

SPECIAL FEATURE 2

AFTER THE COMMODITIES  
BOOM—WHAT NEXT FOR  
LOW-INCOME COUNTRIES?



*Growth in low-income countries has accelerated significantly since the early 2000s to its fastest pace in several decades. For commodity exporters, the improvement has been underpinned by rising global commodity prices and a surge in resource exploration and investment. The first section of this Special Feature explores the role of the commodity boom over the past decade in metal and mineral exporting low-income countries, and analyzes what the recent decline in commodity prices may imply for growth in these economies. The second part takes a look at recent economic developments and prospects for near-term growth in low-income countries. In non-commodity exporting countries, growth will continue to benefit from strong domestic demand. For commodity exporters, however, the medium-term outlook has become increasingly challenging as the importance of the natural resource sector in driving growth diminishes. The ability of these economies to navigate the headwinds will hinge on how well they have invested the dividends from the past commodity boom, and on the successes of structural reforms in supporting other sources of growth.*

## A. Implications of the Recent Decline in Commodity Prices for Commodity-Exporting Low-Income Countries

Economic activity in low-income countries (LICs) began to surge in the early 2000s.<sup>1</sup> Investment- and export-driven growth averaged 6.2 percent per year during 2000-14, double the pace of the previous three decades (Figure SF2.1). Among metal and mineral exporting LICs (which account for almost two-thirds of current LICs), the improvement was even more marked, with growth quadrupling during the 2000s compared with the previous decade.<sup>2</sup>

A number of factors contributed to the improvement, including better policy environments, a decrease in conflicts, and improvements in macroeco-

nomics stability. However, for many of today's LICs located in Sub-Saharan Africa and some in Central and South Asia (Myanmar and Tajikistan), rapid growth was driven by rising commodity prices and rising demand from China (World Bank 2015a).

In addition rising commodity prices also spurred investment in commodity exploration and production. Between 2000 and 2012, investment spending by global oil, gas, and base-metal mining companies rose five-fold to record highs. Counting investment in other mined products, total investment in 2011-12 amounted to over \$1 trillion.<sup>3</sup> In Africa, which is home to most commodity-exporting LICs, mining investment alone amounted to \$100 billion in 2011.<sup>4</sup> Less is known about the scale of investment that flowed into agriculture, but private sector investment increased in agribusiness, in the development of value chains, and in farmland in Africa (FAO 2012). An estimate of foreign direct investment in agriculture and agribusiness in developing countries for 2006/07 suggests that it was a small fraction of that in mining.<sup>5</sup> For reasons of data availability, the focus in this Feature is on the role of energy and mining booms in the LICs.

The authors of this Special Feature are Tehmina S. Khan (Section A) and Gerard Kambou (Section B).

<sup>1</sup>As of 1 July 2014, low-income economies are defined as those with a gross national income (GNI) per capita, calculated using the World Bank Atlas method, of \$1,045 or less in 2013; between \$1,045 but less than \$12,746 for middle income; and \$12,746 or more for high income. Countries currently defined as low-income include Afghanistan, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic People's Republic of Korea, Democratic Republic of Congo, Eritrea, Ethiopia, The Gambia, Guinea, Guinea-Bissau, Haiti, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sierra Leone, Somalia, Tajikistan, Tanzania, Togo, Uganda, and Zimbabwe.

<sup>2</sup>The definition of current metal and mineral commodity exporting low-income countries is based on that in World Bank (2015a), which defines these as countries where commodities comprise more than a quarter of total exports. These include for mining exporters Benin, Burkina Faso, Eritrea, Guinea, Liberia, Mali, Niger, Sierra Leone, Somalia and Zimbabwe; and for oil and gas exporters Chad, Myanmar, and the Democratic Republic of Congo. Countries that have recently started or are expected to start producing over the medium term due to recent discoveries include Kenya, Madagascar, Mozambique, Tanzania, and Uganda.

<sup>3</sup>Exploration and production spending by oil and gas companies quintupled to \$500 billion in 2012. Investment in base metal mining rose by a similar magnitude to reach \$120 billion in 2012. If investments in other mined products, such as coal, iron ore, precious metals, diamonds, and uranium is included, total mining investment is much larger. Figures are not available for 2012, but total mining investment (base and other metals) is estimated at \$676 billion in 2011 (ICMM 2012).

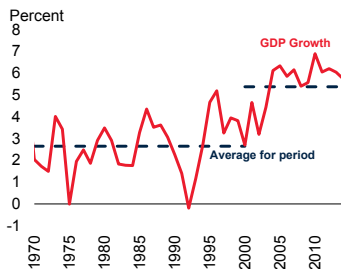
<sup>4</sup>This amounts to 15 percent of global mining investment. The figure includes North Africa, so actual investments in LIC countries in Sub-Saharan Africa are much lower. See ICMM Report (2012).

<sup>5</sup>Total foreign direct investment in agriculture and agribusiness in developing countries was estimated at \$13 billion in 2006/07, with Africa receiving \$1 billion (World Bank 2013).

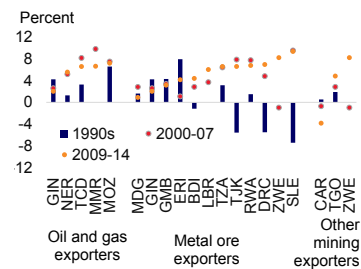
**FIGURE SF2.1 Growth in low-income countries**

Growth in low-income countries doubled during the 2000s, compared with the average for the previous three decades. For many, particularly those in Sub-Saharan Africa, faster growth was underpinned by a sharp increase in global commodity prices, a boon for commodity exporters.

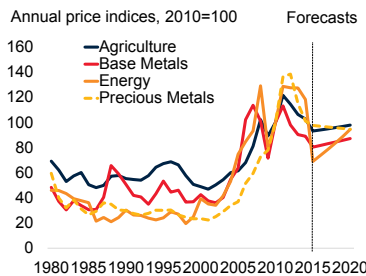
**A. LICs: GDP growth**



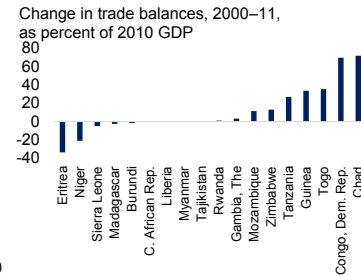
**B. Commodity-exporting LICs: Growth**



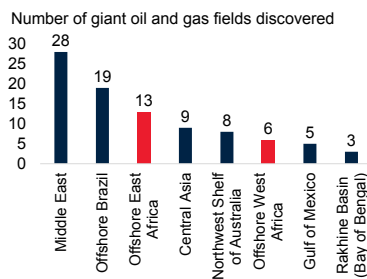
**C. Global commodity prices**



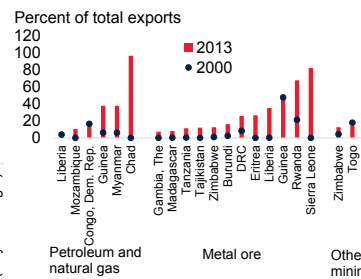
**D. Commodity-exporting LICs: Terms of trade effect on GDP**



**E. "Giant" oil and gas discoveries: Major clusters, 2000-09<sup>a</sup>**



**F. LICs: oil and gas and mining exports**



Source: World Bank, World Development Indicators.  
E. "Giant" fields are conventional fields with recoverable reserves of 500 million barrels of oil equivalent or more (Bai and Xu, 2014).

The growing importance of the natural resource sector was reflected in a rising share of exports compared to a decade earlier. Oil and gas exports accounted for a much larger share of exports (more than 10 percent) in five LICs; metal ore exports in nine LICs; and other mining exports in two LICs.

For several LICs, the 2000s also marked a decade of discoveries, with several major finds that trans-

formed country prospects. For instance, since 2000, 120 "giant" oil and gas fields have been discovered world-wide, located in seven clusters.<sup>6</sup> Two of these clusters are in Africa, mostly offshore East and West Africa. In Tanzania alone there have been 13 giant oil and gas discoveries (alongside other major finds in Kenya, Madagascar, Mozambique, Uganda), and six in West Africa in the Gulf of Guinea. Another major frontier for giant oil and gas fields has emerged in the Krishna and Rakhine basins in the Bay of Bengal in South Asia (Bai and Xu 2014, Basu et al. 2010; Figure SF2.2).<sup>7</sup>

This section takes a closer look at the role of the commodities boom in spurring faster growth in LICs over the past decade and a half, with a particular focus on current and prospective metal and mineral commodity exporting countries. Specifically it asks the following questions:

- Why did commodity exploration and investment surge in LICs in the 2000s?
- What was the impact on metal and mineral commodity exporting LICs?
- What are the implications of the recent fall in commodity prices?

**Why did commodity exploration and investment surge in LICs in the 2000s?**

The surge in investment and exploration in commodities in Africa was sparked by rising commodity prices and demand, changes in industry structure and funding, and a global shift in the location of mining toward to developing countries. These external tailwinds were coupled with better domestic policies at home, which made investment and exploration more attractive (Arbache and Page 2009).

**Higher commodity prices.** Starting in the early 2000s, rising commodity demand underpinned a synchronized increase in prices of all major commodity groups. Between 2000 and 2010, base metal and energy prices rose by more than 160 percent,

<sup>6</sup>"Giant" fields are conventional fields with recoverable reserves of 500 million barrels of oil equivalent or more. Despite the increasing importance of unconventional shale oil and gas fields, current and future oil and gas supply is dominated by conventional giant fields (Bai and Xu 2014).

<sup>7</sup>The 120 giant fields discovered since 2000 are estimated to hold "proved plus probable" reserves of 248.62 billion barrels of oil equivalent. Tanzania in East Africa alone accounts for 6.8 percent of these reserves (Bai and Xu 2014).

precious metal prices by over 300 percent, and prices of agricultural and other raw materials commodities increased by 103 and 43 percent, respectively (Figure SF2.1C).

The boom, which came after a long period of weak or declining prices and cost-cutting in the mining industry, increased returns in the mining and oil and gas industries.<sup>8</sup> This stimulated a steep increase in industry spending on mining and production investments (Figure SF2.2). Global mining exploration expenditures also rose to an all-time high, more than ten-fold 2000 levels. Out of this, mining exploration spending for Africa rose fifteen-fold to reach 15 percent of global exploration spending.<sup>9</sup>

Higher prices increased the profitability of investments in poorly accessible or high production-cost environments.<sup>10</sup> In Uganda, for instance, oil discoveries of a commercial scale were first made in 2006. As a landlocked country, Uganda's oil is difficult to access and challenging to process and transport.<sup>11</sup> Nevertheless, exploration investments and well appraisals went ahead, lifting the value of estimated oil reserves from initial estimates of less than 500 million barrels to 3.5 billion barrels in 2014 (US EIA 2014).

**New sources of funding.** Global mining and oil and gas production has been dominated by large transnational companies; however, the structure of the industry has changed over the past decade. Junior companies have emerged as risk takers at the forefront of exploration, whereas larger developers and operators have entered projects after the discovery of

<sup>8</sup>Average annual returns for the top ten global mining companies are estimated to have risen from \$3 billion in 2005 to just under \$8 billion in 2010 (UNECA 2011). Returns in the oil and gas sector are even larger, since country conditions matter less, transportation (including in unprocessed form) is easier, and the sector is less dependent on the sometimes unreliable infrastructure such as roads, railways and power stations (UNECA 2013).

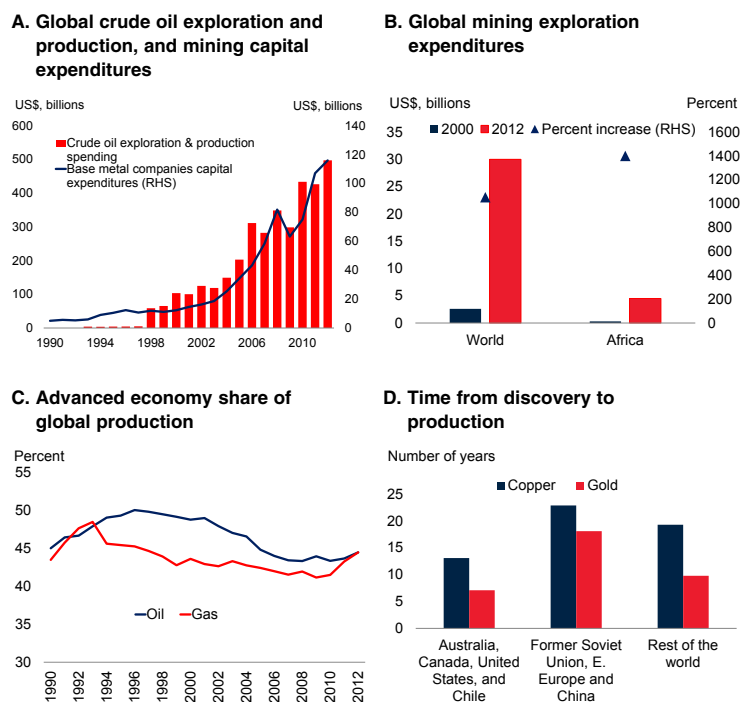
<sup>9</sup>Mining exploration expenditures in Africa rose to an estimated \$4.5 billion in 2012, up from just \$0.3 billion in 2000 (UNECA 2011; Schodde 2014).

<sup>10</sup>In addition to lower production cost, tax burdens have also been lower. The share of resource profits accruing to mining companies (rather than governments) in Africa is estimated to have been much larger than in other regions. This reflects the relatively limited (or recently initiated) government participation in mining and the general absence of special resource profits taxes (UNECA 2011).

<sup>11</sup>Uganda's oil is of waxy constituency and needs heavy refining before further use (Gelb, Kaiser, and Vinuela 2012).

## FIGURE SF2.2 Trends in commodity prices, exploration and discovery

The commodity price rise also triggered a surge in global spending on mining exploration and capital expenditures on oil and gas exploration and production, which rose to historical highs. With exploration spending increasing in low income countries, several have emerged as major frontiers for metal and oil and gas discoveries, with significant finds in (offshore) East and West Africa and the Bay of Bengal. Globally, lead times from discovery to production in mining are higher in developing than in advanced countries.



Source: World Bank, World Development Indicators, Bloomberg, MinEx Consulting, Bai and Xu (2014), IEA, Basu et al. (2010)

deposits (UNECA 2011; Gelb, Kaiser and Vinuela 2012).<sup>12</sup> Spending by junior companies is primarily driven by the availability of funding and they are likely to have benefited from easy global financing conditions in recent years (Schodde 2013).

In addition, China has emerged as a major source of exploration and development finance in Africa, broadening choices for governments in the region (Box 2.1). In Eritrea for instance, a \$60 million loan in 2007 from China's Import-Export Bank was critical for an investment agreement (and financing for a 30 percent investment stake) with the Canadian mining operator developing the Bisha mine.<sup>13</sup>

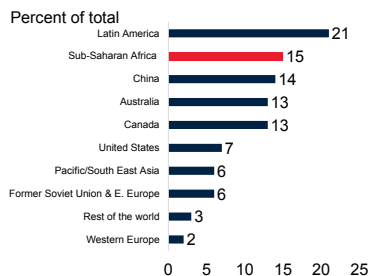
<sup>12</sup>The share of global mining output of the largest ten companies amounts to over a third of the total (Raw Materials Group, cited from UNECA 2011).

<sup>13</sup>Mukumbira, R. (2007). "Eritrea signs Bisha gold/base metals mining agreement with Nevsun." Published on Mineweb. <http://www>

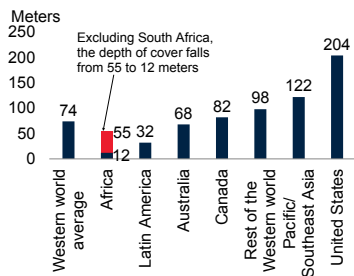
## FIGURE SF2.3 Commodity exploration, spending and discoveries in Africa

Africa has attracted a significant share of mining exploration investments reflecting the fact that it is still a relatively unexplored region, with discoveries occurring close to the surface. In addition, decreasing conflict and improving low-income country policy environments improved the investment climate.

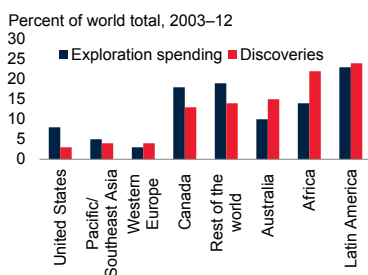
### A. Global mining exploration expenditures by region, 2012



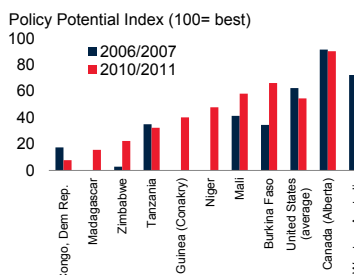
### B. Average depth of cover for discoveries, 2012



### C. Mineral exploration spending and discoveries, 2003-12



### D. Policy potential index



Source: World Bank, MinEx Consulting, Fraser Institute Annual Survey of Mining Companies (2011).

A. B. C. "Rest of World" includes Middle East, South West Asia (including India and Pakistan) and Mongolia.

D. The Policy Potential index is a composite index, ranging from 1 (worst) to 100 (best) that measures the effects on exploration of government policies, including uncertainty regarding administration, interpretation and enforcement of existing regulations, environmental regulations, taxation, infrastructure, socioeconomic agreements, political stability, labor issues, geological database and security (Fraser Institute, 2011).

**Secular shift of global production to developing countries.** Higher commodity prices reinforced longer-term global trends underway since the 1980s. Easily accessible mineral and oil and gas deposits in the United States and Europe have shrunk. Technological innovations have allowed extraction in previously inaccessible or less-developed regions (including deep-water). The development of large bulk shipping carriers has facilitated the transportation of bulk commodities such as iron-ore coal and bauxite (ICMM 2012; Lusty and Gunn 2015). As a result, the location of production and exploration has in-

creasingly shifted from advanced countries towards developing countries, notably frontier regions such as Africa and the Arctic (ICMM 2012).

In mining, exploration in Sub-Saharan Africa was particularly attractive because of the region's relatively unexplored potential and low cost. The value of known sub-soil assets per square kilometer in the region is estimated to be barely a quarter of that in advanced economies (World Bank 2006, 2010). The cost of exploration was lower than elsewhere, in part because African discoveries are occurring closer to the surface than anywhere else except Latin America (Figure SF2.3). Africa had the largest discoveries per dollar of exploration cost during 2003–12: it accounted for 22 percent of discoveries but only 15 percent of global exploration expenditures (Schodde 2013).

**Improved investment climate.** The improvement in the business climate was underpinned by several factors.

- An easing of conflict or internal political tensions (Central African Republic, Democratic Republic of Congo, Eritrea, Myanmar, and Rwanda) provided greater political stability.
- Debt relief eased fiscal deficits and reduced debt burdens (World Bank 2015b; IMF 2014a).
- Economies also grew healthier, with increased growth and declining inflation, helped by improvements in policy (Eritrea, Myanmar, Rwanda).

The improvement in the business climate in several metal and mineral exporting countries is reflected in mining company assessments of how government policies affect exploration investment (Fraser Institute 2011).

Anecdotal evidence suggests that where policy makers have been keen to develop their mineral resources, lead times between discovery and production have been shorter than in countries with less-conducive policy environments.<sup>14</sup> A few examples, of both shorter and longer lead times, illustrate this point.

- *Eritrea: eight years from discovery to production.* Following the end of a border conflict with Ethiopia in 2000, gold and base metal deposits

[mineweb.com/archive/eritrea-signs-bisha-goldbase-metals-mining-agreement-with-nevsun/](http://mineweb.com/archive/eritrea-signs-bisha-goldbase-metals-mining-agreement-with-nevsun/)

<sup>14</sup>In general, the lead time between discovery and production in mining tends to be long (e.g. up to 10 years for gold and 17 years for copper), especially in developing countries (Schodde 2013).

were discovered at Bisha in 2003. Mine construction began in 2008 and was completed by 2010. Gold production started in 2011, transitioning to commercial copper production in 2013 (Economist Intelligence Unit 2013).

- Myanmar: two years from new law to active exploration.** Following the settlement of a maritime boundary dispute with Bangladesh in 2012, Myanmar reformed its foreign direct investment law and provided greater revenue incentives for international company investments in 2012. It has since issued oil and gas exploration licenses for 20 blocks in the Rakhine Basin in 2014, where giant gas discovery was first made in 2002. Bangladesh, in contrast, has been significantly slower in inviting exploration bids, with only five offshore blocks allocated for exploration in 2014.
- Uganda: at least a decade from discovery to production.** In Uganda, internal disputes over taxes and the viability of building a refinery for oil reserves discovered in 2006 have significantly delayed the award of production licenses and, consequently, production.<sup>15</sup> Production start dates have been pushed from 2016, as initially planned, to 2018, or later.
- Guinea: at least two decades from exploration to production.** Simandou, a remote mountainous area in Guinea, is the world's largest known untapped deposit of high-grade iron-ore, with an estimated mine life of 40 years.<sup>16</sup> Exploration rights were first granted in 1997 to Rio Tinto. However, with the mine subject to protracted international legal disputes since 2008, production is not expected to start until at least 2019.<sup>17</sup>

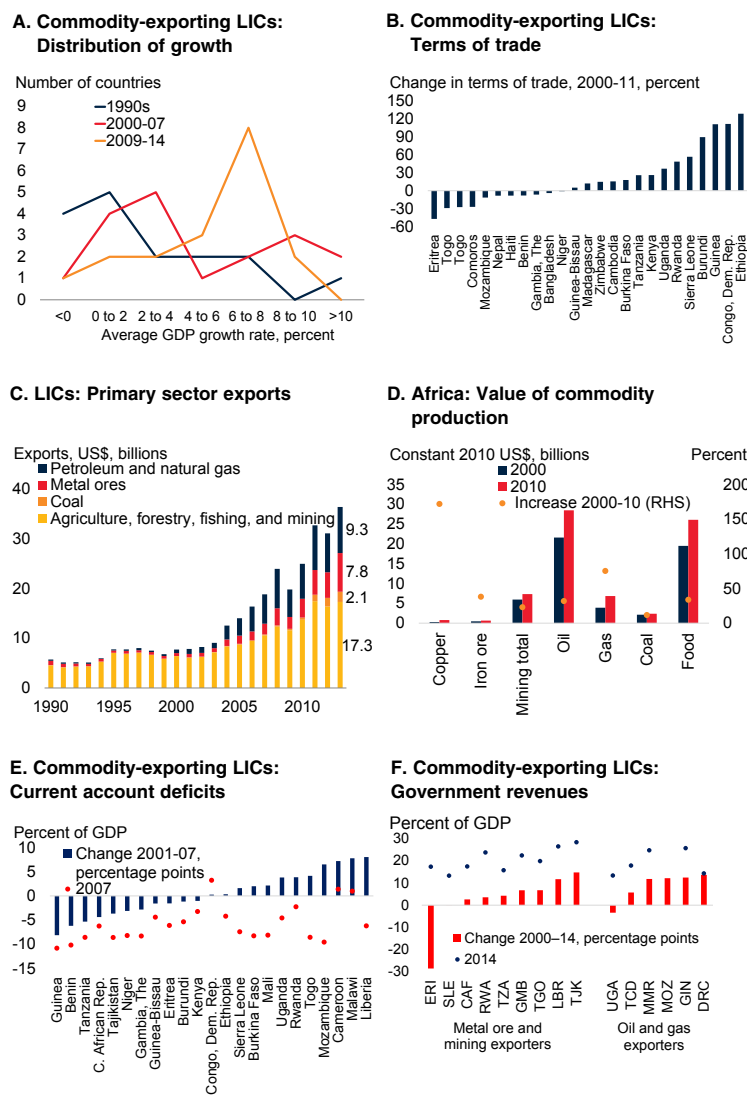
<sup>15</sup><http://www.independent.co.uk/cover-story/9694-uganda-oil-now-for-2020>

<sup>16</sup>Project development costs are estimated at \$20-\$30 billion, including rail lines needed to provide port access.

<sup>17</sup>These started with the government decision in 2008 to revoke Rio Tinto's rights to mine half of the blocks it had been awarded, assigning them instead to another company, which in turn sold a portion on to Vale, another international miner. Rio Tinto had to pay \$700 million in 2011 to secure the remainder of its concession. Although a new government is investigating the award of past contracts, the ongoing legal dispute has continued to delay production.

### FIGURE SF2.4 Impact on growth, production, and exports

The acceleration in growth in commodity exporting low income countries has been broad based. The large positive terms of trade shock between 2000 and 2011 was reflected in surging exports and a significant increase in the production of commodities. With imports also rising, partly reflecting mine development capital goods, current account deficits widened in some countries. Rising commodity sector revenues boosted public sector receipts.



Source: World Bank, Comtrade, UNECA (2013).

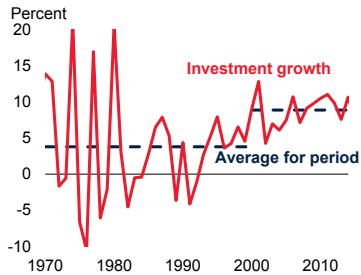
### What was the impact of the boom on metal and mineral commodity exporting LIC economies?

The commodity boom boosted investment and exports, and resulted in a broad-based improvement in growth. Rising revenues from the commodity sector meanwhile enabled increases in growth-enhancing government investment (Figure SF2.4). This led to increased employment and incomes,

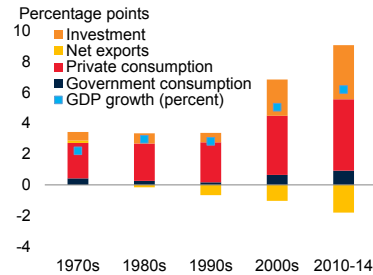
## FIGURE SF2.5 Impact on investment

Investment growth accelerated significantly in LICs relative to previous decades, reflected in a rising share of GDP. In some resource rich countries, cumulative mining investments between 2000 and 2011 amounted to over 20 percent of GDP.

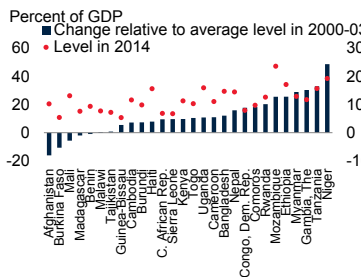
### A. LICs: Investment growth



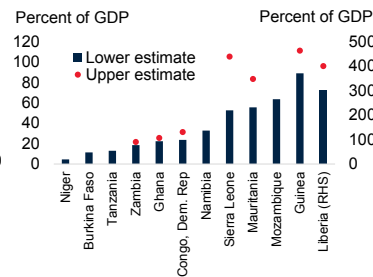
### B. LICs: Contribution to GDP growth



### C. LICs: Investment, 2014

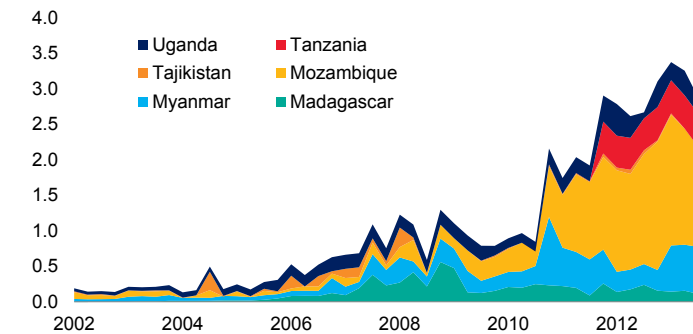


### D. Cumulative investments in mining, 2000–11



### E. Selected metal and mineral exporting countries: FDI inflows

Quarterly FDI inflows, US\$, billions



Source: WDI, McMahon and Moreira (2012), World Bank, IFS.  
D. Comprises investment in both mining construction and exploration.

which encouraged consumption spending. However, on the negative side, it tended to cause an appreciation of real exchange rate, and hence a loss of competitiveness for non-resource based activity (the Dutch Disease syndrome).

**Terms of trade:** A marked improvement occurred in the terms of trade of commodity exporters, with implied improvements in trade balances estimated at over 50 percent of GDP in some countries (Figure SF2.1.D). The expansionary growth impacts from commodity based terms-of trade shocks is well doc-

umented, including for Africa (Deaton and Miller 1996, Awel 2012, Raddatz 2007).<sup>18</sup> Model simulations of a 10 percent shock to commodity prices result in an approximately 1 percent increase in GDP per capita in Africa (Raddatz 2007). Overall growth impacts from terms-of-trade improvements and increasing commodity exports to China have also proven to be significant in a number of commodity-producing countries in Africa (Busse et al. 2014).

**Output and exports:** Between 2000 and 2010, commodity production in Africa increased by about one-quarter, albeit with considerable variation across different metals and hydrocarbons (UNECA 2013). Separate data is not available for global LIC output; however exports can be used as a proxy for production given the limited domestic use. Metal and hydrocarbon exports of LICs rose fifteen-fold during 2000–13 (Figure SF2.5); and the contribution of exports to growth doubled over this period.

**Investment.** Investment growth accelerated sharply (Figure SF2.5), with its contribution to growth rising from less than one-fifth in the 1990s to over one-half over the past decade. Mining investment was particularly substantial in 2000–11 in several LICs; cumulative spending over this period amounted to more than 20 percent of 2010 GDP in the Democratic Republic of Congo, Sierra Leone, Mozambique, and Guinea (McMahon and Tracy 2012), in some countries reflecting substantial FDI inflows. Rising revenues from the mineral sector also lifted public investment spending, especially spending on energy and transport infrastructure for accessing export markets (IMF 2014a, 2014b).

**Jobs and consumption and gains in poverty reduction.** Although natural resource sectors tend to be capital intensive, the rapid growth of mining activity—more so than oil and gas—has been an important source of job creation. For instance, greenfield FDI into natural resource sectors in Africa overall created some 600,000 jobs between 2003 and 2012, of which 400,000 were in mining. For every million U.S. dollars of investment, the mining sector is estimated to have generated three jobs – about ten times as many in the oil and gas sector (UNECA 2013). The opening of new mines

<sup>18</sup>For example, see Go et al. (2013); Izquierdo, Romero and Talvi (2008); De Gregorio and Labbé (2011); Céspedes and Velasco (2012) and Cavalcanti et al. (2015)



has brought structural shifts in local employment, raising employment and non-seasonal work opportunities for women that tend to last beyond the life of the mine (Kotsadam and Tolonen 2015). In addition, for every mining job, there 0.5 to 3 additional jobs in supporting activities; (McMahon and Tracy 2012; McMahon and Remy 2001; Kapstein and Kim 2011).

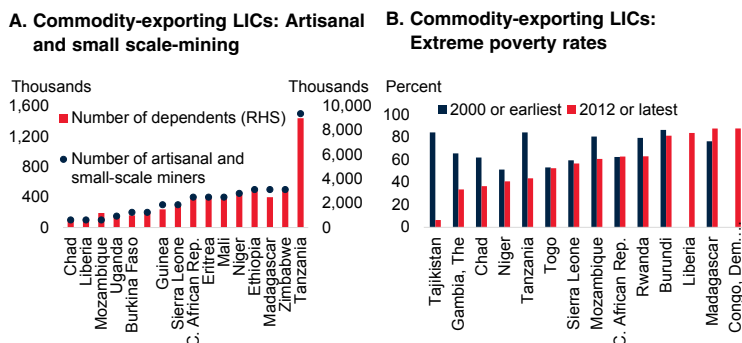
It should also be noted that mining activity in many Sub-Saharan LICs includes wide-spread direct local employment by artisanal and small-scale mining operations, as well those of international corporations (Figure SF2.6, UNECA 2011). This has helped support incomes, private consumption and welfare in the area. For instance, the opening of a new large-scale mine is found to changes economic outcomes, such as access to employment and cash earning, with evidence pointing to increased household expenditure on housing and energy, and lower infant mortality (Chuhan-Pole et al. 2014). That said, although sustained growth and rising demand for non-tradable services have contributed to a decline in poverty rates, at 43 percent, the average poverty headcount in resource exporters remains high (Figure SF2.6).

**Real exchange rate appreciation and Dutch Disease.** In oil-exporting LICs in the CFA franc zone, rapid growth of natural resource sectors has been associated with real appreciations, and weakened competitiveness of other tradables activity (Trevino 2011). For example, real exchange rate appreciation in African economies associated with rising exports to and investment flows from China, may have hampered industrial diversification (Guillaumont Jeanneney and Hua 2015) and buoyed activity in non-tradable services sectors. In several African commodity-exporting countries, services sector growth is stronger than in countries with similar per capita income levels (Timmer et. al. 2012).

**Shrinkage of agriculture, growth of informal urban sectors.** Despite the expansion of extractive industries, agriculture still employs the majority of workers in commodity-exporting low income countries. Although there has been a significant shift out of agriculture, exiting workers have been mainly absorbed by informal and low productivity urban service sectors (McMillan and Harttgen 2014).

**FIGURE SF2.6 Employment and poverty**

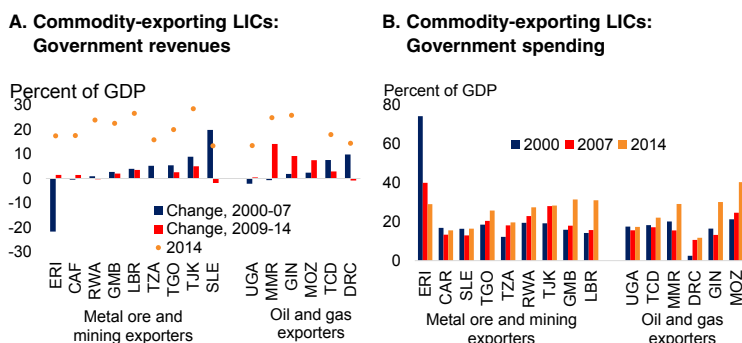
Widespread artisanal and small scale mining in Sub-Saharan Africa is likely to have helped support private consumption. Poverty rates have fallen in commodity-exporting LICs, but overall rates remain extremely high.



Source: UNECA (2011), World Development Indicators  
 B. Extreme poverty rates are the share of the population living on \$1.25 or less per day (PPP-adjusted, 2005 U.S. dollars).

**FIGURE SF2.7 Public sector receipts and spending**

Government revenues in commodity exporting LICs have been bolstered by rising receipts from the mineral sector. Prior to the global financial crisis, most countries appeared to have contained spending pressures. Since then however, spending has increased significantly as a share of GDP in some countries.



Source: World Bank, IMF.

**Cyclicality of fiscal policies.** Compared with earlier commodity price booms, macroeconomic policies in Sub-Saharan Africa were less procyclical, during much of the 2000s (World Bank 2009). Whereas during the commodities boom in the 1980s, government expenditure growth in countries dependent on primary commodities outpaced GDP growth, between 2000 and 2007 it was broadly in line or even significantly less (Eritrea, Guinea, Mozambique, Sierra Leone; Figure SF2.7). Since 2007 however, government spending has increased faster than GDP in some commodity exporters. In part this reflects fiscal stimulus employed

by some (Kenya, Tanzania and Uganda) in the aftermath of the global crisis and greater spending on growth-enhancing infrastructure spending.<sup>19</sup>

### What are the implications of the recent fall in commodity prices?

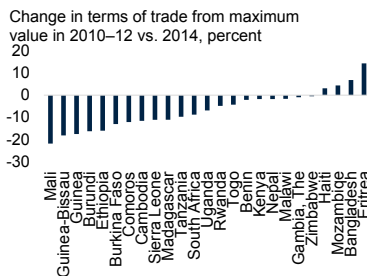
Given heavy dependence on commodities for export earnings and fiscal revenues, commodity exporting LICs are especially vulnerable to commodity price movements. Since their peak in February 2011, energy and metals prices have declined sharply (see Chapter 1). Prices of copper, iron ore, and oil have declined by 38–63 percent reflecting oversupplied markets and weaker global demand, including from China. The deterioration in the terms of trade since 2011 has been large (Figure SF2.8). Since 2014, the terms of trade decline in Chad has amounted to

<sup>19</sup>Kasekende et al. (2010).

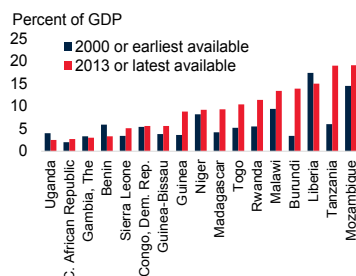
**FIGURE SF2.8 Commodity dependence: An Achilles heel**

The terms of trade shock since 2011 associated with the decline in commodity prices has been large. With a substantial share of fiscal revenues derived from the extractive sector, fiscal pressures have increased. The number of oil rigs has begun to decline, suggesting that oil and gas investment is beginning to slow. Manufacturing sectors remain small in most, suggestive of Dutch Disease effect.

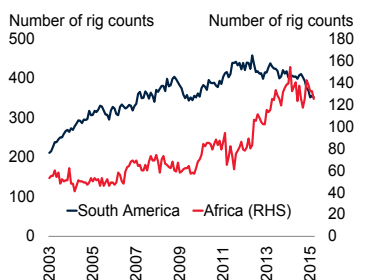
**A. Commodity exporting LICs: Terms of trade since 2012**



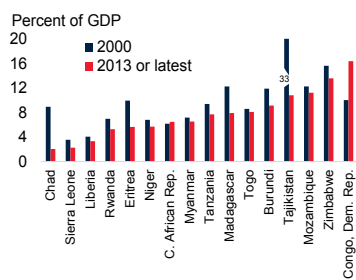
**B. Commodity exporting LICs: Growth-enhancing expenditures**



**C. Rig counts**



**D. Commodity exporting LICs: Size of manufacturing**



Source: World Bank, IMF (2013), Baker Hughes Incorporated, various Extractive Industries Transparency Initiative (EITI) reports

nearly 40 percent, and between 10–20 percent in the Democratic Republic of Congo, Guinea, Liberia and Sierra Leone (World Bank 2015a). This sets back growth, as export and commodity-related fiscal revenues fall.<sup>20</sup> These negative effects will be likely be reinforced by rising volatility in commodity terms of trade (Blattman et. al. 2007, Cavalcanti et al. 2012). Indications are that volatility in prices, particularly base metals and oil, is also increasing (World Bank 2015a, 2015d).

The fall in commodity prices complicates the task of macroeconomic management, as pressures on public sector balance sheets and exchange rates mount in several LICs at a time when growth is slowing (see following section). Although many commodity-exporting LICs have made progress in enhancing transparency in the resource sector—eleven are compliant with the Extractive Industries Transparency Initiative (EITI) standards—only nine have fiscal rules or stabilization funds in place to act as buffers to cope with adverse shocks (IMF 2013). Revenue dependence on the commodity sector, meanwhile, remains high. If governments are forced to scale back spending on social services and critical public infrastructure projects as resource-revenues fall, gains in poverty reduction could be lost, and prospects for future growth could be damaged by growing infrastructure deficiencies and bottlenecks.

Over the medium term, persistently low commodity prices may reduce the attractiveness of mining and oil and gas investment. Mining investment is highly cyclical and, after discovery, mining and energy projects typically require several years (and sometimes decades) to be developed to production. Since 1980, there have been four major “boom-and-bust” cycles in metal prices, with spending declining, on average, by 45 percent during the downturn. With the industry now entering what may be a fifth down-cycle (Schodde 2013) and given the signs of oversupply for some commodities (especially, oil and iron ore), companies may wait several years un-

<sup>20</sup>Separate research for Latin America and the Caribbean (LAC) region suggest that the average LAC economy will grow at a significantly slower pace even in a context of high but non-increasing commodity prices. More precisely, if prices were to remain stable at their 2013 average levels, average annual GDP growth over the medium term (2014–19) would be almost 1 percentage point lower than in 2012–13 and more than 1½ percentage points lower than over 2003–11. If commodity prices were to evolve as implied by commodity futures as of early 2014, average output growth would be even lower, by roughly another ¾ of a percentage point (Gruss 2014).

til the next upswing in prices to resume investment. In addition, in a riskier environment, with interest rate increases in the United States on the horizon, the rising financing cost for smaller exploration companies could curtail their ability to carry out exploration. Rising financing costs and low commodity prices may sharply curtail exploration and development activity.

Sharp commodity price declines have disrupted new foreign investments and in some cases production in extractive-based industries. The number of oil rigs—for on-land oil drilling—has already declined from its peak in the fourth quarter of last year, by 15 percent in South America, and 11 percent in Africa. In Sierra Leone, falling iron ore prices have lowered profits and reduced the market value of the iron ore companies operating in the country (the collapsed London Mining and African Minerals). This has led not only to lower foreign investments in the sector but also to the shutdown of operations in Tonkolili (the second largest iron ore mine in Africa and one of the largest magnetite deposits in the world). In Sub-Saharan Africa, projects considered to be most at risk include the expensive ultra-deepwater and pre-salt projects in West Africa, and the liquefied natural gas projects in East Africa (BMI 2015).

As rents decline, country specific factors will likely become more important, including changes in domestic mineral policy regimes. For example, new mining taxes, or tighter ownership and exploitation rules, or delays in licenses will add to production costs (Guinea, Uganda, Zimbabwe). In some regions rising conflict or security risks are an increasingly serious issue (e.g., Mali). A decline in resource-related investment is likely to be associated with declining investment in auxiliary projects, especially transport infrastructure.

Finally, Dutch Disease associated with the commodity boom means that, for many commodity-exporting LICs, shifting growth away from a shrinking natural resource sector may prove hard. Rising infrastructure investment in some countries in East Africa, assisted by growing investment and aid flows from China, could offset some of the headwinds from slowing commodity sectors (see Box 2.1). However, for many LICs, non-resource tradable sectors have atrophied to a point where they will be difficult to revive, and in some cases service sectors have

been unduly inflated. It is difficult therefore to see how other sectors could, over the medium term, fully pick up the slack left by declining exports and investment spending.

## Conclusion and policy recommendations

The commodity boom has been pivotal in raising growth, exports and investment in metals and minerals in commodity-producing LICs. However, improvements in poverty reduction, and in higher productivity employment, are less clear. Looking ahead, the sheer size of recent commodity discoveries in some countries will continue to bode well for long term growth prospects in some countries, notably in East Africa. However, over the medium term, the global economic environment will be less favorable to growth in commodity-exporting LICs than it has been over the past decade and a half. Prospects are for a protracted adjustment to lower and more volatile commodity prices, weaker demand for exports, and reduced resource investment and production in the next few years.

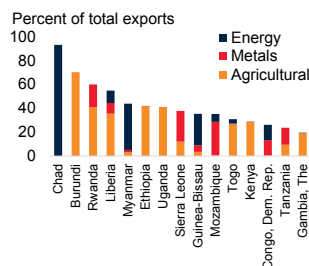
The ability to navigate these headwinds will crucially depend on the extent to which policymakers have saved the windfalls from the commodity boom over the past decade, or used them for growth-enhancing investments (Gill et al. 2014). Among countries that are highly dependent on natural resource sectors, those with low policy and reserve buffers, and large fiscal or current account deficits, face potentially disruptive adjustments. In other countries, with more diversified economies, such as Kenya, Tanzania and Uganda, the emergence of a large, vibrant, middle-class should help to support private consumption (McKinsey 2011).

Going forward, policy will continue to play a critical role. Policies that improve the conditions to do business and ease supply side and infrastructure constraints will increase the return on capital in both the resource and the non-resource sectors. Policy makers should refrain from trying to offset headwinds from the turn in the commodity cycle with demand stimulus that would also deplete buffers. Instead, in the interests of more stable growth in the future, they should focus on structural reforms that support the non-commodity sectors. This would include building infrastructure, and sound institutions (Gill et al. 2014). Evidence for Africa shows that better institutions encourage low inflation, as

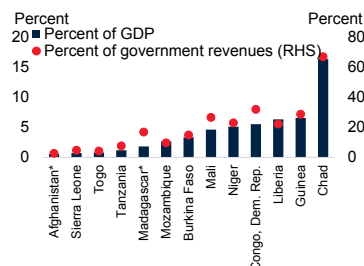
## FIGURE SF2.9 Drivers of growth in low-income countries

Although several low-income countries are heavily dependent on the natural resource sector for exports and fiscal revenues, many low-income country economies have large agricultural sectors and receive significant remittance inflows.

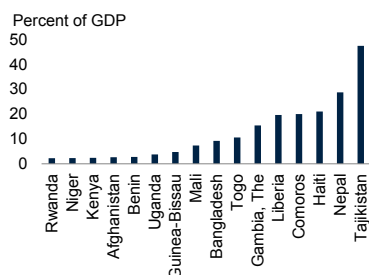
### A. LICs: Commodity exports, 2013



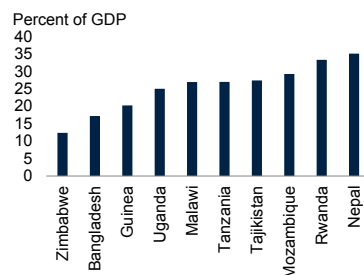
### B. LICs: Commodity revenues, latest available



### C. Remittances, 2014



### D. LICs: Agriculture, 2012



Source: WDI, Comtrade, World Bank, IMF, various Extractive Industries Transparency Initiative (EITI) reports  
B. Extractive industry sector payments (taxes, royalties, dividends) to the government from EITI reports from 2011–2013.

well as FDI inflows, and output growth stability (Ahmed and Suardi, 2009; Poelhekke and van der Ploeg, 2013).

## B. Recent Developments and Near-Term Outlook in Low-Income Countries

Thus far, large agricultural sectors, remittances, and public investment have cushioned the impact of sharply weaker terms of trade in commodity-exporting LICs (Figure SF2.9, World Bank 2015a, 2015b). Growth in LICs was flat in 2014, but is expected to pick up in 2015 and remain robust during 2016–17 (Figure SF2.10). Declining commodity prices, however, are likely to increasingly put pressure on fiscal and current account balances of LICs that rely heavily on exports of energy and

metals.<sup>21</sup> Several commodity-exporting LICs have limited buffers to absorb this deterioration. Oil-importing LICs, on the other hand, are expected to benefit from shrinking vulnerabilities as current account balances improve on falling oil import costs.

Political uncertainty has mounted in some LICs. Elections are scheduled for October 2015 in Tanzania and Afghanistan. Afghanistan is in the midst of a political and security transition, partly related to the withdrawal of U.S. troops, which is taking a toll on the economy. Bangladesh is experiencing significant supply chain disruptions related to political unrest. This is weighing on garment exports, which make up 80 percent of total exports, and is contributing to the emergence of a current account deficit.

Exchange rates have come increasingly under pressure, in commodity-exporting and -importing countries alike. This has reflected partly the broad-based strengthening of the U.S. dollar since mid-2014, and partly a reassessment of country risks and vulnerabilities.<sup>22</sup> The currencies of metal-exporting countries and the currencies of countries with large current account or fiscal deficits (Tanzania, Kenya), have depreciated particularly sharply against the U.S. dollar.

Depreciations partly offset the disinflationary impact of lower oil prices. Cheaper fuel helped lower inflation and improve current account deficits (Kenya) and fiscal deficits (Bangladesh) in some net-oil importing LICs in the first quarter of 2015. In several countries, inflation moved back within (Bangladesh, Kenya) or towards (Malawi) target ranges, allowing central banks to keep interest rates on hold or to raise them at a slower pace than otherwise. In other countries, however, inflation increased as a result of currency depreciation (Haiti, Tajikistan, Tanzania, Uganda).

For 2015–17, growth in LICs, on average, is expected to remain above 6 percent, reflecting continuing strong output growth in several large LICs, supported by sustained investment in public infrastructure (Ethiopia) and mining (Democratic Republic of Congo). Consumer spending should be

<sup>21</sup>Countries with oil, gas, and metals exports in excess of 5 percent of total exports include Ethiopia, Kenya, Madagascar, Mozambique, Nepal, Niger, Rwanda, Uganda, Zimbabwe.

<sup>22</sup>The depreciations in LICs in the CFA franc zone reflected their currencies' peg to the euro. Low-income CFA franc zone countries include Benin, Burkina Faso, Central African Republic, Chad, Guinea-Bissau, Mali, Niger, and Togo.

boosted (Bangladesh, Uganda), by growth in remittances, even if this growth is down from 2014 (Bangladesh).

Despite lower commodity prices, the forecast is for mining output to rise in a number of countries as past investments come on stream (e.g., gold and copper in Democratic Republic of Congo, coal in Mozambique) and other mining investments proceed, albeit at a slower pace (Mozambique, Tanzania). Several governments are prioritizing infrastructure projects, including in the energy sector, in some as part of recent regional agreements to upgrade regional energy grids (Kenya, Rwanda). Elsewhere, heavy government infrastructure investment is supported by Chinese financing (Côte d’Ivoire and Ethiopia; BMI 2015).

In several fragile countries (Madagascar, Malawi, Mali), growth should pick up as investment rises on the back of increased political stability. Rising political uncertainty will, however, dampen growth somewhat in Bangladesh in the near-term, although domestic demand should remain supported by resilient remittances. In Nepal, strong remittance inflows should help support domestic demand and post-earthquake reconstruction. Recovering activity in Guinea, Liberia, and Sierra Leone as the effects of the Ebola crisis wane should also help to support growth in these countries.

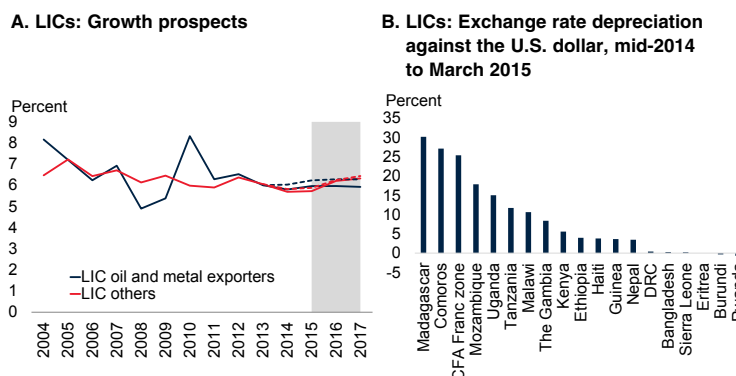
### Risks to the outlook

The outlook is subject to significant and increasing downside risks.

- A further decline in commodity prices would sharply lower revenue in oil-exporting countries, requiring them to undertake deeper fiscal adjustments, with sharper expenditure cuts. It may prompt some commodity extraction companies to delay or even cancel planned investments in 2015 (Guinea, Mozambique, Tanzania, Uganda). Given the importance of artisanal and small-scale mining in LICs, domestic private consumption may also prove weaker than expected in the baseline.
- Lower oil prices would also cause a more protracted recession than anticipated in Russia and dampen growth in Tajikistan through lower remittances and exports.

### FIGURE SF2.10 Growth prospects

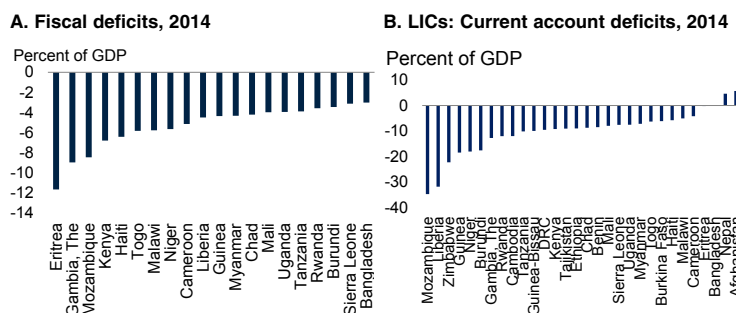
Growth should remain supported by resilient remittances, public investment, and strong harvests. However, risks remain on the downside.



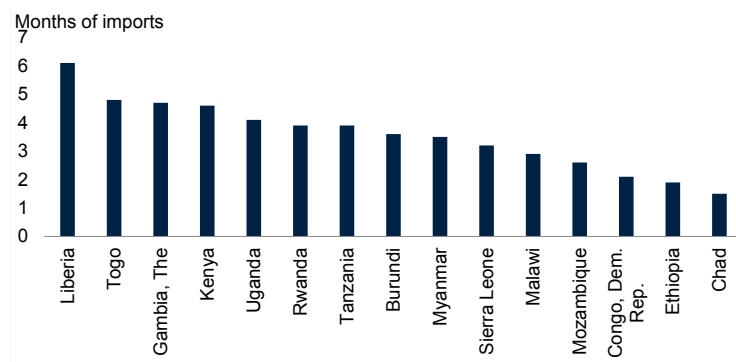
Source: IMF World Economic Outlook, IMF staff reports, World Bank, Haver Analytics.

### FIGURE SF2.11 Vulnerabilities

Risks are increasingly on the downside. Government spending has risen sharply in some countries, and deficits may prove hard to finance. Current account deficits are large in some countries and reserve buffers low.



### C. LICs: International reserves, 2014



Source: World Bank, IMF  
 Note: Reserve buffers are from latest publicly available IMF staff reports.  
 B. DRC denotes Democratic Republic of Congo.

- Conflict could intensify again in fragile states (e.g., al-Shabab in Kenya, or insurgencies in Mali).
- A sudden adjustment of market expectations to the upcoming tightening of monetary policy in the United States could put pressures on capital

account inflows, and exchange rates, and on debt service costs of countries that have tapped international capital markets since the crisis (Tanzania, Kenya, Rwanda, Mozambique, Ethiopia).

LICs continued to have limited buffers to absorb stresses should risks materialize. Current account deficits, and government borrowing requirements are large in many LICs (Figure SF2.11). Reserve coverage of imports in several countries is below three months of imports (Chad, Ethiopia, Democratic Republic of Congo). Notwithstanding the spending restraint applied by commodity-exporting LICs until 2007, the sharp post-global crisis expansion in

government spending has reduced fiscal space. As a result, several now have large twin deficits, with fiscal and current account deficits in excess of 5 percent of GDP (Guinea, Kenya, Mozambique, Niger).

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**TABLE SF2.1 Low-income country growth forecasts**

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

	00-10 <sup>a</sup>	2011	2012	2013	2014 <sup>e</sup>	2015 <sup>f</sup>	2016 <sup>f</sup>	2017 <sup>f</sup>
Low-income country	5.7	6.1	6.5	6.2	6.2	6.2	6.6	6.6
Afghanistan	12.8	6.1	14.4	3.7	2.0	2.5	5.0	5.1
Bangladesh <sup>b</sup>	6.1	6.5	6.0	6.1	5.6	6.3	6.7	6.7
Benin	3.9	3.3	5.4	5.6	5.5	4.6	4.6	4.7
Burkina Faso	6.0	4.2	9.5	6.5	4.5	5.0	6.2	6.5
Burundi	3.3	4.2	4.0	4.6	4.7	4.8	5.0	5.2
Cambodia	8.0	7.1	7.3	7.4	7.0	6.9	6.9	6.8
Chad	10.7	0.1	8.9	4.0	7.3	9.0	4.7	5.6
Comoros	2.9	2.6	3.0	3.5	3.2	3.4	3.7	3.8
Congo, Dem. Rep.	4.7	6.9	7.1	8.5	9.0	8.0	8.5	9.0
Eritrea	0.9	8.7	7.0	1.3	2.0	1.5	2.0	2.2
Ethiopia <sup>b</sup>	8.6	11.2	8.6	10.5	10.3	9.5	10.5	8.5
Gambia, The	4.6	-4.3	5.9	4.8	-0.2	3.0	5.1	6.1
Guinea	2.6	3.9	3.9	2.3	0.4	-0.3	2.3	2.5
Guinea-Bissau	2.5	9.0	-2.2	0.3	2.5	4.2	3.9	4.0
Haiti	0.1	5.5	2.9	4.2	2.7	1.7	3.2	3.1
Kenya	4.4	6.1	4.5	5.7	5.3	6.0	6.6	6.5
Madagascar	2.6	1.5	3.0	2.4	3.0	4.6	4.8	5.0
Malawi	4.5	4.3	1.9	5.0	5.7	5.1	5.6	5.9
Mali	5.7	2.7	0.0	1.7	6.8	5.6	5.1	5.2
Mozambique	7.7	7.4	7.1	7.4	7.4	7.2	7.3	7.3
Myanmar	10.3	5.9	7.3	8.3	8.5	8.5	8.2	8.0
Nepal <sup>bc</sup>	3.9	3.4	4.9	3.8	5.5	4.2	4.5	5.5
Niger	4.6	2.3	11.0	4.1	6.2	4.5	5.5	7.7
Rwanda	7.9	7.9	8.8	4.7	7.0	7.0	7.0	7.5
Sierra Leone	8.9	6.0	15.2	20.1	6.0	-12.8	8.4	8.9
Tajikistan	8.3	7.4	7.5	7.4	6.7	3.2	4.4	5.2
Tanzania	7.0	6.4	6.9	7.0	7.2	7.2	7.1	7.1
Togo	2.0	4.9	5.9	5.1	5.5	5.1	4.9	4.7
Uganda	7.8	4.7	3.6	4.8	5.2	5.5	5.7	5.8
Zimbabwe	-4.7	11.9	10.6	4.5	3.2	1.0	2.5	3.5

Source: World Bank.

World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries' prospects do not significantly differ at any given moment in time. Central African Rep., Korea, Dem Rep., Liberia, and Somalia are not forecasted owing to data limitations.

a. GDP growth rates over intervals are compound average over the period.

b. GDP growth based on fiscal year data.

c. Nepal forecasts are preliminary.

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