultural GDP over the past two decades (0.9 percent per capita per year), the somewhat muted reduction in poverty does not surprise. Most of it has likely been driven by the service sector (not unlike in India in the 1980s and 1990s (Ravallion and Datt, 1996)). It also highlights the enormous potential for accelerating poverty reduction if the performance of the agricultural sector can be boosted. Higher world food prices, increased domestic demand for food following solid economic growth and urbanization and increased investment both by the public and private sector should well position Africa for harnessing this opportunity. Ethiopia's and Rwanda's experiences are illustrative.

TABLE 3: Growth elasticity of poverty reduction by sector<sup>8</sup>

| Elasticity  | Sub-Saharan Africa |             |                 | Other Developing Countries |             |                 |
|-------------|--------------------|-------------|-----------------|----------------------------|-------------|-----------------|
|             | Headcount          | Poverty Gap | Sq. Poverty Gap | Headcount                  | Poverty Gap | Sq. Poverty Gap |
| Agriculture | -0.119             | -0.187      | -0.245          | -0.140                     | -0.081      | -0.279          |
| Industry    | -0.007             | -0.012      | -0.034          | -0.676                     | -0.946      | -1.109          |
| Services    | -0.472             | -0.635      | -0.795          | -0.958                     | -0.971      | -0.585          |

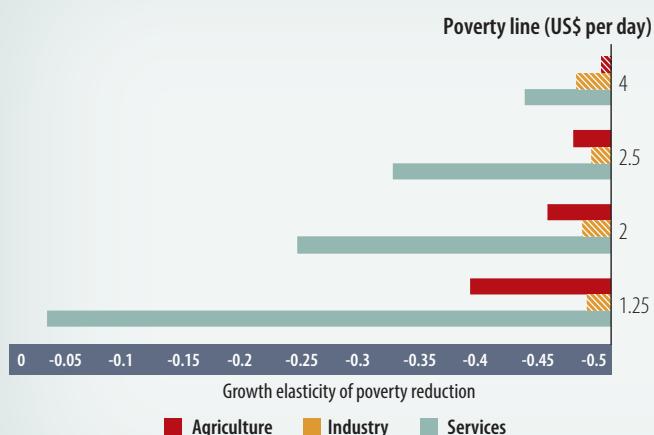
Source: Staff estimates based on PovcalNet (2014) and World Development Indicators (2014).

<sup>8</sup> The growth elasticity of poverty reduction is equal to the coefficient of the OLS regression ( $\beta^J$ ) described in footnote 2, multiplied by the weighted average share of GDP ( $s^J$ ) for each sector  $J$  ( $e^J = \beta^J * s^J$ ).

Cross-country evidence from the rest of the world also shows that the sectoral composition of growth matters for poverty reduction. For countries outside the Africa region, industry and services growth exerts a much stronger poverty response than agricultural growth. For both services and industry, an increase of 1 percent in the growth in GDP per capita led by each of these sectors decreases the poverty headcount by almost 2 percent. The gap between the poverty-reducing effects of these two sectors is uneven for poverty gap and poverty gap squared, with industry having larger impacts. The growth elasticity of poverty reduction of the services sector is 40 percent larger than that for industry. The link between agricultural growth and poverty reduction in the rest of the world is weak for poverty headcount and poverty gap, but significant for squared poverty gap. Overall, the results for other developing countries differ substantially from that for Sub-Saharan Africa, where agricultural growth is more effective in reducing poverty.

One striking result is that industrial sector growth does not have a significant effect on poverty reduction in Africa, while it has larger and significant effects in the rest of the developing world. One key point to bear in mind is that the share of poor labor in industry is low compared to agriculture and services (figure 19). One possible explanation could then be that industry can have an impact on those who are well above the US\$1.25 poverty line. To see this, figure 28 shows the growth elasticity of poverty reduction at different levels of income per day. The growth elasticity of services decreases as the income per day increases. The same pattern holds for agriculture, but this sector also loses its significance at higher income per day. Industry, however, increases in effect, exceeding the elasticity of agriculture at an

FIGURE 28: Growth elasticity of poverty reduction by sector, by poverty line



The growth elasticity of poverty reduction in agriculture and services decreases as income rises, while the opposite is true for industry

Source: Staff estimates based on PovcalNet (2014) and World Development Indicators (2014). Note: The solid bars represent significant effects at 10 percent of significance or lower. Industry is not significant and agriculture loses its power as the poverty line increases (not significant for US\$4 a day).

income of US\$4 a day, but it is still not statistically significant. The above analysis shows that subsectors, like manufacturing, can lift incomes, but they would have to increase dramatically in size to have a substantial impact on lowering poverty in the region. Recent analysis by Rodrik (2014) suggests that African growth in the coming years is in fact much more likely to stem from agriculture or services than from manufacturing. If this pattern of growth materializes, combined with the observed higher growth elasticities of poverty reduction with respect to aggregate GDP growth originating in these sectors, it may provide a window of opportunity for poverty reduction in Africa.

### Two case studies

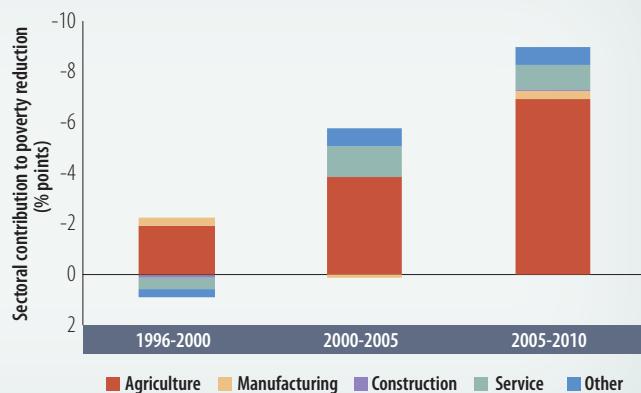
Country-specific poverty analyses can provide detailed insights on the importance of the sectoral composition of growth in reducing poverty. The alignment of findings with those from the cross-country analysis will vary by country. For example, results from a country study on Ethiopia find support for the importance of agricultural growth in reducing poverty, but not of services. Hill and Tsehay (2014) examine the poverty-growth links in the context of Ethiopia. Ethiopia has grown rapidly for over a decade, registering annual average per capita growth rates of over 8 percent. The country's growth has been accompanied by a sharp drop in the poverty rate. The study examines zone-level variations in sectoral growth and provision of public goods to explain the reduction in poverty between 1996 and 2011.<sup>9</sup> The aim is to see whether the sectoral composition of growth mattered for poverty reduction in Ethiopia.

They find that agricultural growth is significantly related to the decline in poverty in Ethiopia. Thus, zones with the fastest increase in agricultural production experienced the largest decline in poverty. Growth in agricultural output per capita lowered the average poverty rate, with a 1 percent increase in growth reducing poverty by 0.9 percent. Controlling for other variables raises the growth elasticity of poverty reduction to 2 percent. The impact of agriculture is especially found close to urban centers (50,000),

pointing to the role of improved access to markets. By contrast, growth in manufacturing and services has not exerted a statistically significant impact on poverty reduction (figure 29). In Ethiopia, growth in rural and small non-farm town services is closely related to agricultural growth, with the majority of these businesses (64 percent) established on the back of earnings from agricultural production (Jolliffe et al., 2014). Given this correlation between activities, it is possible that the coefficient on agricultural growth also captures some of the poverty-reducing

Recent agricultural growth in Ethiopia has reduced poverty 1:1

**FIGURE 29: Sectoral contribution to poverty reduction in Ethiopia**



Source: Hill and Tsehay 2014.

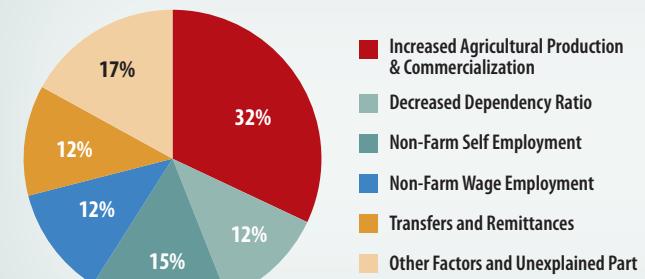
<sup>9</sup> Panel data for 50 zones between 1996 to 2011, four observations over this 15-year period.

effects of services sector growth. The study does find that in more recent periods, manufacturing growth has started to contribute to lowering poverty in urban areas.

A recent poverty assessment of Rwanda (World Bank 2014b) examines the contribution of various factors to growth in consumption. Rwanda experienced a period of exceptionally strong growth and poverty reduction during the last decade, with an average GDP growth of 8 percent per year since 2001, placing it among the fastest-growing economies in the world. Over the period as a whole, each 1 percent increase in consumption was associated with only a 0.8 percent decrease in poverty. Since 2006, however, growth in Rwanda became markedly more propoor, as reflected in a higher growth elasticity of poverty reduction of -1.25. This latter period also coincided with a period of rapidly increasing agricultural productivity and production, as well as diversification into nonfarm activities, rapidly falling fertility rates, and rising remittances.

Using a statistical decomposition method, they examine which factors can explain the change in mean household consumption at various points of the income distribution. For the period 2001 to 2011, the analysis reveals that much of the growth in consumption (median) in Rwanda can be explained by underlying trends such as the boom in agricultural production, the increase in non-farm activities, declining dependency ratio, and transfers and remittances. Through increased production and commercialization (the increased shares of harvests sold on the market), agriculture accounted for nearly one-third of the national consumption growth during this period. Another important correlate of the change in consumption is the increased activity in nonagricultural household businesses, which explains 15 percent of consumption growth. The importance of agriculture is not surprising. Agriculture is the backbone of the Rwandan economy: Although the share of agriculture in GDP fell from 45 percent in 2001 to 34 percent in 2011, agriculture remains the primary occupation for over 70 percent of working Rwandans. Along with boosting agricultural performance, increasing rural income diversification will be important to sustaining the pace of poverty reduction and economic growth.

**FIGURE 30: Contribution of various factors to growth in consumption in Rwanda, 2001-11, in percent**



Source: World Bank 2014b.

Agriculture accounted for one-third of consumption growth in Rwanda between 2001 and 2011

## SO WHAT IS THE ROLE FOR STRUCTURAL TRANSFORMATION IN ACCELERATING AFRICA'S POVERTY REDUCTION?

The evidence reviewed so far suggests a strong continuing role for increasing productivity within sectors in accelerating Africa's poverty reduction, especially in the so-called low-productivity sectors (agriculture and services). But would a sole focus on the fundamentals to foster sectoral growth not ignore key features of the historical patterns of development, that is the reallocation of activities and labor from low- to high-productivity sectors as countries develop?

The realization that low- and high-productivity sectors often co-exist and the opportunities this offers for fostering growth (and poverty reduction) by moving people from low- to high-productivity sectors (at least in an accounting sense) has long formed the basis for the dual economy models of economic growth (going back to Arthur Lewis in the 1950s). Following concerns about the sustainability of Africa's recent growth path, they have recently also seen a revival over the one sector neoclassical growth models.<sup>10</sup> Which view of the world is taken also matters for policy. While the latter models emphasize incentives to save, accumulate human and physical capital, and innovate (that is, the fundamentals), the former emphasize the removal of barriers to (labor) movement across sectors instead (Rodrik, 2014).

Reallocation of labor out of agriculture over time is consistent with long-term trends in demand behavior, that is, the long-term proportional decline in spending on food as income increases (Engel's Law). Nonetheless, dual economy models have simultaneously also emphasized the need to meet food subsistence needs in the early stages of development, before labor can be released productively (Gollin, Parente, and Rogerson 2002).

Within the spirit of the dual economy models, growth in overall labor productivity can thus be achieved in two ways<sup>11</sup>: 1) by increasing labor productivity within existing economic activities (through technological change (increasing total factor productivity), capital accumulation, or shifts in the terms of trade; and 2) by moving labor from low- to high-productivity sectors (the structural transformation). Contributions of the latter depend on the labor productivity gap between both sectors, and the speed with which labor is reallocated. These considerations have not been fully captured in the cross-country analysis presented above. So, what is the role of structural transformation in accelerating Africa's poverty reduction?

### *Sectoral productivity gaps are real, and there is also huge heterogeneity within sectors*

Estimating labor productivity differences across sectors and the contribution of structural change to overall labor productivity growth is methodologically and empirically challenging.<sup>12</sup> This holds even more in data-constrained environments like Africa, where solid empirical evidence is scarce. Two recent studies shed some new light. Taking agriculture and nonagriculture as the low- and high-productivity sectors, and using data on their value added and employment shares from the International Labour Organization and the United Nations National Account Statistics, Gollin, Lagakos, and Waugh (2014) calculate the labor productivity gap across 72 countries (figure 31). They find that the value added per worker is on average 3.5 times larger in nonagriculture than in agriculture; the median ratio is 3.1.

10 See for example the 6th international conference organized by the Global Development Network, in Accra, 2014, fully devoted to the theme of Structural transformation in Africa in Accra 2014.  
 11 Growth in labor productivity can be decomposed as:

$$\frac{dy}{y} = \pi_T \frac{dy_T}{y_T} + \pi_M \frac{dy_M}{y_M} + \frac{[y_M - y_T]}{y} dS_M$$

with  $y$  denoting overall labor productivity and  $y_i$  labor productivity in sector  $i=T, M$  (traditional and modern sector respectively),  $\pi_i$  the share of sector  $i$  in the economy and  $S_i$  the share of employment. Increasing labor productivity within existing economic activities is captured by the first two components of the equation. The third component captures productivity change by moving labor into higher productivity sectors.

12 Sectoral employment shares are often based on outdated records/censuses and occupational status of the household head. Yet households typically allocate time across different activities making it hard to calculate the sectoral returns. In addition, labor productivity are partial measures of productivity and are also affected by the amount of human and physical capital allocated. Systematic differences in human and physical capital applied across sectors may artificially raise the gap.

When accounting for sectoral differences in human capital and hours worked, the gap declines by about 50 percent to a factor 2.2 (or 1.9 for the median).<sup>14</sup> As expected—marginal labor productivities across sectors should equalize in a competitive world—the average gap further decreases with the overall level of development. Ranking countries by their 2005 purchasing power parity GDP per capita and moving from the poorest to the richest quartiles, the (adjusted) gap declines

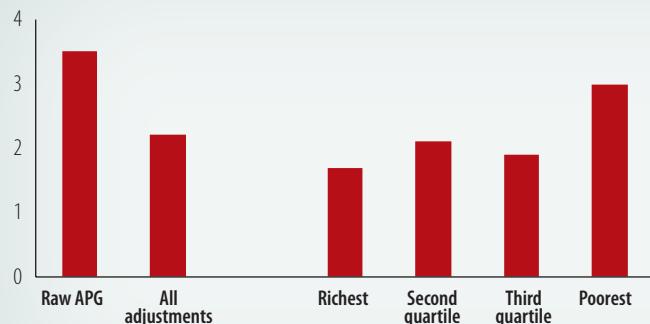
from 3 to 1.7. Overall, these results would suggest substantial gains from moving labor out of agriculture (in an accounting sense). Yet, they do not tell how to bring the structural transformation about or why such gaps persist.

Before digging deeper into the policy implications, it is worth highlighting that the comparisons are based on differences in average (as opposed to marginal) productivity. This hides a lot of insightful heterogeneity across households. For example, using detailed information about time spent and net income earned across activities by each household member from a nationally representative household survey, Christiaensen and Kaminski (2014) estimate the average labor productivity gap between farming and urban self-employment in Uganda 2009/10 at a factor of 1.9 (751/390). This is not unlike the gaps reported by Gollin, Lagakos and Waugh. Yet, they also show that the percentile distributions of labor productivity (net incomes per hour worked) in farming, rural self-employment and urban self-employment display a wide and diverging variation around the means.

While the urban self-employed enjoy the largest labor productivity on average, this is mostly driven by high earnings at the top end of the distribution. This also holds for the larger average returns among the rural self-employed, even though the distribution is less skewed than among the urban self-employed. Net earnings among the bottom 5 percentile are even negative for both groups. Labor productivity among farmers is less dispersed, though net earnings among the 75 percentile household are still more than 4 times higher than those among the 25 percentile household. Also, the median (50<sup>th</sup> percentile) farmer earns amounts per hour worked similar to the median rural self-employed, and more than the median urban self-employed.

Three insights emerge. First, despite substantial labor productivity gaps on average between agriculture and nonagriculture, low- and high-productivity sectors do not nicely coincide with agriculture and nonagriculture respectively. This was recognized early on by Lewis, and is also increasingly recognized within the literature (Gollin 2014). Yet it remains largely ignored within the macro-policy dialogues.

FIGURE 31. Agricultural productivity gap (APG)<sup>13</sup>



Source: Gollin, Lagakos, and Waugh, 2014.

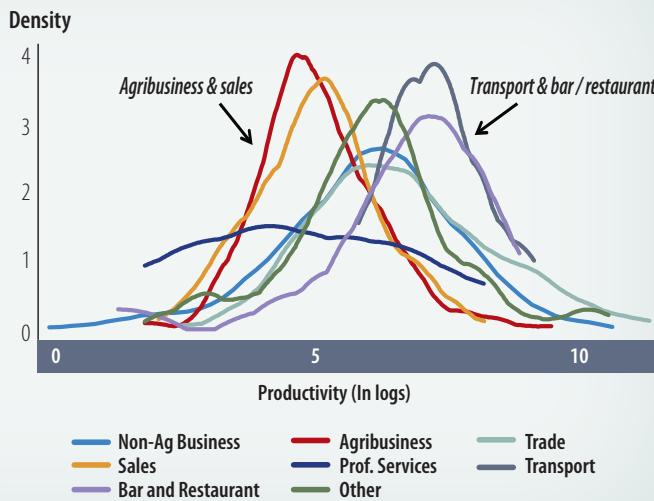
13 Adjusted APG takes into account the average hours worked per worker and average human capital per worker.

Average nonagricultural labor productivity is twice as high as average agricultural labor productivity

<sup>14</sup> Many households or household heads who have agriculture as their primary activity, also work outside agriculture. This leads to an overestimation of the number of agricultural workers and an underestimation of their labor productivity when expressed in terms of persons as opposed to hours.

Labor productivity measures are partial and also reflect capital inputs

FIGURE 32: Gross labor productivity by type of household enterprise, rural Ethiopia 2011



Source: Nagler and Naudé, 2014.

ignore the contribution of physical capital. The larger (gross) labor productivity among rural household enterprises observed in Ethiopia, in rural transport enterprises, bars, and restaurants, all which are more capital intensive, does thus not surprise (figure 32). Yet, it is especially these larger capital requirements (including human capital) that often make the more productive jobs less accessible to the poor (Barrett, Reardon, and Webb 2001). As a result, income diversification among the poor (and structural transformation) is often in the less remunerative nonfarm sector, consistent with the limited decline in poverty reduction despite substantial growth.

### African migrants are mainly in search of better public amenities, not better wages

Clearly, obtaining reliable estimates of *marginal* labor productivity gaps that account for differences in human and physical capital, as well as hours worked, remains challenging in practice. Taking a more indirect approach, the empirical evidence on labor productivity gaps presented above would suggest substantial migratory pressures. Surprisingly, de Brauw and Mueller (2014) find rural-urban migration rates in many Sub-Saharan African countries to be low—1.07 percent per annum on average (population weighted) during 1990-2000, despite clear indications of gains from migration.<sup>15</sup> Many practical and policy barriers can still be invoked to explain this (for example, capital market failures, land tenure policies, implicit discriminatory policies against rural (secondary) education). Yet, it is less obvious why wage gaps do not play a more important role in motivating migration (*ex ante*).

In a novel recent study, Dustmann and Okatenko (2014) examine individuals' intentions to move away from their area of current residence over the next 12 months using data from the Gallup World Poll 2005-6.<sup>16</sup> Overall, 19 percent of respondents in Asia and Latin America and 29 percent in Sub-Saharan

Second, the large within sector heterogeneity suggests that substantial scope remains for growth from bringing low-productivity laborers up to the level of those at the higher end of the distribution, that is, by modernization within sectors. In agriculture, this still holds especial promise for poverty reduction, as shown by the evidence reviewed above.

Finally, the move from low-productivity jobs in agriculture to high-productivity jobs in the city, which is often implicitly assumed in the analysis of structural transformation, is far from obvious.

These differences in labor productivity

<sup>15</sup> De Brauw and Mueller define the rural-urban migration rate as the difference between rural and urban population growth and find it to be 1.07 percent on average (population weighted) for Sub-Saharan Africa during 1990-2000, with few countries experiencing rural-urban migration rates exceeding 2 percent.

<sup>16</sup> While this does not represent actual migration, intentions often represent the best point estimates of respondents' future behavior (Manski, 1990).

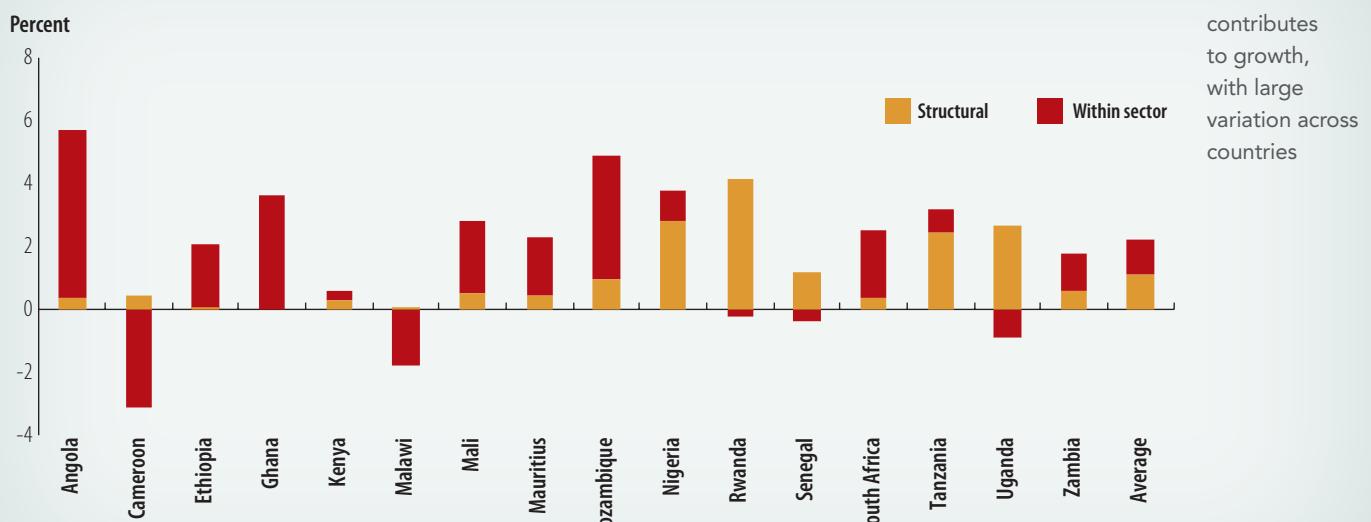
Africa reported that they would likely move away over the next 12 months. This confirms the existence of strong migratory pressures in Sub-Saharan Africa. Strikingly, in Sub-Saharan Africa, dissatisfaction with personal living standards (a proxy for the wage gap) explains only one-fifth of the overall variation in migration intentions. In contrast, it is discontentment with local public services<sup>17</sup> that accounts for the bulk of the variation of migration intentions (60 percent, compared with 38 percent in Asia and 36 percent in Latin America).

This calls attention to the existence of an important rural-urban gap in public amenities (in addition to a wage gap) (see also Ferre, Ferreira and Lanjouw 2012). From an efficiency point, it suggests that people may be moving for the wrong reasons (World Bank 2009), that is, mainly in search for better public amenities, as opposed to higher marginal labor productivity. It highlights the need for spatially neutral investment in rural public goods, instead.

*Rural income diversification holds additional promise, especially for poverty reduction*

So, what has been the contribution of structural transformation in Sub-Saharan Africa's recent history? Decomposing growth in labor productivity across 16 Sub-Saharan African countries during 1995-2009, using the national accounts and sectoral employment data from population censuses, McMillan and Harttgen (2014) find that labor reallocation across sectors accounted on average for about half of overall labor productivity growth (recorded at 21.8 percent) (figure 33). This is substantial.

FIGURE 33: Structural change and labor productivity growth in Sub-Saharan Africa during the 2000s



Source: McMillan and Harttgen, 2014.

<sup>17</sup> An index of contentment was constructed using polychoric principal component analysis applied to respondents' opinions on the availability of public services such as health care, schools, and air quality in the residence area.

There was also substantial heterogeneity across countries. The contribution was small, but positive, for example, in higher-income and well-diversified economies such as Mauritius (2000-07), where agriculture and manufacturing were already much smaller and where the highly productive services sector has managed to absorb labor. In resource-rich Nigeria (1999-2009), however, structural change contributed a lot more. Further inspection shows that this largely resulted from big shifts of labor out of agriculture (and to a lesser extent, services) into manufacturing, since the productivity differences between the three sectors were rather small, probably due to the high degree of informality in all three sectors.

This contrasts with the experience of resource-poor Malawi (1998-2005), which displayed little structural change and even a decline in labor productivity within its sectors. Finally, structural change contributed substantially to labor productivity growth in resource-poor, but emerging, Uganda (1999-2009), with the contribution of structural change resulting both from large labor shifts out of agriculture and large initial differences in labor productivity across sectors (see below).

But what about the contribution of structural transformation to poverty reduction? Analyzing this requires micro household panel data. Consistent with the notion of high productivity growth potential outside agriculture, Christiaensen and Kaminski (2014)<sup>18</sup> find that about two-thirds of Uganda's 2.7 percent annual consumption growth during 2005-09 can be explained by consumption growth among nonagricultural households that stay in nonagriculture (table 4). Half of this came from people in rural nonagriculture staying in rural nonagriculture; the other half came from Kampala, each contributing about 30 percentage points of overall consumption growth.

Yet, 70 percent of the 4-percentage-point decline in the poverty headcount resulted from raising agricultural incomes among people staying in agriculture. The other one-third came from rural nonfarm diversification, which also contributed disproportionately to consumption growth—it accounted for one-fifth of overall consumption growth, even though the number of households that diversified out of agriculture into rural nonfarm activities made up only 13 percent of the population. Put differently, fostering nonagriculture (both in rural and urban areas) appears disproportionately good for growth, and fostering agricultural productivity appears disproportionately good for poverty reduction. Structural transformation into the *rural* economy (rural nonfarm income diversification) benefited both poverty and growth.

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<sup>18</sup> Households are classified in different groupings based on the time they spent in a sector (agriculture and nonagriculture) and location (rural, other urban, city). Households spending more than 75 percent of their labor time in agriculture in each survey period are classified as staying in agriculture. Those who spend less than 75 percent of their time in agriculture in the second period, while staying in rural areas, are considered to switch to rural nonagricultural activities, etc.

TABLE 4: Occupational changes and poverty reduction in Uganda, 2005-09

| Dynamic occupational changes              | Population share (%) | Poverty Headcount (%) | Share on National Poverty reduction (%) | Consumption 2005 | Annual growth (%) | Share on national consumption growth (%) |
|---|----------------------|-----------------------|---|------------------|-------------------|--|
|   |                      | 2005 2009             |   |                  |                   |  |
| Stayed in agriculture                     | 49                   | 36 31                 | 70                                      | 509              | 1.4               | 18                                       |
| Moved from agriculture to non-agriculture | 13                   | 27 17                 | 35                                      | 691              | 4                 | 20                                       |
| Moved from non-agriculture to agriculture | 9                    | 21 28                 | -16                                     | 742              | -4.6              | -14                                      |
| Stayed in non-agriculture                 | 17                   | 9 10                  | -2                                      | 1146             | 5.9               | 66                                       |
| <b>Total</b>                              | <b>100</b>           | <b>28 24</b>          | <b>100</b>                              | <b>697</b>       | <b>2.7</b>        | <b>100</b>                               |

Source: Christiaensen and Kaminski, 2014.

Notes: Consumption is adult equivalent (2000 constant UG SH). Residual category is omitted.

In addition to re-emphasizing the continuing role of within-sector productivity increases for poverty reduction (agriculture) and growth (nonagriculture), the findings also call attention to the spatial aspects of the structural transformation for poverty reduction. Structural transformation can contribute to poverty reduction, but especially if the non-farm jobs are nearby, in the rural economy. The importance of rural development (especially in agriculture, but also in the rural nonfarm sector) is also borne out by other cross-country micro-econometric evidence (Imai, Gaiha and Garbero, 2014) and is consistent with the insights about people's migratory intentions discussed above (Dustmann and Okatenko, 2014).

## INCREASING AGRICULTURAL PRODUCTIVITY IS AN IMPORTANT DRIVER OF STRUCTURAL TRANSFORMATION

Many of the results about the contributions to sectoral growth and structural transformation presented so far hold only in an accounting sense; they abstract from the "knock on effects of sectoral growth in one sector, on structural transformation or the other sector, and do not tell how to bring about the structural transformation. Yet the origins for structural transformation may lie both with short- and long-run policies to foster sectoral growth as well as with the removal of barriers to labor movement. And the latter may also benefit sectoral growth. Increasing land tenure security can for example help release labor for the non-agricultural sector while also fostering investment in land productivity increasing measures such as agro-forestry and erosion control.

Given the complex and dynamic nature of these processes, solid evidence on the actual drivers of structural transformation is hard to come by. One crude, initial attempt by Gollin, Lagakos and Waugh (2014) explores how their adjusted measure of the (average) agricultural productivity gap relates to measures of labor mobility (such as restrictions on domestic movement<sup>19</sup> and ethnic fractionalization), measures of institutional quality (Kaufmann, Kraay, and Mastruzzi's rule of law index) and geographic features (such as terrain ruggedness, a proxy for physical productivity in agriculture,<sup>20</sup> the fraction of land categorized as fertile and tropic, and the share of fuels and minerals in merchandise exports).

When looking at each of the factors separately, the results accord with expectations.<sup>21</sup> When looking at all of them simultaneously, only the coefficient on ruggedness is statistically significant and largely unchanged from when looking at the different factors independently. The findings underscore the critical role of agricultural productivity in fostering the structural transformation. In analyzing the factors affecting the share of the labor force in agriculture in Sub-Saharan Africa, McMillan and Harttgen (2014) also find a negative correlation with agricultural productivity, providing further support for the proposition that the road out of agriculture very much runs through it. They also find small declines in the agricultural labor force with rural schooling and with population growth, hinting at the emergence of land scarcity.

## WAYS FORWARD

Investments and policies to foster growth in the rural economy (that is, close to where the people work and are) emerge as critical for accelerating poverty reduction in Sub-Saharan Africa and fostering inclusive growth. This will also help move people out of agriculture over time. It is difficult to imagine how large amounts of labor can be productively released with cereal yields still standing at historical lows of 1.4 ton/ha. Even China and Vietnam already enjoyed cereal yields well above 2 ton/ha when their institutional reforms unleashed a boost in agricultural productivity and poverty reduction (Ravallion and Chen, 2007).

Africa's rising urbanization and solid economic growth are also generating substantial domestic demand, both for staples and for more protein-rich foods (meat, dairy) and higher value products (vegetables, fruits). As of now, much of these stand to be met by imports,<sup>22</sup> but could be produced locally, generating important import substitution and employment opportunities (for example, rice in West Africa and poultry around urban centers). Designing institutional arrangements and policies that help poorer smallholders benefit maximally from these opportunities, directly through production as well as indirectly through the labor market, is the key challenge moving forward.

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19 Taken from Cingranelli and Richards (2010), who rely on U.S. State Department country human rights reports to categorize a country as having restrictions on internal mobility.

20 The ruggedness index measures the average variability in elevation within a country. It can be seen as a measure of physical productivity in agriculture, with more ruggedness associated with lower productivity (Nunn and Puga, 2012).

21 Countries with restrictions on domestic movement have larger adjusted agricultural productivity gaps, as do countries with more ethnic fractionalization. Similarly, countries that lack rule of law have larger gaps, with a 1 standard deviation decrease in the rule of law associated with a 16 percent higher residual gap. Finally, countries with lower agricultural productivity also have higher gaps, with a 1 standard deviation increase in ruggedness associated with an 18 percent higher gap. A one standard deviation in export dependence on fuel or minerals also increases the gap by 18 percent.

22 The latest agricultural Outlook from OECD-FAO predicts that net food imports for Sub-Saharan Africa will rise dramatically over the next 10 years (by an additional 6.8 million tonnes of wheat to 20.8 million tonnes net import in 2023 and an additional 6.2 million tonnes of rice to 17 million). But Sub-Saharan Africa is also projected to become a net importer of coarse grains (4.8 million tonnes in 2023) (maize/ millet/sorghum) and there are increasing imports of poultry (1.8 million tonnes in 2023) and pork (0.7 million tonnes). With this, Sub-Saharan Africa stands to become the world's major rice importer. Large importers include, for example, Nigeria (5 million tonnes net rice imports by 2023), South Africa (1.7 million tonnes), but also Ghana, Tanzania and Mozambique with between 0.5 and 1 million tonnes each. This is projected to happen despite increasing production (by 35 to 40 percent over the next decade for rice and meat; 28 percent for coarse grains, and 20 percent for wheat).

But boosting agricultural productivity alone will not suffice. Investments in rural public goods (for example, education, health, rural roads, electricity, and ICT) and services (including in small towns) will be equally important to boost the rural economy and facilitate the structural transformation through rural income diversification, while also equipping the next generation for migration to the cities. While Africa's urbanization rate is still relatively low compared to that in other continents, Africa has been urbanizing at a rate similar to that of Asia during 1960-2010. Yet, its urban population has been growing much faster (that is, the rate at which its urban population expands), exceeding Asia's urban growth by 1.5 to 2 percentage points, due to much higher urban fertility. To put this in perspective, when the population in urban centers grows at 3.5 percent per year (as in Asia during 1960-2010), it doubles every 20 years; when it grows at 4.9 percent per year (as in Sub-Saharan Africa during 1960-2010), it doubles every 14 years. As a result, urban centers struggle to keep up the necessary infrastructure base and congestion sets in. This may in turn erode some of the agglomeration benefits from urbanization.

Finally, while manufacturing may not provide a panacea, Sub-Saharan Africa should also expand its manufacturing base, especially by boosting its fundamentals (business climate, macroeconomic stability, lower transport cost, cheaper and more reliable power, and a more educated labor force ), which will benefit all sectors. When support is targeted, it should not crowd out investments in the building blocks for inclusive growth.



## Appendix: Country groupings

| Sub-Saharan Africa        |  | Other developing countries <sup>+</sup> |   |
|---------------------------|--|---|---|
| Resource-rich             | Non-resource-rich                      |   |   |
| Angola <sup>i</sup>       | <i>Benin</i> *                         | Albania*                                | Kyrgyz Republic <sup>i</sup>            |
| Botswana <sup>*i</sup>    | Burkina Faso <sup>*i</sup>             | Algeria*                                | Lao PDR <sup>i</sup>                    |
| Chad <sup>*i</sup>        | Burundi <sup>*i</sup>                  | Argentina <sup>i</sup>                  | Lebanon                                 |
| <i>Congo, Dem. Rep.</i>   | <i>Cameroon</i>                        | Armenia <sup>i</sup>                    | Macedonia, FYR <sup>i</sup>             |
| Congo, Rep. <sup>*i</sup> | Cape Verde*                            | Azerbaijan <sup>i</sup>                 | Malaysia <sup>i</sup>                   |
| <i>Equatorial Guinea</i>  | Central African Republic <sup>*i</sup> | Bangladesh <sup>*i</sup>                | Mexico <sup>*i</sup>                    |
| Gabon*                    | Comoros                                | Belarus <sup>i</sup>                    | Moldova                                 |
| Guinea <sup>i</sup>       | Côte d'Ivoire <sup>*i</sup>            | Belize <sup>*i</sup>                    | Mongolia <sup>i</sup>                   |
| Liberia                   | <i>Eritrea</i>                         | Bhutan <sup>*i</sup>                    | Morocco <sup>*i</sup>                   |
| Mauritania <sup>*i</sup>  | Ethiopia <sup>*i</sup>                 | Bolivia <sup>*i</sup>                   | Nepal <sup>*i</sup>                     |
| Namibia <sup>i</sup>      | Gambia <sup>*i</sup>                   | Bosnia and Herzegovina                  | Nicaragua                               |
| Niger <sup>*i</sup>       | Ghana <sup>*i</sup>                    | Brazil*                                 | Pakistan <sup>*i</sup>                  |
| Nigeria <sup>*i</sup>     | <i>Guinea-Bissau</i>                   | Bulgaria                                | Palau                                   |
| Sierra Leone <sup>i</sup> | Kenya <sup>*i</sup>                    | Cambodia                                | Panama <sup>*i</sup>                    |
| South Sudan               | Lesotho <sup>*i</sup>                  | China <sup>*i</sup>                     | Paraguay                                |
| Sudan <sup>*i</sup>       | <i>Madagascar</i>                      | Colombia <sup>*i</sup>                  | Peru <sup>i</sup>                       |
| Zambia <sup>*i</sup>      | Malawi <sup>*i</sup>                   | Costa Rica <sup>*i</sup>                | Philippines <sup>*i</sup>               |
|                           | Mali*                                  | Cuba <sup>i</sup>                       | Romania                                 |
|                           | Mauritius <sup>i</sup>                 | Dominica <sup>i</sup>                   | Samoa                                   |
|                           | Mozambique <sup>*i</sup>               | Dominican Republic <sup>*i</sup>        | Sri Lanka <sup>*i</sup>                 |
|                           | Rwanda <sup>*i</sup>                   | Ecuador <sup>*i</sup>                   | St. Lucia <sup>*i</sup>                 |
|                           | <i>São Tomé and Príncipe</i>           | Egypt, Arab Rep. <sup>*i</sup>          | Vincent and the Grenadines <sup>i</sup> |
|                           | Senegal <sup>*i</sup>                  | El Salvador <sup>i</sup>                | Suriname <sup>*i</sup>                  |
|                           | Seychelles <sup>i</sup>                | Fiji <sup>*i</sup>                      | Tajikistan <sup>i</sup>                 |
|                           | <i>Somalia</i>                         | Georgia                                 | Thailand <sup>*i</sup>                  |
|                           | South Africa <sup>*i</sup>             | Grenada                                 | Tonga <sup>i</sup>                      |
|                           | Swaziland <sup>*i</sup>                | Guyana <sup>*i</sup>                    | Tunisia <sup>*i</sup>                   |
|                           | Tanzania <sup>i</sup>                  | Honduras <sup>*i</sup>                  | Turkey <sup>*i</sup>                    |
|                           | Togo <sup>*i</sup>                     | Hungary*                                | Turkmenistan                            |
|                           | Uganda <sup>*i</sup>                   | India <sup>*i</sup>                     | Ukraine                                 |
|                           | Zimbabwe                               | Indonesia <sup>*i</sup>                 | Uzbekistan                              |
|                           |  | Jamaica                                 | Vietnam <sup>i</sup>                    |
|                           |  | Jordan <sup>i</sup>                     | West Bank and Gaza                      |
|                           |  | Kazakhstan                              |   |

<sup>+</sup>Subset of the 92 developing countries outside of Sub-Saharan Africa that were used throughout the report

Countries in *italics* do not have data for sectoral shares (agriculture, industry, and services) for all the years between 1990 and 2011 and are not included in the analysis.

<sup>i</sup> Countries with data available on sectoral shares (agriculture, industry, and services) and where industry can be decomposed into manufacturing and other industry.

\*Countries included in the regressions.



## References

Barrett, Reardon, and Webb. 2001. "Nonfarm Income Diversification and Household Livelihood Strategies in Rural Africa: Concepts, Dynamics and Policy Implications." *Food Policy*, 26, No. 4. <http://ssrn.com/abstract=1847711>

Christiaensen, Luc, and Jonathan Kaminski. 2014. "Structural Change, Economic Growth and Poverty Reduction, Micro Evidence From Uganda." World Bank, Washington, DC. Unpublished.

Christiaensen, Luc, Lionel Demery, and Jesper Kuhl. 2010. *The (Evolving) Role of Agriculture in Poverty Reduction: An Empirical Perspective*. WIDER Working Paper 2010/36, UNU-WIDER, Helsinki.

Christiaensen, Luc, Punam Chuhan-Pole, and Aly Sanoh. 2013. *Africa's Growth, Poverty and Inequality Nexus – Fostering Shared Prosperity*. Washington, DC: World Bank.

Cingranelli, David L., and David L. Richards. 2010. The Cingranelli-Richards Human Rights Dataset. <http://www.humanrightsdata.org>.

de Brauw, and Mueller. 2014. "The Role of Rural-Urban Migration in the Structural Transformation of Sub-Saharan Africa." *World Development* 63: 33-42. Elsevier B.V.

de Vries, Gaaitzen J., Abdul A. Erumban, Marcel P. Timmer, Ilya Voskoboinikov, and Harry X. Wu. 2012. "Deconstructing the BRICs: Structural Transformation and Aggregate Productivity Growth." *Journal of Comparative Economics* 40 (2): 211-27. Association for Comparative Economic Studies.

Diao, Xinshen, James Thurlow, and Shenggen Fan, eds. 2012. *Strategies and Priorities for African Agriculture: Economywide Perspectives from Country Studies*. International Food Policy Research Institute, Washington, DC.

Dustmann, C., and A. Okatenko. 2014. "Out-migration, Wealth Constraints, and the Quality of Local Amenities." *Journal of Development Economics* 110: 52–63.

Ferre, C., F. Ferreira, and P. Lanjouw. 2012. "Is There a Metropolitan Bias? The Relationship between Poverty and City Size in a Selection of Developing Countries." *World Bank Economic Review* 26 (3): 351–82.

Ferreira, Francisco H. G., Phillippe G. Leite, and Martin Ravallion. 2010. "Poverty Reduction without Economic Growth?" *Journal of Development Economics* 93 (1): 20–36. Elsevier B.V.

Filmer, Deon, and Louise Fox. 2013. *Youth Employment in Sub-Saharan Africa Youth Employment*. Washington, DC: World Bank.

Gelbard, E., M. Hussain, R. Maino, Y. Mu, and E. Yehoue. 2014. *Islamic Finance in Sub-Saharan Africa: Status and Prospects*. Washington, DC: International Monetary Fund.

Ghani, Ejaz, Arti Grover Goswami, and Homi Kharas. 2012. "Service with a Smile." World Bank, Washington, DC.

Gollin, D. 2014. "The Lewis Model: A 60-Year Retrospective." *Journal of Economic Perspectives* 28 (3): 71–88.

Gollin, D., D. Lagakos, M. Waugh. 2014. "The Agricultural Productivity Gap." *The Quarterly Journal of Economics*. 2014: 939–93.

Gollin, D., S. Parente, and R. Rogerson. 2002. "The Role of Agriculture in Development." *American Economic Review Papers and Proceedings* 92.

Hausmann, Ricardo, and César A. Hidalgo. 2011. "The Network Structure of Economic Output." *Journal of Economic Growth* 16 (4): 309–42. doi:10.1007/s10887-011-9071-4.

Hill, Ruth Vargas, and Eyasu Tsehay. 2014. "Growth, Safety Nets and Poverty: Assessing Progress in Ethiopia from 1996 to 2011." Background paper for the Ethiopia Poverty Assessment, World Bank, Washington, DC.

Imai, K., R. Gaiha, and A. Garbero. 2014. "Poverty Reduction during the Rural-Urban Transformation: Rural Development Is Still More Important than Urbanization?" Brooks World Poverty Institute Working Paper 204, Brooks World Poverty Institute, The University of Manchester, Manchester, England.

IMF (International Monetary Fund). 2014. "Sustaining Long-run Growth and Macroeconomic Stability in Low-income Countries—The Role of Structural Transformation and Diversification." IMF Policy Paper, International Monetary Fund, Washington, DC, March 5.

I2D2 (International Income and Distribution Database). 2014. World Bank, Washington, DC.

Jolliffe, D., G. Oseni, I. Seff, A. Ambel, J. Kowalski, A. Lipcan, K. McIntosh, R. Smida, and S. Sørensen. 2014. "Nonfarm Enterprises in Rural Ethiopia: Improving Livelihoods by Generating Income and Smoothing Consumption." Background Paper prepared for the Ethiopia Poverty Assessment, World Bank, Washington, DC.

Loayza, Norman V., and Claudio Raddatz. 2010. "The Composition of Growth Matters for Poverty Alleviation." *Journal of Development Economics* 93 (1): 137–51. Elsevier B.V.

Manski, C. F. 1990. "The Use of Intentions Data to Predict Behavior: A Best-case Analysis." *Journal of the American Statistical Association* 85 (412): 934–40.

McMillan, Margaret S., and Dani Rodrik. 2011. "Globalization, Structural Change and Productivity Growth." NBER Working Paper 17143, National Bureau of Economic Research, Cambridge, MA, June. <http://www.nber.org/papers/w17143>.

McMillan, Margaret S., and Kenneth Harttgen. 2014. "What is Driving the African Growth Miracle?" NBER Working Paper 20077, National Bureau of Economic Research, Cambridge, MA.

McMillan, Margaret S., Dani Rodrik, and Íñigo Verduzco-Gallo. 2013. "Globalization, Structural Change, and Productivity Growth, with an Update on Africa." *World Development* 63: (November): 11–32. DOI: 10.1016/j.worlddev.2013.10.012

Montalvo, Jose G., and Martin Ravallion. 2010. "The Pattern of Growth and Poverty Reduction in China." *Journal of Comparative Economics* 38 (1): 2–16. Association for Comparative Economic Studies.

Nagler, P., and W. Naude. 2014. "Nonfarm Enterprises in Rural Africa – New Empirical Evidence." World Bank, Washington, DC. Unpublished.

Nunn, Nathan, and Diego Puga. 2012. "Ruggedness: The Blessing of Bad Geography in Africa." *Review of Economics and Statistics* 94: 20–36.

PovcalNet. 2014. World Bank, Washington, DC.

Ravallion, Martin. 2004. "Pro-Poor Growth : A Primer" Policy Research Working Paper, World Bank, Washington, DC.

———. 2010. "A Comparative Perspective on Poverty Reduction in Brazil, China, and India." *The World Bank Research Observer* 26: 71–104.

Ravallion, Martin, and Gaurav Datt. 1996. "How Important to India's Poor Is the Sectoral Composition of Economic Growth?" *The World Bank Economic Review* 10 (1): 1–25.

Ravallion, Martin, and Shaohua Chen. 2007. "China's (uneven) Progress against Poverty." *Journal of Development Economics* 82 (1): 1–42.

Rodrik, Dani. 2014. "An African Growth Miracle?" NBER Working Paper 20188, National Bureau of Economic Research, Cambridge, MA, June. <http://www.nber.org/papers/w20188.pdf>.

WHO and UNICEF (World Health Organization and United Nations Children's Fund). 2013. *Progress on Sanitation and Drinking Water – 2013 Update*. Geneva: World Health Organization and UNICEF. [http://www.unicef.org/wash/files/JMP2013final\\_en.pdf](http://www.unicef.org/wash/files/JMP2013final_en.pdf).

WITS (World Integrated Trade Solution). 2014. Washington, DC: World Bank. <http://data.worldbank.org/data-catalog/wits>.

World Bank. 2000. *World Development Report 2000/2001: Attacking Poverty*. Washington, DC: World Bank.

———. 2007. *World Development Report 2008: Agriculture for Development*. Washington, DC: World Bank.

———. 2008. *World Development Report 2009: Reshaping Economic Geography*. Washington, DC: World Bank.

———. 2012. *World Development Report 2012: Gender Equality and Development*. Washington, DC: World Bank.

———. 2014. "Rwanda Poverty Assessment." Washington, DC: World Bank. Forthcoming

———. 2014. "The Economic Impact of the 2014 Ebola Epidemic: Short and Medium Term Estimates for West Africa." World Bank, Washington, DC, September.

———. 2014a. *Global Monitoring Report, 2014: Ending Poverty and Sharing Prosperity*. Washington DC: World Bank.

———. 2014b. World Development Indicators. Washington, DC: World Bank. <http://data.worldbank.org/products/wdi>.





