CHAPTER 1

GLOBAL PROSPECTS AND POLICIES

World growth strengthened in 2017 to 3.8 percent, with a notable rebound in global trade. It was driven by an investment recovery in advanced economies, continued strong growth in emerging Asia, a notable upswing in emerging Europe, and signs of recovery in several commodity exporters. Global growth is expected to tick up to 3.9 percent this year and next, supported by strong momentum, favorable market sentiment, accommodative financial conditions, and the domestic and international repercussions of expansionary fiscal policy in the United States. The partial recovery in commodity prices should allow conditions in commodity exporters to gradually improve.

Over the medium term, global growth is projected to decline to about 3.7 percent. Once the cyclical upswing and US fiscal stimulus have run their course, prospects for advanced economies remain subdued, given their slow potential growth. In emerging market and developing economies, in contrast, growth will remain close to its 2018–19 level as the gradual recovery in commodity exporters and a projected increase in India's growth provide some offset to China's gradual slowdown and emerging Europe's return to its lower-trend growth rate. Nevertheless, 40 emerging market and developing economies are projected to grow more slowly in per capita terms than advanced economies, failing to narrow income gaps vis-à-vis the group of more prosperous countries.

Despite strong aggregate figures in the baseline forecast and buoyant market sentiment, the current momentum is not assured. Upside and downside risks are broadly balanced over the next several quarters, but risks farther down the road are skewed to the downside. With still-easy financial conditions and persistently low inflation that has required protracted monetary policy accommodation, a potential further buildup of financial vulnerabilities could give way to rapid tightening of global financial conditions, denting confidence and growth. The support to growth that comes from procyclical policies, including in the United States, will eventually need to be reversed. Other risks include a shift toward inward-looking policies that harm international trade and a worsening of geopolitical tensions and strife.

The current favorable juncture offers a window to enact policies and reforms that protect the upswing and raise medium-term growth to the benefit of all—strengthening the potential for higher and more inclusive growth, building buffers that will help deal more effectively with the next downturn, improving financial resilience to contain financial market risks, and fostering international cooperation.

Recent Developments and Prospects

An Investment-Led Pickup in Growth

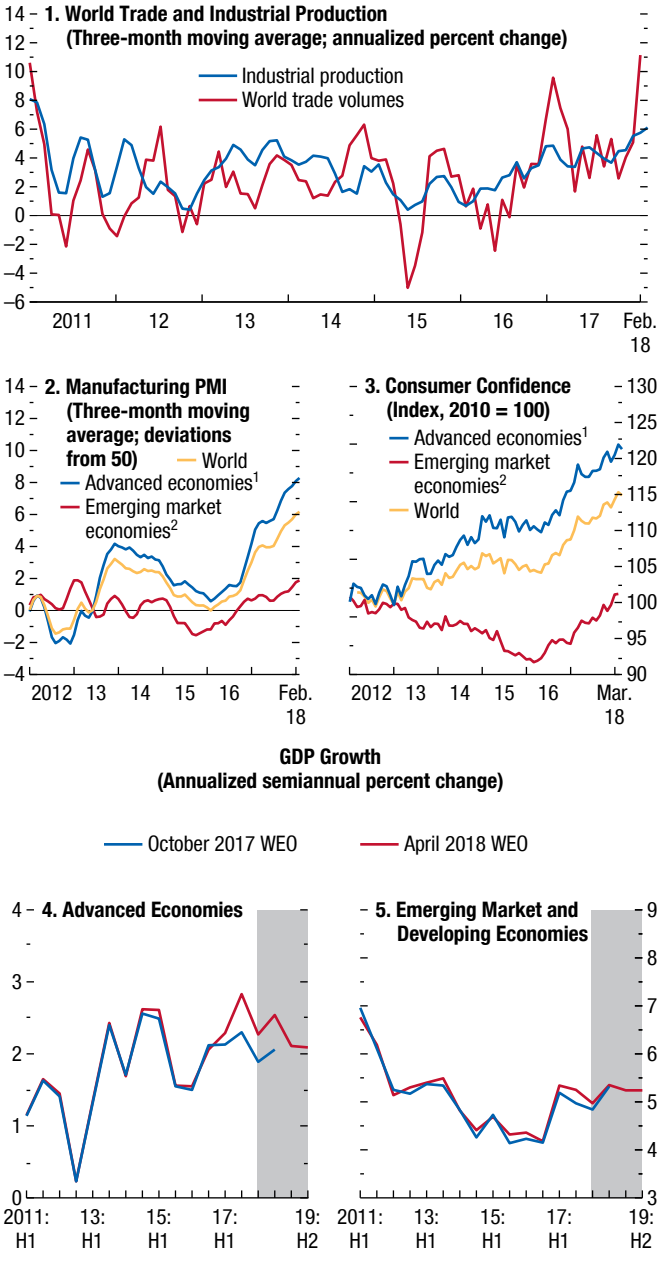
At 3.8 percent, global growth last year was ½ percentage point faster than in 2016 and the strongest since 2011. Two-thirds of countries accounting for about three-fourths of global output experienced faster growth in 2017 than in the previous year (the highest share of countries experiencing a year-over-year growth pickup since 2010). The preliminary outcome for global growth in 2017 was 0.2 percentage point stronger than forecast in the October 2017 *World Economic Outlook* (WEO), with upside surprises in the second half of 2017 in advanced as well as emerging market and developing economies.

Resurgent investment spending in advanced economies and an end to the investment decline in some commodity-exporting emerging market and developing economies were important drivers of the uptick in global GDP growth and manufacturing activity (Figures 1.1–1.3).

- Across advanced economies, the 0.6 percentage point pickup in 2017 growth relative to 2016 is explained almost entirely by investment spending, which remained weak since the 2008–09 global financial crisis and was particularly subdued in 2016 (Figure 1.2, left column). Both stronger gross fixed capital formation and an acceleration in stock building contributed to the pickup in investment, with accommodative monetary policy, stronger balance sheets, and an improved outlook helping release pent-up demand for capital goods.

Figure 1.1. Global Activity Indicators

Global growth surprised on the upside in the second half of 2017 amid strengthening industrial production and trade.

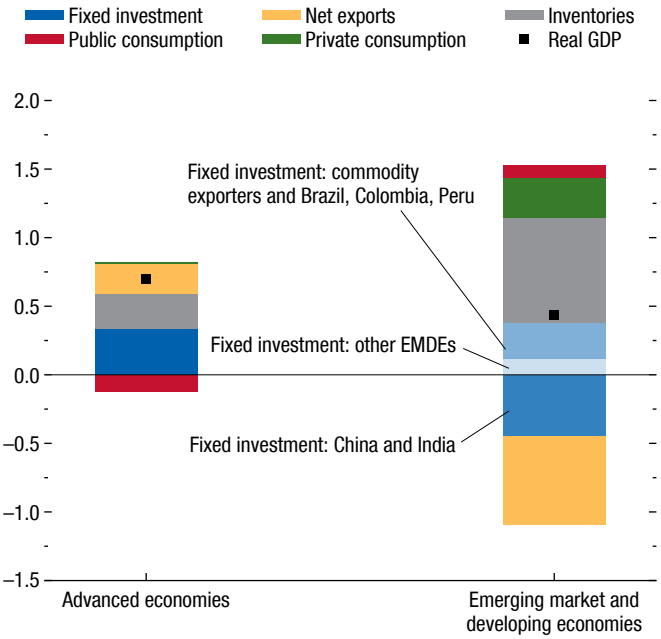


Sources: CPB Netherlands Bureau for Economic Policy Analysis; Haver Analytics; Markit Economics; and IMF staff estimates.
Note: CC = consumer confidence; PMI = purchasing managers' index; WEO = *World Economic Outlook*.
[1]Australia, Canada (PMI only), Czech Republic, Denmark, euro area, Hong Kong SAR (CC only), Israel, Japan, Korea, New Zealand (PMI only), Norway (CC only), Singapore (PMI only), Sweden (CC only), Switzerland, Taiwan Province of China, United Kingdom, United States.
[2]Argentina (CC only), Brazil, China, Colombia (CC only), Hungary, India (PMI only), Indonesia, Latvia (CC only), Malaysia (PMI only), Mexico (PMI only), Philippines (CC only), Poland, Russia, South Africa, Thailand (CC only), Turkey, Ukraine (CC only).

Figure 1.2. Contributions to the Change in Real GDP Growth, 2016–17

(Percentage points)

Stronger investment spending in advanced economies and an end to fixed investment contractions in commodity exporters were important contributors to the pickup in global growth.



Source: IMF staff calculations.
Note: EMDEs = emerging market and developing economies.

- Across emerging market and developing economies, the 0.4 percentage point pickup in 2017 growth came primarily from an acceleration in private consumption (Figure 1.2, right column). But the picture is mixed within the group. Growth in China and India last year was supported by resurgent net exports and strong private consumption, respectively, while investment growth slowed. An end to fixed investment contractions in commodity-exporting countries that were severely affected by the commodity price downturn during 2015–16 (notably Brazil and Russia, but also Angola, Ecuador, and Nigeria) instead played an important role in their growth pickup in 2017. Higher fixed investment growth (2.3 percentage points above its 2016 level) also supported the growth performance of other emerging market and developing economies, alongside stronger private consumption.

A Cyclical Rebound in Global Trade

Global trade—which tends to be highly correlated with global investment (see Figure 1.3 and Chapter 2 of the October 2016 WEO)—recovered strongly in 2017 after two years of weakness, to an estimated real growth rate of 4.9 percent. The upsurge was more pronounced in emerging market and developing economies (with trade growth rising from 2.2 percent in 2016 to 6.4 percent in 2017), reflecting improved investment growth rates in formerly stressed commodity exporters as well as the recovery in advanced economy investment and domestic demand more generally.

Among advanced economies, large exporters, such as Germany, Japan, the United Kingdom, and the United States, contributed strongly to the recovery in exports (Figure 1.4, panel 1), while the recovery in imports was broad based, except in the United Kingdom (Figure 1.4, panel 2).

Among emerging market and developing economies, as shown in Figure 1.4, panel 3, the rebound in export growth was particularly strong in emerging Asia, especially China.[1] In contrast, the rebound in imports largely reflects an import recovery among commodity exporters—countries that had earlier experienced sharp investment and import contractions during the 2015–16 commodity price downturn. This is shown in Figure 1.4, panel 4: the blue bars represent commodity exporters that had a particularly pronounced cycle in imports (Angola, Brazil, Ecuador, Nigeria, Russia); the green bars represent remaining commodity exporters, which account for an important part of the import demand cycle among other emerging market and developing economies.

Rising Commodity Prices

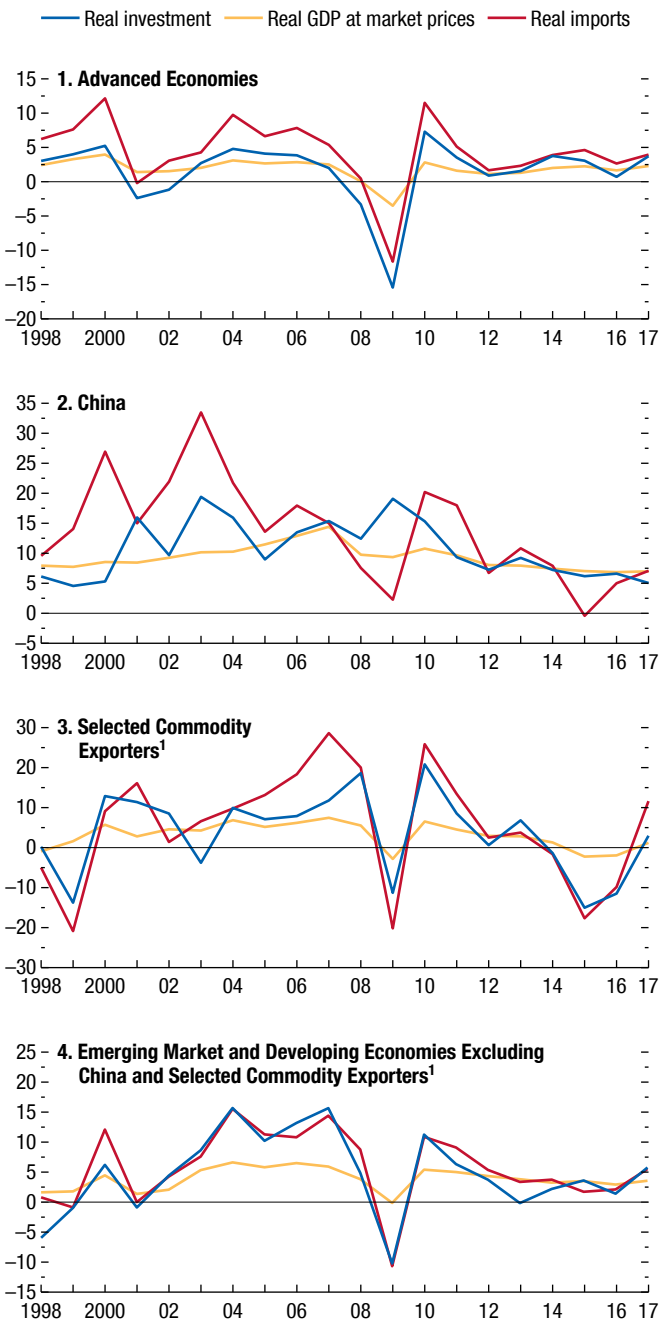
The IMF's Primary Commodities Price Index rose 16.9 percent between August 2017 and February 2018—that is, between the reference periods for the October 2017 WEO and the current report (Figure 1.5). As described in the Commodities Special Feature, the increase was driven primarily by rising oil and natural gas prices. Among the other subindices, metals and agricultural commodity prices also rose, although less rapidly than energy prices.

- Oil prices increased to more than $65 a barrel in January, the highest level since 2015, following

[1]Box 1.1 discusses the role of the so-called tech cycle in explaining the rebound in trade in Asian economies and elsewhere.

Figure 1.3. Global Investment and Trade
(Percent change)

Global trade recovered strongly in 2017 after two years of weakness as investment spending picked up.

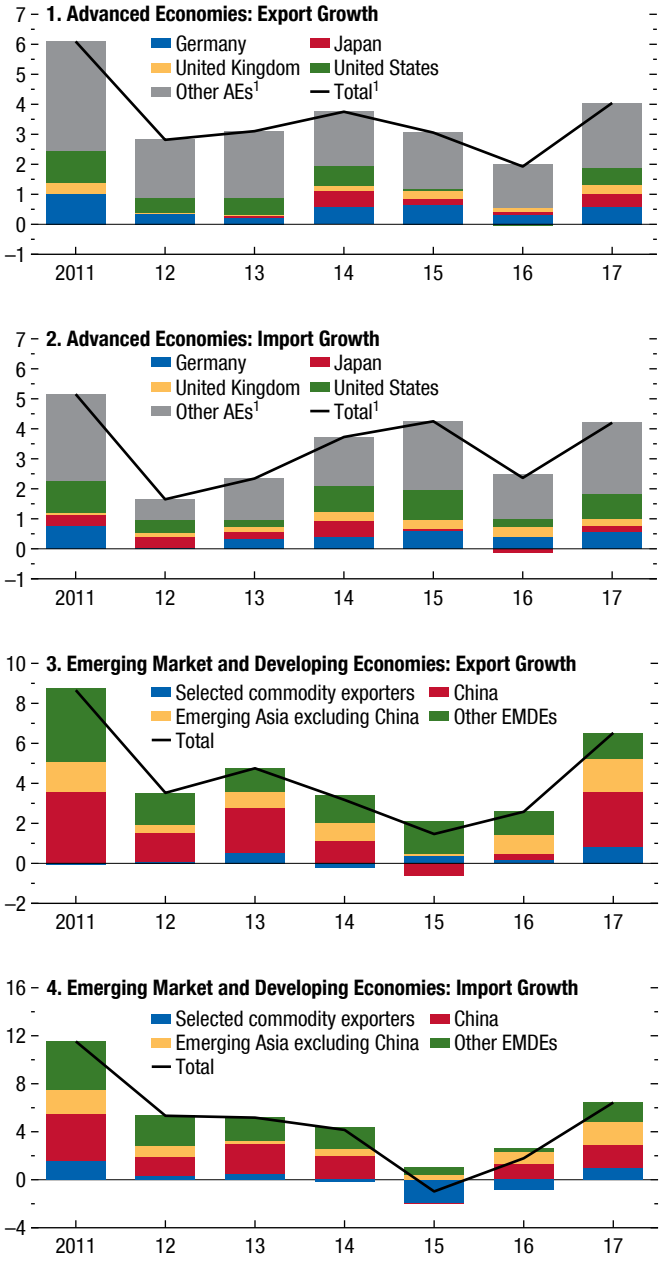


Source: IMF staff calculations.
[1]Selected commodity exporters = Angola, Brazil, Ecuador, Nigeria, Russia.

Figure 1.4. Contributions to Trade Growth

(Percent)

The trade recovery was particularly pronounced in emerging market and developing economies.

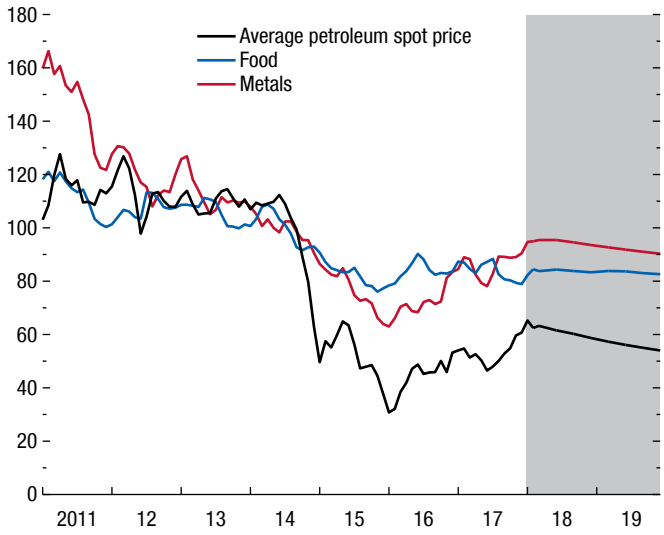


Source: IMF staff calculations.
Note: Trade growth reflects export and import volumes from external sector data. AEs = advanced economies; EMDEs = emerging market and developing economies; selected commodity exporters = Angola, Brazil, Ecuador, Nigeria, Russia.
[1]Excludes Ireland.

Figure 1.5. Commodity and Oil Prices

(Deflated using US consumer price index; index, 2014 = 100)

Commodity prices, notably of oil and natural gas, have risen since the fall, but the medium-term outlook remains subdued.



Sources: IMF, Primary Commodity Price System; and IMF staff estimates.

unplanned outages on the US Gulf Coast and in Libya, the North Sea, and Venezuela; an extension to the end of 2018 of the Organization of the Petroleum Exporting Countries agreement on production targets; and stronger global economic growth. Prices moderated to $63 a barrel in February, 27 percent above their August level.

- The natural gas price index—an average for Europe, Japan, and the United States—rose sharply, by 45 percent from August 2017 to February 2018, reflecting seasonal factors. Strong demand for liquefied natural gas (LNG) in China, where the government has restricted the use of coal to mitigate air pollution, helped drive the spot LNG price to its highest level in three years. Higher oil prices also added upward pressure in countries where oil-linked pricing is more common.
- Metal prices increased 8.3 percent from August to February, in line with stronger growth in all major economies. Demand for base metals—especially aluminum—was strong, while supply was limited in part due to China's production capacity cuts. Iron ore prices rose 4.1 percent from August to February, rallying recently thanks to strong steel prices and rising coal costs.

- The IMF's agricultural price index rose 4.1 percent from August 2017 to February 2018, as unfavorable weather conditions in recent months are expected to reduce this year's harvests of many grains and oilseeds. The subindices of food and agricultural raw materials rose 4.1 percent and 6.0 percent, respectively.

Headline Inflation Has Picked up, but Core Inflation Remains Sluggish

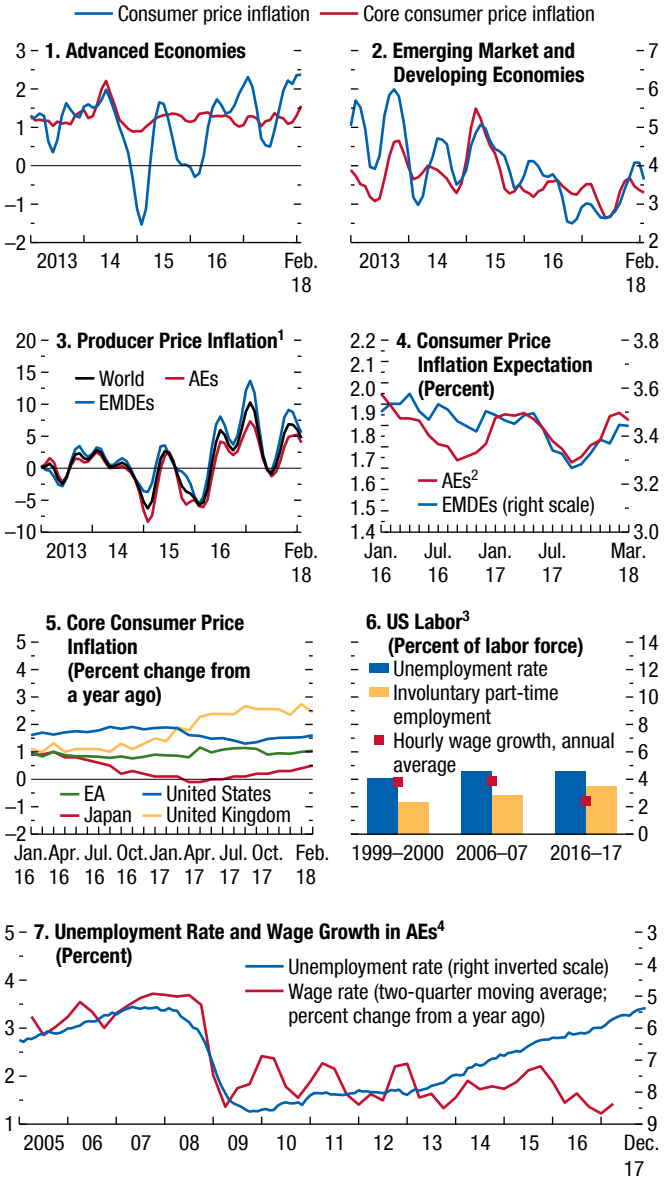
With the upturn in oil prices since September, headline consumer price inflation has picked up again (Figure 1.6). Core inflation—inflation rates when fuel and food prices are excluded—generally remains soft. It has begun to show signs of recovery in advanced economies and appears to have bottomed out in emerging market and developing economies. As illustrated in Box 1.2, the continued weakness of inflation in advanced economies relative to precrisis years reflects primarily nontraded consumer services, such as medical services and education. Traded goods inflation has remained low but has not declined.

- In most advanced economies, core inflation remains below target but appears to be edging up in response to stronger demand. In the United States, where unemployment is close to its lowest level since the late 1960s, core personal consumer expenditure inflation (the Federal Reserve's preferred measure) has begun to firm. In February, it stood at about 1.6 percent when measured on a 12-month basis, but slightly above 2 percent (the Federal Reserve's medium-term target), measured on a three-month (annualized) basis. Twelve-month core inflation notched up to 1.1 percent in the euro area in February (just above its average for the past couple of years), while in Japan it has remained on a gentle upward trajectory in recent months, reaching 0.4 percent in January. The United Kingdom is an exception to the pattern of below-target inflation. At 2.4 percent in February, UK core inflation is below the peak it reached in 2017 in the aftermath of the June 2016 Brexit referendum pound depreciation, but remains above the Bank of England's target of 2 percent.
- Wage growth also remains tepid in most advanced economies, moving broadly in line with labor productivity when measured in real terms (hence implying a limited increase in unit labor costs). As documented in Chapter 2 of the October 2017

Figure 1.6. Global Inflation

(Three-month moving average; annualized percent change, unless noted otherwise)

Headline inflation has picked up, reflecting stronger fuel prices, but core inflation remains soft.



Sources: Consensus Economics; Haver Analytics; Organisation for Economic Co-operation and Development; US Bureau of Labor Statistics; and IMF staff calculations.

Note: AEs = advanced economies (AUT, BEL, CAN, CHE, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, HKG, IRL, ISR, ITA, JPN, KOR, LTU, LUX, LVA, NLD, NOR, PRT, SGP, SVK, SVN, SWE, TWN, USA); EA = euro area; EMDEs = emerging market and developing economies (BGR, BRA, CHL, CHN, COL, HUN, IDN, IND, MEX, MYS, PER, PHL, POL, ROU, RUS, THA, TUR, ZAF). Panel 6 is equalized to 100 in 2007 by shifting the level. Country list uses International Organization for Standardization (ISO) country codes.

[1]AEs excludes HKG, ISR, and TWN. EMDEs includes UKR; excludes IDN, IND, PER, and PHL.

[2]AEs includes AUS; excludes LUX.

[3]Hourly wage growth refers to the growth of production and nonsupervisory workers in private industries.

[4]Blue line includes AUS and NZL; excludes BEL. Red line includes AUS and MLT; excludes HKG, SGP, and TWN.

WEO, the sluggishness in wages partly reflects continued slack in labor markets, especially a still-elevated share of workers involuntarily working part-time. Changes in the composition of the workforce—new entrants earning relatively lower wages than retiring workers—may also have played a role. The January uptick in US hourly earnings growth was a welcome sign of a firming labor market after a period of strong payroll gains. A sustained acceleration of labor earnings will be needed to push real wage growth above labor productivity gains, raise cost pressures for firms, and support the return of core inflation toward the medium-term target.

- In many emerging market and developing economies, recent currency stability or appreciations against the US dollar have helped keep a lid on core inflation. Core inflation is around historical lows in Brazil and Russia, where demand has been recovering from the deep contractions of 2015–16, while it has picked up in India after falling sharply in the second quarter of 2017 due to one-off factors. In China, core inflation remains broadly stable at about 2 percent. In contrast, other countries—in sub-Saharan Africa; the Commonwealth of Independent States; and the Middle East, North Africa, Afghanistan, and Pakistan region—continue to grapple with high inflation stemming from the pass-through of earlier exchange rate depreciations.

Financial Conditions—Still Loose

Despite equity market turbulence in early February, equity market declines in March, and some increases in bond yields in response to firmer growth and inflation, market sentiment generally appears stronger than in August. Confidence in the strength of the global outlook has gained ground, and financial conditions remain accommodative and supportive of the recovery, as discussed in the April 2018 *Global Financial Stability Report* (GFSR).

Central bank monetary policy moves have been well telegraphed and absorbed smoothly by markets. Withdrawal of monetary support in the United States has continued, with increases in short-term interest rates in December and March amid a firmer labor market and emerging signs of strengthening inflation. Markets are currently pricing in two additional interest rate increases in 2018—a more rapid pace of normalization than expected a few months ago (Figure 1.7). In January 2018, the European Central Bank reduced the monthly pace of its asset purchase program from €60 billion to €30 billion, with purchases intended to continue until the end of September 2018, or beyond if necessary. Among other advanced economies, the United Kingdom raised its bank rate to 50 basis points in November and Canada raised its policy rate to 1.25 percent in January.

With strengthening economic activity and expectations of more rapid increases in the policy rate in the United States, nominal yields on 10-year US Treasury bonds have risen by over 50 basis points since August (as of end March 2018). This increase reflects primarily a steeper expected path for short-term interest rates. Over the same period, long-term bond yields have risen by some 10 basis points in Germany and 25 basis points in the United Kingdom, while they have remained around zero in Japan. Long term bond yields have remained broadly unchanged in Italy and Spain, as their spreads over German bunds have compressed with the increase in German yields.

Despite the early February turbulence and declines in March following the announcements of intended US tariff actions on steel and aluminum and a range of Chinese products, as well as the announcement by China of retaliatory tariffs on imports from the US, equity market valuations remain stronger than in August (Figure 1.7, panel 5). Volatility has subsided but remains higher than the pre-February episode lows, with spillovers beyond equity markets generally contained. Corporate credit spreads are tighter or little changed relative to August (Figure 1.7 panel 6).

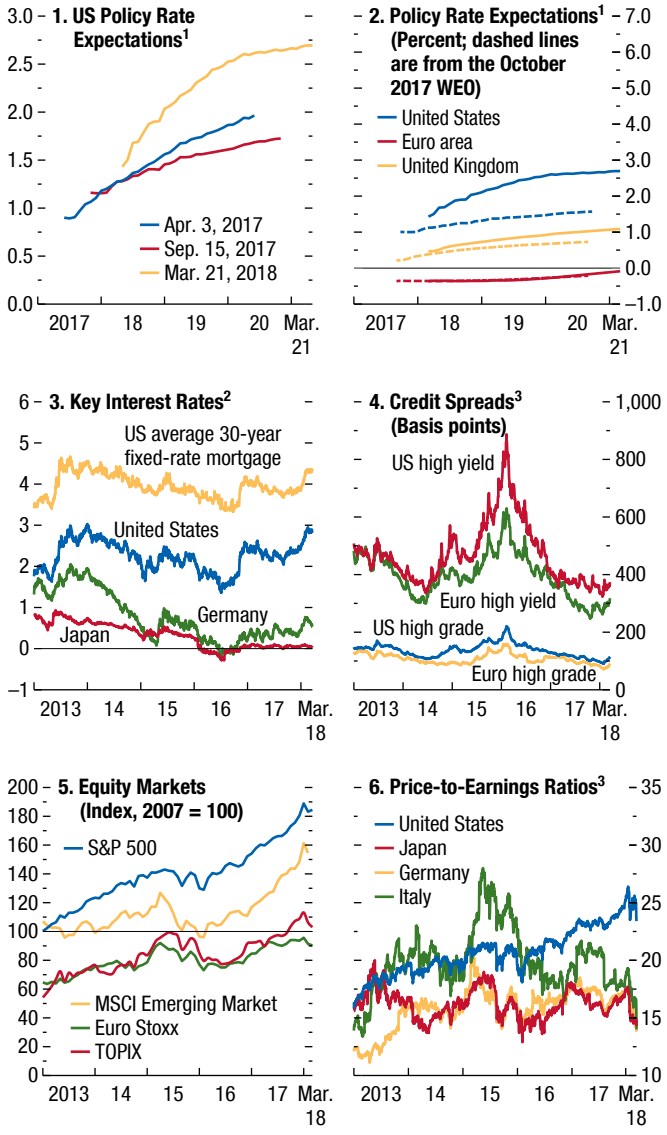
Despite widening interest rate differentials, the US dollar weakened modestly in real effective terms, by about 1½ percent between August 2017 and end-March 2018, and is about 4 ½ percent weaker than its 2017 average (Figure 1.8). The euro has appreciated by around 1 percent and stands about 4 percent stronger than its 2017 average. Among other currencies, the Japanese yen has remained broadly stable, while the British pound appreciated 5 ½ percent after the Bank of England raised interest rates in November and as expectations of a Brexit deal rose.

In emerging market economies, financial conditions since August have generally remained supportive of a pickup in economic activity. Monetary policy was eased further in Brazil and Russia, while it was tightened in Mexico. Equity markets have strengthened (Figure 1.9) and spreads on the J.P. Morgan Global Emerging Markets Bond Index have declined (Figure 1.10). Long-term interest rates on local currency bonds have increased modestly in countries growing rapidly, such as in emerg-

Figure 1.7. Advanced Economies: Monetary and Financial Market Conditions

(Percent, unless noted otherwise)

With stronger domestic demand, a steeper path of expected policy rates has lifted US long-term yields since the fall. Yields have risen to a lesser extent among other advanced economies.

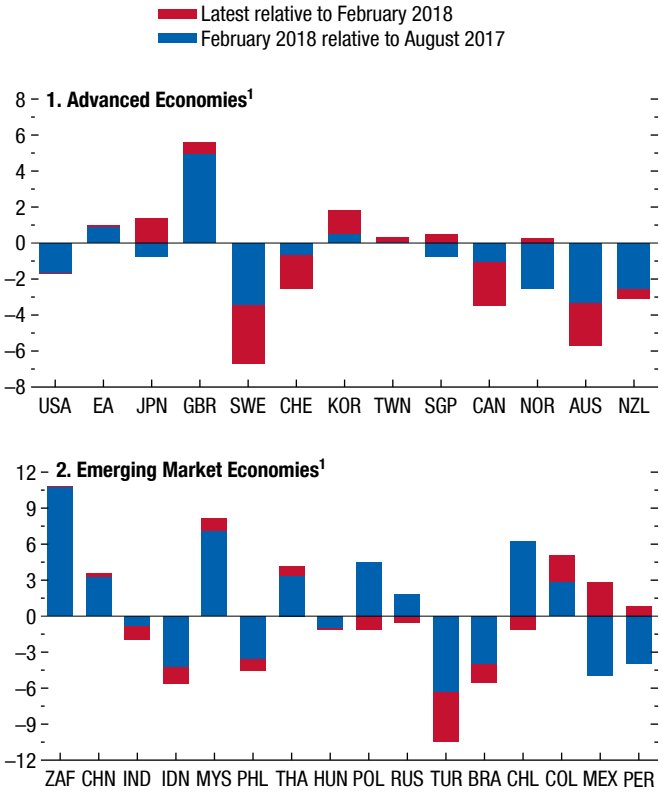


Sources: Bloomberg Finance L.P.; Thomson Reuters Datastream; and IMF staff calculations.
Note: MSCI = Morgan Stanley Capital International; S&P = Standard & Poor's; TOPIX = Tokyo Stock Price Index.
[1]Expectations are based on the federal funds rate futures for the United States, the sterling overnight interbank average rate for the United Kingdom, and the euro interbank offered forward rate for the euro area; updated March 21, 2018.
[2]Interest rates are 10-year government bond yields, unless noted otherwise. Data are through March 23, 2018.
[3]Data are through March 23, 2018.

Figure 1.8. Real Effective Exchange Rate Changes, August 2017–March 2018

(Percent)

Exchange rate movements since the fall have been modest across advanced economies and for most emerging market and developing economies.



Source: IMF staff calculations.
Note: EA = euro area. Data labels use International Organization for Standardization (ISO) country codes.
[1]Latest data available are for March 30, 2018.

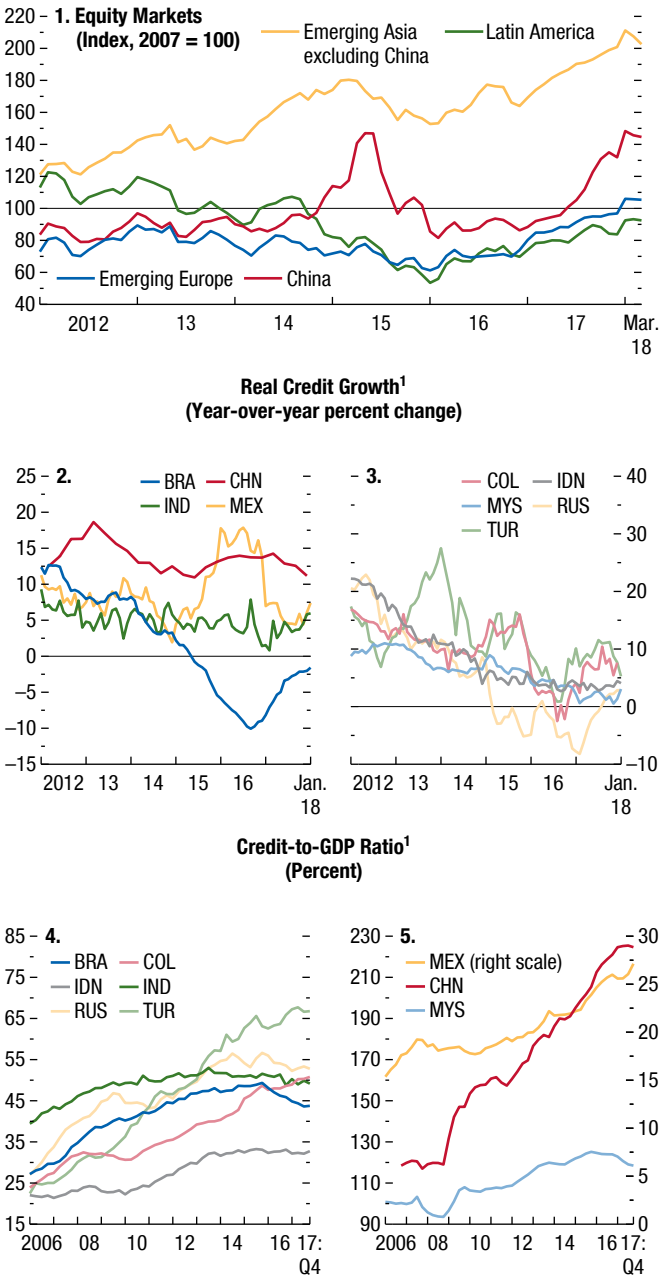
ing Asia and emerging Europe, while they eased further in Latin America and in Russia.

Among emerging market currencies, the Chinese renminbi appreciated 3½ percent in real effective terms between August 2017 and end-March 2018 and by a similar amount relative to its average value in 2017. The South African rand rebounded by 10 percent on reduced political uncertainty and the Malaysian ringgit by over 8 percent on an improved growth outlook and stronger commodity prices. In contrast, the Turkish lira depreciated by more than 10 percent on higher inflation readings.

Financial flows to emerging market economies moderated in the second half of 2017 after surging in the

Figure 1.9. Emerging Market Economies: Equity Markets and Credit

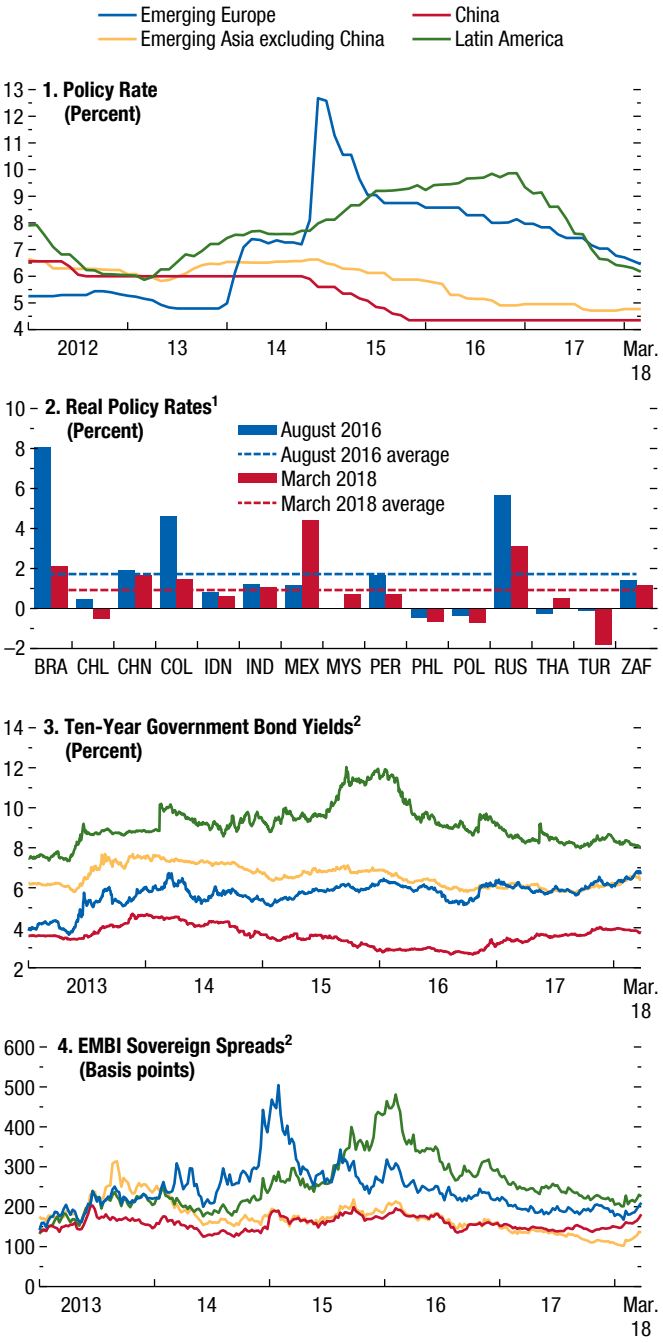
Financial conditions in emerging market economies generally remain supportive of a pickup in economic activity.



Sources: Bloomberg Finance L.P.; Haver Analytics; IMF, International Financial Statistics (IFS) database; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1]Credit is other depository corporations' claims on the private sector (from IFS), except in the case of Brazil, for which private sector credit is from the Monetary Policy and Financial System Credit Operations published by Banco Central do Brasil, and China, for which credit is total social financing after adjusting for local government debt swaps.

Figure 1.10. Emerging Market Economies: Interest Rates

Emerging market bond spreads have declined, while yields on local-currency long-term bonds have increased modestly in some fast-growing economies.



Sources: Bloomberg Finance L.P.; Haver Analytics; IMF, *International Financial Statistics*; and IMF staff calculations.
Note: Emerging Asia excluding China comprises India, Indonesia, Malaysia, the Philippines, and Thailand; emerging Europe comprises Poland, Romania, Russia, and Turkey; Latin America comprises Brazil, Chile, Colombia, Mexico, and Peru. EMBI = J.P. Morgan Emerging Markets Bond Index. Data labels use International Organization for Standardization (ISO) country codes.
[1]Deflated by two-year-ahead *World Economic Outlook* inflation projections.
[2]Data are through March 30, 2018.

first half of the year but remained robust. Following a strong start to 2018, portfolio flows to emerging market economies softened in the immediate aftermath of the global equity market turbulence of early February but have recovered since (Figure 1.11).

Key Forces Shaping the Outlook

Advanced Economies: Output Gaps Closing amid Structurally Stronger Growth

Since 2014 advanced economies have experienced a continued, if at times halting, recovery from the recessions in the aftermath of the 2008–09 global financial crisis and the 2011–12 euro area sovereign debt crisis. Accommodative monetary policy and the gradual fading of crisis-related drags have been pivotal in helping advanced economies attain above-potential growth and reduce unemployment. Measures of potential growth and output gaps are inherently very uncertain, especially in the aftermath of a deep crisis with lasting macroeconomic legacies. Nonetheless, potential growth for advanced economies is also estimated to have recovered in recent years.[2]

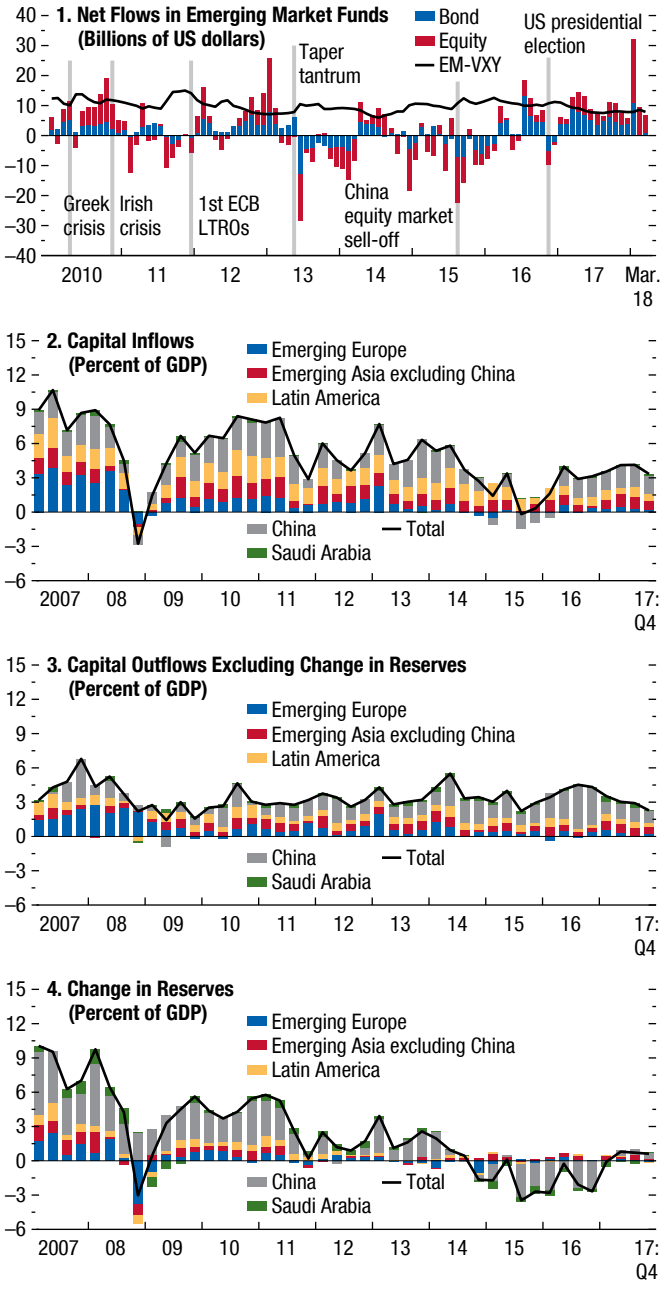
The faster-than-expected pace of activity in advanced economies since mid-2016 has not only sped up the closing of output gaps, it has also led to a reassessment of medium-term output.

- Some 40 percent of the 0.6 percentage point cumulative growth surprise for 2016–17 relative to the October 2016 WEO projections is attributed to a faster-than-expected closing of output gaps (a cyclical recovery in demand), while the rest has been matched by an upward revision to estimated potential growth (implying a structurally stronger recovery).
- Likewise, about 40 percent of the 1.7 percentage point revision to cumulative growth in advanced economies during 2016–21 (relative to the October 2016 WEO projections) is attributed to faster closing of output gaps; the rest is attributed to faster potential growth. Higher potential output relative to earlier projections implies that employment is

[2]Box 1.3 updates the potential growth projections in Chapter 3 of the April 2015 WEO. The analysis—based on multivariate filtering techniques—suggests a pickup in potential growth of about 0.4 percentage point between 2011 and 2017 in a selected group of advanced economies. The estimated change in potential growth is almost identical to the pickup for the aggregated group of advanced economies over the same period in the current WEO projections, which also incorporate country-specific factors.

Figure 1.11. Emerging Market Economies: Capital Flows

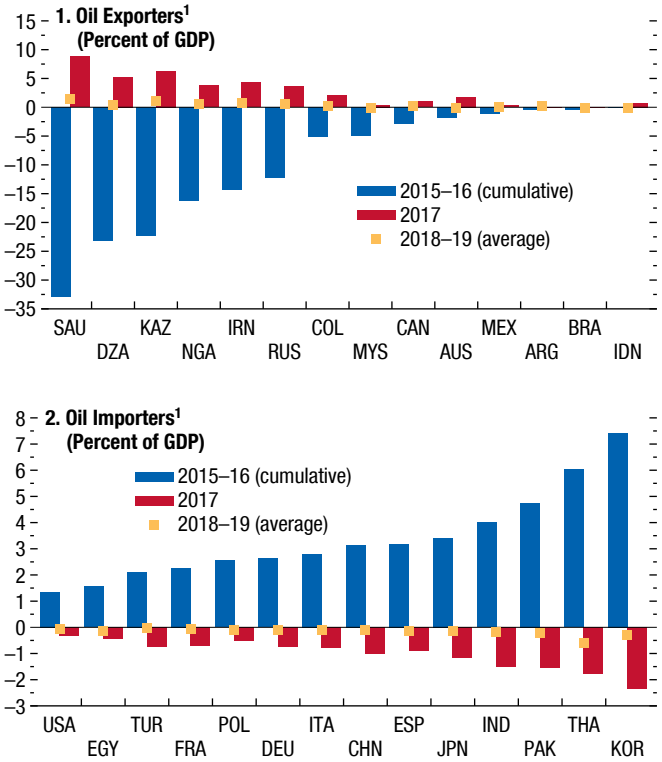
Portfolio flows to emerging market economies softened immediately after the global equity market turbulence of early February, but have recovered since.



Sources: Bloomberg Finance L.P.; EPFR Global; Haver Analytics; IMF, *International Financial Statistics*; and IMF staff calculations.
Note: Capital inflows are net purchases of domestic assets by nonresidents. Capital outflows are net purchases of foreign assets by domestic residents. Emerging Asia excluding China comprises India, Indonesia, Malaysia, the Philippines, and Thailand; emerging Europe comprises Poland, Romania, Russia, and Turkey; Latin America comprises Brazil, Chile, Colombia, Mexico, and Peru. ECB = European Central Bank; EM-VXY = J.P. Morgan Emerging Market Volatility Index; LTROs = longer-term refinancing operations.

Figure 1.12. Terms-of-Trade Windfall Gains and Losses

Despite the projected short-term increase in commodity prices, terms-of-trade windfall gains and losses are expected to be modest over 2018–19 compared with 2015–17.



Source: IMF staff estimates.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1]Gains (losses) for 2018–19 are simple averages of annual incremental gains (losses) for 2018 and 2019. The windfall is an estimate of the change in disposable income arising from commodity price changes. The windfall gain in year t for a country exporting x US dollars of commodity A and importing m US dollars of commodity B in year $t-1$ is defined as $(\Delta p_t^A x_{t-1} - \Delta p_t^B m_{t-1}) / Y_{t-1}$, in which Δp_t^A and Δp_t^B are the percentage changes in the prices of A and B between year $t-1$ and year t, and Y is GDP in year $t-1$ in US dollars. See also Gruss (2014).

expected to be sustained at a higher level as well.[3] The continued decline in headline unemployment rates, with limited signs of wage and price acceleration, is consistent with this interpretation.

Once the gaps close (estimated to occur by the end of 2018 for the advanced economy group), growth is expected to start declining toward potential. The United States, where recent fiscal policy changes are expected to push output above potential, is projected to see a later, but sharper, return to potential growth than most other advanced economies. Box 1.5 presents a stylized scenario analysis of the elements of the US tax reform to shed light on why the US economy is projected to grow considerably faster than potential for a few years. The simulations illustrate that the temporary allowance for full expensing of investment has a particularly large short-term impact on activity because it provides strong incentives to firms to advance and complete investment projects while the allowance is in place. As a result, the US tax reform will reduce growth momentum starting in 2020, and then more strongly when full investment expensing begins to be phased out in 2023.

The medium-term per capita growth rates of advanced economies are expected to be lower—not only than they currently are, but also below those registered in the precrisis decades. The main reason is the slowdown in labor force growth as populations of advanced economies continue to age (as discussed in Chapter 2), a drag that is expected to be offset only partially by some recovery in the growth of total factor productivity (to rates that are well below those registered in the precrisis years; Box 1.4 discusses productivity measurement in the digital age).

Emerging Market and Developing Economies: Effects of Recent Commodity Price Increases

The declines in metal prices since 2011 and the plunge in oil prices in 2014 drove a wedge between the economic performance of commodity-importing and commodity-exporting emerging market and developing economies (Figures 1.12 and 1.13). The growth rates of the two groups were broadly similar before 2014 (excluding faster-growing China) but have since diverged, with importers continuing to grow fast and exporters seeing their growth slow to about half of its average 2000–14 pace. With idiosyncratic problems exacerbating the loss in commodity revenues, some larger exporters—such as Brazil and Russia—experienced deep recessions in 2015–16, while Venezuela has suffered an intensifying economic and humanitarian crisis since 2014. Likewise, Saudi Arabia and some other oil exporters in the Middle East and sub-Saharan Africa have experienced recessions and/or substantial growth slowdowns in recent years as they started adjusting fiscal policy to the permanent loss of commodity revenues.

Output, and especially domestic demand, decelerated sharply in oil exporters in the aftermath of

[3]Advanced economy employment projections for 2021 have been raised by about 1.4 million relative to those in the October 2016 WEO.

terms-of-trade losses, which gave rise to large fiscal and external adjustment needs and tighter financial conditions. The extent of macroeconomic stress associated with the large decline in oil prices has become more apparent over time, with projected growth in oil exporters' GDP, and especially domestic demand, revised down through 2017 even as oil prices firmed somewhat. Looking ahead, the increase in commodity prices in the second half of 2017 creates space for oil exporters to consolidate fiscal balances more gradually but is only a very partial reversal of their initial terms-of-trade losses during 2014–16. In some cases, the price increase also reflects production restraints that directly weigh on real GDP. In addition, domestic political discord and strife continue to weigh heavily on economic activity in several oil exporters. As a result of these offsetting forces, the recovery in growth in oil exporters since the 2015 trough has been very gradual, and growth projections for the next five years are broadly unchanged since October 2017.

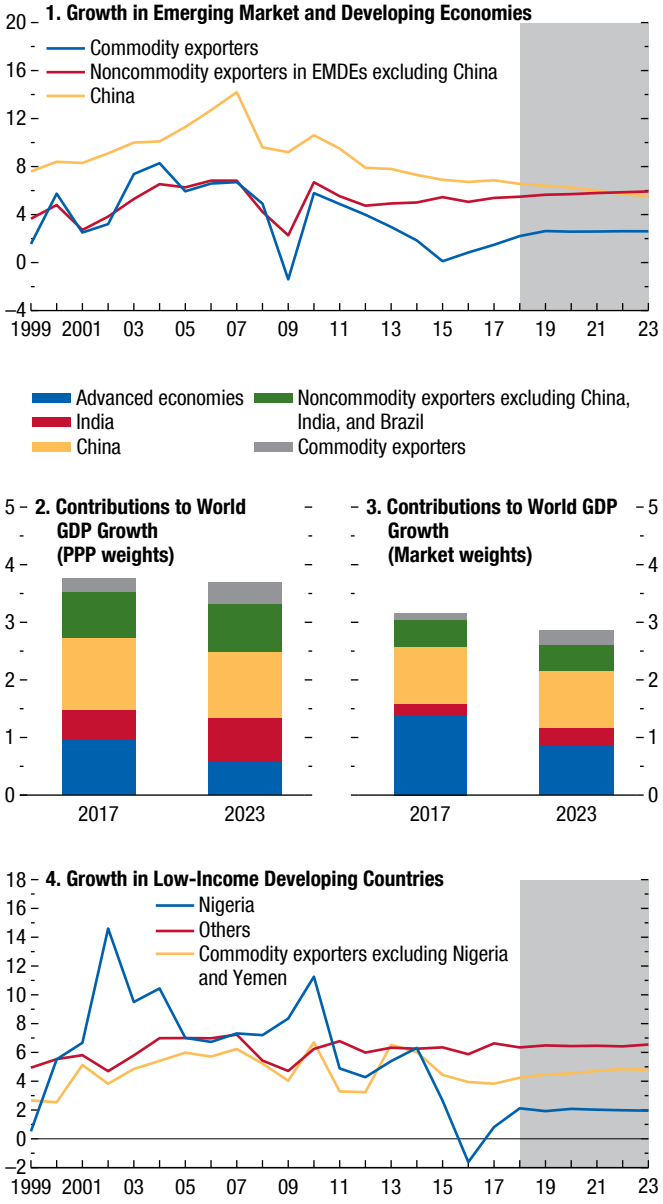
For oil importers, when oil prices fall, the windfall gains as a share of income tend to be smaller than the corresponding losses for oil exporters, given that the oil import bills of the former group are generally lower as a share of overall income than the oil export receipts of the second, smaller, group. The boost to domestic demand in oil importers stemming from the oil price decline of 2014 was, in many cases, partially offset by a reduction in energy subsidies, which implies an incomplete pass-through of the windfall to final users. To the extent that the recent oil price increases are passed on to final users, they may temper domestic demand. The negative effect, in many cases, is not large enough to trigger downward growth revisions, however, given offsetting improvements in external conditions, in particular stronger external demand.

Prospects for Income Convergence—A Glass One-Quarter Empty

The record of income convergence between advanced economies and emerging market and developing economies has not been favorable over the past five decades (as discussed in Chapter 2 of the April 2017 WEO). Over the next five years, the glass will be one-quarter empty: 40 emerging market and developing economies (about 27 percent of the total) are not expected to narrow their per capita income gaps relative to advanced economies. In fact, per capita incomes in 12 of those economies are expected to

Figure 1.13. GDP Growth, 1999–2023
(Percent)

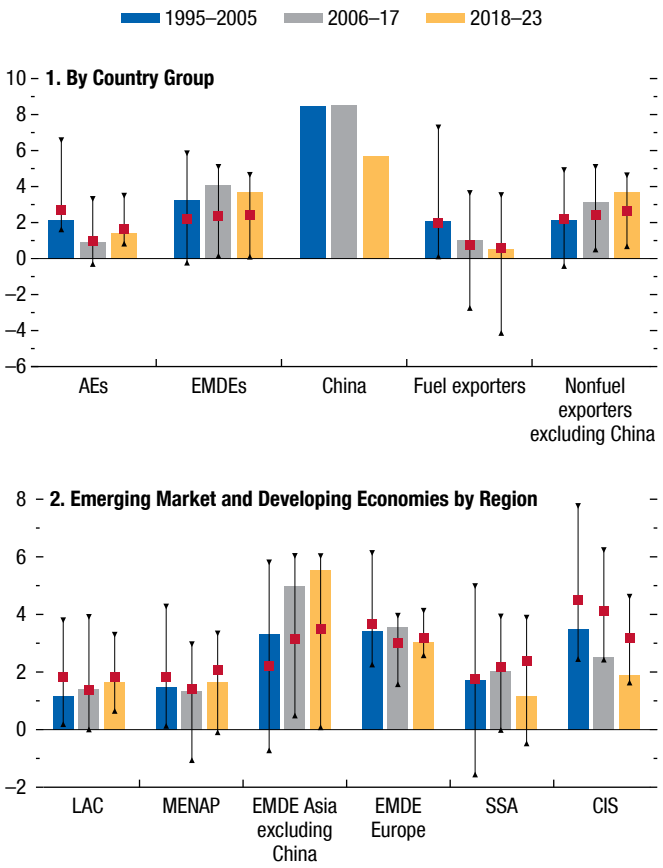
Growth in commodity exporters is projected to stabilize close to current levels over the medium term, well below the past average. Diversified economies are expected to maintain relatively robust growth rates.



Source: IMF staff estimates.
Note: EMDEs = emerging market and developing economies; PPP = purchasing power parity. Commodity exporters includes fuel and nonfuel primary products exporters, as indicated in Table D of the Statistical Appendix, plus Brazil and Peru.

Figure 1.14. Per Capita Real GDP Growth
(Percent)

Prospects for emerging market and developing economies to narrow their per capita income gaps relative to advanced economies vary across regions.



Source: IMF staff estimates.
Note: Bars denote PPP GDP-weighted averages, red markers indicate the medians, and black markers denote the top and bottom deciles of per capita GDP growth in the country groups. Country groups are defined in Chapter 3 of the April 2015 *World Economic Outlook*. The fuel and nonfuel exporter subgroups are defined in Table D of the Statistical Appendix and cover EMDEs only. AEs = advanced economies; CIS = Commonwealth of Independent States; EMDE = emerging market and developing economy; LAC = Latin America and the Caribbean; MENAP = Middle East, North Africa, Afghanistan, and Pakistan; PPP = purchasing power parity; SSA = sub-Saharan Africa.

decline over the five-year forecast horizon. Most economies with per capita growth below that of advanced economies are either commodity (mostly oil) exporters or small states (Figure 1.14)—they account for a smaller share of the total population and GDP of all emerging market and developing economies (about 11 percent). If the sample is limited to low-income developing countries, the share of the countries not expected to narrow their per capita income gap is one-quarter (14 countries), but these represent a larger share of the total population and GDP for the country group (some 30 percent).

Convergence prospects vary across regions. Income convergence is projected to continue in China, India, and east Asia more broadly, as well as in emerging Europe and parts of the Commonwealth of Independent States. By contrast, per capita growth in sub-Saharan Africa, Latin America and the Caribbean, and the Middle East, North Africa, Pakistan, and Afghanistan region is projected to fall short of or barely exceed that in advanced economies over the next few years, reflecting the weak performance of the many commodity exporters in these regions.

The Forecast

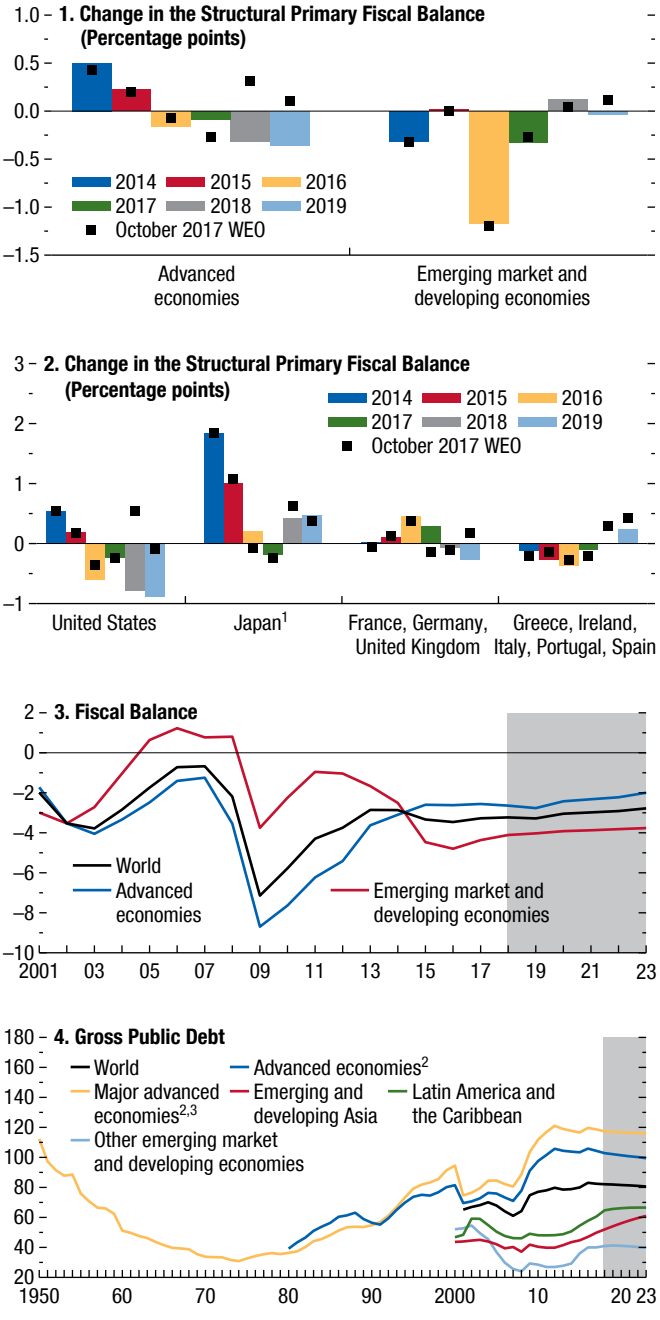
Policy Assumptions

The aggregate fiscal policy stance for advanced economies is projected to remain expansionary in 2018 and especially in 2019, while it is projected to turn broadly neutral in emerging market and developing economies (Figure 1.15). Relative to the October 2017 WEO assumptions, the forecast assumes a looser fiscal policy stance in 2018 and 2019, which reflects, to a large extent, expected weaker US structural fiscal balances in light of the recently legislated overhaul of the tax code. Fiscal policy is expected to be mildly contractionary in advanced economies for 2020–22 and more clearly contractionary in 2023, when the investment expensing provisions of US tax reform begin to expire.

On monetary policy, the forecast assumes faster normalization of the policy interest rate in the United States than projected in the October 2017 WEO, reflecting stronger demand and inflation pressure under more expansionary fiscal policy. The US policy interest rate target is projected to rise to about 2.5 percent by the end of 2018 and about 3.5 percent by the end of 2019, declining back to a long-term equilibrium rate of slightly less than 3 percent in 2022. In the euro area and Japan, the forecast assumes that monetary policy will remain very accommodative. Short-term rates are projected to remain negative in the euro area until mid-2019 and close to zero in Japan over the five-year forecast horizon. The assumed monetary policy stances across emerging market economies and the revisions relative to October 2017 vary, reflecting these economies' diverse cyclical positions.

Figure 1.15. Fiscal Indicators
(Percent of GDP, unless noted otherwise)

The fiscal policy stance is projected to remain expansionary in advanced economies in 2018 and especially 2019, while it is projected to turn broadly neutral in emerging market and developing economies.



Source: IMF staff estimates.
Note: WEO = *World Economic Outlook*.
[1]Japan's latest figures reflect comprehensive methodological revisions adopted in December 2016.
[2]Data through 2000 exclude the United States.
[3]Canada, France, Germany, Italy, Japan, United Kingdom, United States.

Assumptions on Financial Conditions and Commodity Prices

Global financial conditions are assumed to remain generally accommodative during 2018–19. Continued easing of lending conditions, notably in the euro area, is expected to offset the anticipated gradual rise in long-term interest rates, while the normalization of monetary policy in the United States and the United Kingdom is expected to proceed without triggering large or protracted increases in financial market volatility. Except for some vulnerable economies, most emerging markets are expected to face accommodative financial conditions under the baseline forecast, with higher policy rates but sustained risk appetite (continuing the recent record of generally contained sovereign bond spreads and strong equity market performance in most cases).

The IMF's commodity price index is expected to rise about 11.9 percent in 2018 relative to its 2017 average (bringing the cumulative increase from 2016 to about 28.9 percent) and then to fall about 3.7 percent in 2019. Oil prices are expected to average $62.3 a barrel in 2018 (up from $52.8 in 2017 and well above the projection of $50.2 a barrel in the October 2017 WEO). As supply recovers, oil prices are expected to decline to $58.2 a barrel in 2019, and further to about $53.6 a barrel in 2023. Metal prices are expected to strengthen by 13 percent in 2018, following a 22.2 percent increase in 2017 spurred by stronger global demand, and remain broadly stable thereafter.

Global Growth Outlook: Short-Term Strengthening, Medium-Term Moderation

Global growth is projected to strengthen from 3.8 percent in 2017 to 3.9 percent in 2018 and 2019, driven by a projected pickup in growth in emerging market and developing economies and resilient growth in advanced economies (Table 1.1). The forecast for 2018 and 2019 is stronger than in the October 2017 WEO by 0.2 percentage point for each year, with positive revisions compared with the October 2017 WEO for emerging market and developing economies and especially for advanced economies. The global effects of US fiscal policy changes account for almost half of the global growth upgrade for 2018–19 compared with October. Beyond 2019, global growth is projected to gradually decline to 3.7 percent by the end of the forecast horizon. The

Table 1.1. Overview of the *World Economic Outlook* Projections

(Percent change, unless noted otherwise)

		Projections		Difference from January 2018 *WEO Update*[1]		Difference from October 2017 WEO[1]	
	2017	2018	2019	2018	2019	2018	2019
World Output	**3.8**	**3.9**	**3.9**	**0.0**	**0.0**	**0.2**	**0.2**
Advanced Economies	**2.3**	**2.5**	**2.2**	**0.2**	**0.0**	**0.5**	**0.4**
United States	2.3	2.9	2.7	0.2	0.2	0.6	0.8
Euro Area	2.3	2.4	2.0	0.2	0.0	0.5	0.3
Germany	2.5	2.5	2.0	0.2	0.0	0.7	0.5
France	1.8	2.1	2.0	0.2	0.1	0.3	0.1
Italy	1.5	1.5	1.1	0.1	0.0	0.4	0.2
Spain	3.1	2.8	2.2	0.4	0.1	0.3	0.2
Japan	1.7	1.2	0.9	0.0	0.0	0.5	0.1
United Kingdom	1.8	1.6	1.5	0.1	0.0	0.1	–0.1
Canada	3.0	2.1	2.0	–0.2	0.0	0.0	0.3
Other Advanced Economies[2]	2.7	2.7	2.6	0.1	0.0	0.2	0.1
Emerging Market and Developing Economies	**4.8**	**4.9**	**5.1**	**0.0**	**0.1**	**0.0**	**0.1**
Commonwealth of Independent States	2.1	2.2	2.1	0.0	0.0	0.1	0.0
Russia	1.5	1.7	1.5	0.0	0.0	0.1	0.0
Excluding Russia	3.6	3.5	3.6	0.1	0.1	0.2	0.1
Emerging and Developing Asia	6.5	6.5	6.6	0.0	0.0	0.0	0.1
China	6.9	6.6	6.4	0.0	0.0	0.1	0.1
India[3]	6.7	7.4	7.8	0.0	0.0	0.0	0.0
ASEAN-5[4]	5.3	5.3	5.4	0.0	0.1	0.1	0.1
Emerging and Developing Europe	5.8	4.3	3.7	0.3	–0.1	0.8	0.4
Latin America and the Caribbean	1.3	2.0	2.8	0.1	0.2	0.1	0.4
Brazil	1.0	2.3	2.5	0.4	0.4	0.8	0.5
Mexico	2.0	2.3	3.0	0.0	0.0	0.4	0.7
Middle East, North Africa, Afghanistan, and Pakistan	2.6	3.4	3.7	–0.2	0.2	–0.1	0.2
Saudi Arabia	–0.7	1.7	1.9	0.1	–0.3	0.6	0.3
Sub-Saharan Africa	2.8	3.4	3.7	0.1	0.2	0.0	0.3
Nigeria	0.8	2.1	1.9	0.0	0.0	0.2	0.2
South Africa	1.3	1.5	1.7	0.6	0.8	0.4	0.1
Memorandum							
European Union	2.7	2.5	2.1	0.2	0.0	0.4	0.3
Low-Income Developing Countries	4.7	5.0	5.3	–0.2	0.0	–0.2	0.1
Middle East and North Africa	2.2	3.2	3.6	–0.2	0.3	0.0	0.4
World Growth Based on Market Exchange Rates	3.2	3.4	3.3	0.1	0.1	0.3	0.3
World Trade Volume (goods and services)	**4.9**	**5.1**	**4.7**	**0.5**	**0.3**	**1.1**	**0.8**
Imports							
Advanced Economies	4.0	5.1	4.5	0.7	0.0	1.3	0.9
Emerging Market and Developing Economies	6.4	6.0	5.6	0.5	0.6	1.1	0.7
Exports							
Advanced Economies	4.2	4.5	3.9	0.3	–0.1	0.9	0.5
Emerging Market and Developing Economies	6.4	5.1	5.3	0.4	0.7	0.6	1.0
Commodity Prices (US dollars)							
Oil[5]	23.3	18.0	–6.5	6.3	–2.2	18.2	–7.2
Nonfuel (average based on world commodity export weights)	6.8	5.6	0.5	6.1	–0.5	5.1	1.0
Consumer Prices							
Advanced Economies	1.7	2.0	1.9	0.1	–0.2	0.3	–0.1
Emerging Market and Developing Economies[6]	4.0	4.6	4.3	0.1	0.0	0.2	0.2
London Interbank Offered Rate (percent)							
On US Dollar Deposits (six month)	1.5	2.4	3.4	0.1	0.0	0.5	0.5
On Euro Deposits (three month)	–0.3	–0.3	0.0	0.0	0.1	0.0	0.0
On Japanese Yen Deposits (six month)	0.0	0.0	0.1	0.0	0.0	–0.2	–0.1

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during January 26–February 23, 2018. Economies are listed on the basis of economic size. The aggregated quarterly data are seasonally adjusted.

[1]Difference based on rounded figures for the current, January 2018 *World Economic Outlook Update*, and October 2017 *World Economic Outlook* forecasts.

[2]Excludes the Group of Seven (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.

[3]For India, data and forecasts are presented on a fiscal year basis and GDP from 2011 onward is based on GDP at market prices with fiscal year 2011/12 as a base year.

[4]Indonesia, Malaysia, Philippines, Thailand, Vietnam.

Table 1.1 *(continued)*

	Year over Year				Q4 over Q4[7]			
			Projections				Projections	
	2016	2017	2018	2019	2016	2017	2018	2019
World Output	**3.2**	**3.8**	**3.9**	**3.9**	**3.2**	**4.0**	**3.9**	**3.8**
Advanced Economies	**1.7**	**2.3**	**2.5**	**2.2**	**2.0**	**2.6**	**2.4**	**2.0**
United States	1.5	2.3	2.9	2.7	1.8	2.6	3.0	2.3
Euro Area	1.8	2.3	2.4	2.0	2.0	2.7	2.2	2.0
Germany	1.9	2.5	2.5	2.0	1.9	2.9	2.5	1.9
France	1.2	1.8	2.1	2.0	1.2	2.5	1.8	2.0
Italy	0.9	1.5	1.5	1.1	1.1	1.6	1.3	1.1
Spain	3.3	3.1	2.8	2.2	3.0	3.1	2.5	2.1
Japan	0.9	1.7	1.2	0.9	1.5	2.1	0.8	–0.1
United Kingdom	1.9	1.8	1.6	1.5	2.0	1.4	1.6	1.6
Canada	1.4	3.0	2.1	2.0	2.0	2.9	2.1	1.9
Other Advanced Economies[2]	2.3	2.7	2.7	2.6	2.5	2.9	2.7	2.8
Emerging Market and Developing Economies	**4.4**	**4.8**	**4.9**	**5.1**	**4.3**	**5.2**	**5.2**	**5.2**
Commonwealth of Independent States	0.4	2.1	2.2	2.1	0.8	1.9	2.3	1.6
Russia	–0.2	1.5	1.7	1.5	0.6	1.5	2.1	1.3
Excluding Russia	1.9	3.6	3.5	3.6	. . .	. . .	. . .	. . .
Emerging and Developing Asia	6.5	6.5	6.5	6.6	6.2	6.7	6.5	6.6
China	6.7	6.9	6.6	6.4	6.8	6.8	6.5	6.4
India[3]	7.1	6.7	7.4	7.8	6.0	7.5	7.4	7.8
ASEAN-5[4]	5.0	5.3	5.3	5.4	4.8	5.4	5.4	5.5
Emerging and Developing Europe	3.2	5.8	4.3	3.7	3.7	5.9	3.5	3.7
Latin America and the Caribbean	–0.6	1.3	2.0	2.8	–0.8	1.7	2.3	2.4
Brazil	–3.5	1.0	2.3	2.5	–2.4	2.2	3.1	2.3
Mexico	2.9	2.0	2.3	3.0	3.2	1.5	3.0	2.8
Middle East, North Africa, Afghanistan, and Pakistan	4.9	2.6	3.4	3.7	. . .	. . .	. . .	. . .
Saudi Arabia	1.7	–0.7	1.7	1.9	2.2	–1.2	2.3	2.1
Sub-Saharan Africa	1.4	2.8	3.4	3.7	. . .	. . .	. . .	. . .
Nigeria	–1.6	0.8	2.1	1.9	. . .	. . .	. . .	. . .
South Africa	0.6	1.3	1.5	1.7	1.0	1.9	0.7	2.3
Memorandum								
European Union	2.0	2.7	2.5	2.1	2.1	2.9	2.3	2.0
Low-Income Developing Countries	3.5	4.7	5.0	5.3	. . .	. . .	. . .	. . .
Middle East and North Africa	4.9	2.2	3.2	3.6	. . .	. . .	. . .	. . .
World Growth Based on Market Exchange Rates	2.5	3.2	3.4	3.3	2.6	3.4	3.3	3.0
World Trade Volume (goods and services)	**2.3**	**4.9**	**5.1**	**4.7**	**. . .**	**. . .**	**. . .**	**. . .**
Imports								
Advanced Economies	2.7	4.0	5.1	4.5	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	1.8	6.4	6.0	5.6	. . .	. . .	. . .	. . .
Exports								
Advanced Economies	2.0	4.2	4.5	3.9	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	2.6	6.4	5.1	5.3	. . .	. . .	. . .	. . .
Commodity Prices (US dollars)								
Oil[5]	–15.7	23.3	18.0	–6.5	16.2	19.6	3.2	–5.9
Nonfuel (average based on world commodity export weights)	–1.5	6.8	5.6	0.5	10.3	1.9	7.0	0.3
Consumer Prices								
Advanced Economies	0.8	1.7	2.0	1.9	1.2	1.7	2.0	2.0
Emerging Market and Developing Economies[6]	4.3	4.0	4.6	4.3	3.6	3.6	3.9	3.9
London Interbank Offered Rate (percent)								
On US Dollar Deposits (six month)	1.1	1.5	2.4	3.4	. . .	. . .	. . .	. . .
On Euro Deposits (three month)	–0.3	–0.3	–0.3	0.0	. . .	. . .	. . .	. . .
On Japanese Yen Deposits (six month)	0.0	0.0	0.0	0.1	. . .	. . .	. . .	. . .

[5]Simple average of prices of UK Brent, Dubai Fateh, and West Texas Intermediate crude oil. The average price of oil in US dollars a barrel was $52.81 in 2017; the assumed price based on futures markets is $62.30 in 2018 and $58.20 in 2019.
[6]Excludes Argentina and Venezuela. See country-specific notes for Argentina and Venezuela in the "Country Notes" section of the Statistical Appendix.
[7]For World Output, the quarterly estimates and projections account for approximately 90 percent of annual world output at purchasing-power-parity weights. For Emerging Market and Developing Economies, the quarterly estimates and projections account for approximately 80 percent of annual emerging market and developing economies' output at purchasing-power-parity weights.

slowdown is entirely because of advanced economies, where growth is projected to moderate in line with their modest potential growth; growth across emerging market and developing economies is expected to stabilize close to the current level.

Advanced Economies

Advanced economies are projected to grow at 2.5 percent in 2018—0.2 percentage point higher than in 2017—and 2.2 percent in 2019. For both years, this forecast is considerably stronger than the October WEO forecast (0.5 and 0.4 percentage point higher for 2018 and 2019, respectively). Positive revisions are broad based, reflecting stronger prospects for the euro area and Japan and especially the projected domestic and spillover effects of expansionary fiscal policy in the United States. Growth is projected to decline to 1.5 percent over the medium term, broadly in line with modest potential growth. The reversal of some of the positive short-term output effects of US tax reform beyond 2020 contributes to this decline.[4] Despite this slowdown, GDP is projected to remain above potential in 2023 in many advanced economies, including the United States and the euro area.[5]

In the *United States*, growth is expected to rise from 2.3 percent in 2017 to 2.9 percent in 2018, before moderating slightly to 2.7 percent in 2019 (0.6 and 0.8 percentage point stronger than projected for 2018 and 2019, respectively, in the October WEO). The upward revision reflects stronger-than-expected activity in 2017, firmer external demand, and the expected macroeconomic impact of the December 2017 tax reform—particularly lower corporate tax rates and the temporary allowance for full expensing of investment, which is anticipated to stimulate short-term activity. The revision also reflects higher public spending following the February 2018 bipartisan budget agreement. Fiscal policy changes are projected to add to growth through 2020, so that US real GDP is 1.2 percent higher by 2020 than in a projection without the tax policy changes. Given the increased fiscal deficit, which will require adjustment down the road, and the temporary nature of some provisions, growth is expected to be lower than in previous forecasts for a few years from 2022 onward, offsetting some of the earlier growth gains.

The above-trend growth rates of the *euro area* and *Japan*—important contributors to the long-awaited strengthening of economic activity in advanced economies—are expected to continue during 2018–19. The recovery in the *euro area* is projected to pick up slightly from 2.3 percent in 2017 to 2.4 percent this year, before moderating to 2 percent in 2019. The forecast is higher than in the October WEO by 0.5 and 0.3 percentage point for 2018 and 2019, respectively, reflecting stronger-than-expected domestic demand across the currency area, supportive monetary policy, and improved external demand prospects. Medium-term growth in the *euro area* is projected at 1.4 percent, held back by low productivity amid weak reform efforts and unfavorable demographics. *Japan*'s growth is projected to moderate to 1.2 percent in 2018 (from a strong above-trend outturn of 1.7 percent in 2017) before slowing further to 0.9 percent in 2019. The upward revision of 0.5 percentage point in 2018 and 0.1 percentage point in 2019 relative to the October WEO reflects more favorable external demand prospects, rising private investment, and the supplementary budget for 2018. Japan's medium-term prospects, however, remain weak, owing largely to a shrinking labor force.

Emerging Market and Developing Economies

Growth in emerging market and developing economies is expected to increase further—from 4.8 percent in 2017 to 4.9 percent in 2018 and 5.1 percent in 2019 (Table 1.1). Although the high growth rate reflects primarily continued strong economic performance in emerging Asia, the projected pickup in growth reflects improved prospects for commodity exporters after three years of very weak economic activity. Growth forecast revisions were positive for 2019: 0.1 percentage point for the aggregate, with the largest positive revisions for emerging Europe and Latin America. Beyond 2019, growth in emerging market and developing economies is projected to stabilize at about 5 percent over the medium term. This reflects some modest further strengthening in economic growth in commodity exporters, though to rates much more modest than over the past two decades; a steady decline in China's growth rate to a level that is still well above the emerging market and developing economy average; a gradual increase in India's growth rate as structural reforms raise poten-

[4]The temporary full expensing of investment implies more investment up front, but less investment down the road; see Box 1.5.

[5]Box 1.7 discusses in more detail the outlook for individual advanced economies.

tial output; and continued strong growth in other commodity importers.[6]

Emerging Asia, which is forecast to continue growing at about 6½ percent during 2018–19, remains the most important engine of global growth. In *China*, growth is projected to soften slightly from 6.9 percent in 2017 to 6.6 percent in 2018 and 6.4 percent in 2019. The forecast is higher (by 0.1 percentage point in both 2018 and 2019) relative to the October WEO, reflecting an improved external demand outlook. Over the medium term, the economy is projected to continue rebalancing away from investment toward private consumption and from industry to services, but nonfinancial debt is expected to continue rising as a share of GDP, and the accumulation of vulnerabilities clouds the medium-term outlook. Growth in *India* is projected to increase from 6.7 percent in 2017 to 7.4 percent in 2018 and 7.8 percent in 2019 (unchanged from the October WEO), lifted by strong private consumption as well as fading transitory effects of the currency exchange initiative and implementation of the national goods and services tax. Over the medium term, growth is expected to gradually rise with continued implementation of structural reforms that raise productivity and incentivize private investment.

Growth in emerging and developing Europe, now estimated at close to 6 percent in 2017, is projected to moderate to 4.3 percent in 2018 and 3.7 percent in 2019, supported by a favorable external environment with easy financial conditions and stronger export demand from the euro area and, for *Turkey*, an accommodative policy stance.

A gradual growth recovery continues in Latin America and the Caribbean, a region severely affected by the 2014–16 decline in commodity prices; growth is forecast to rise to 2.0 percent in 2018 and 2.8 percent in 2019. Following a deep recession in 2015–16, *Brazil*'s economy returned to growth in 2017 (1.0 percent) and is expected to improve to 2.3 percent in 2018 and 2.5 percent in 2019, buoyed by stronger private consumption and investment. Medium-term growth is set to moderate to 2.2 percent, weighed down by population aging and stagnant productivity.

Improved oil export revenue, stronger business confidence, and looser monetary policy helped *Russia*'s economy return to growth in 2017. Real GDP is projected to increase 1.7 percent this year, before moderating slightly to 1.5 percent through the rest of the projection horizon, weighed down by structural headwinds and the effect of sanctions on investment.

Growth in the Middle East, North Africa, Afghanistan, and Pakistan region is also expected to pick up in 2018 and 2019, but remains subdued at about 3½ percent. While stronger oil prices are helping a recovery in domestic demand in oil exporters, including *Saudi Arabia*, the fiscal adjustment that is still needed is projected to weigh on growth prospects.

Growth in sub-Saharan Africa is also projected to rise gradually during 2018–19 to 3.4 percent and 3.7 percent, respectively, as the challenging outlook in commodity exporters gradually improves. Growth in *South Africa* is expected to strengthen from 1.3 percent in 2017 to 1.5 percent in 2018 and 1.7 percent in 2019 (stronger than in the October WEO by 0.4 and 0.1 percentage point, respectively, for 2018 and 2019). Business confidence is likely to gradually firm up with the change in the political leadership, but growth prospects remain weighed down by structural bottlenecks. The medium-term outlook is subdued, with growth expected to stabilize at 1.8 percent over 2020–23.

Inflation Outlook

With supply effects and stronger demand putting upward pressure on commodity prices—and a strengthening global outlook narrowing output gaps—headline inflation is picking up, and core inflation is expected to rise gradually as wage dynamics start reflecting tighter labor markets.[7]

As shown in Table 1.1, headline inflation rates in advanced economies are projected to pick up to about 2 percent in 2018–19 (0.3 percentage point higher for 2018 than in the October WEO) from 1.7 percent in 2017, mostly as above-trend growth and closing output gaps add to price pressures.

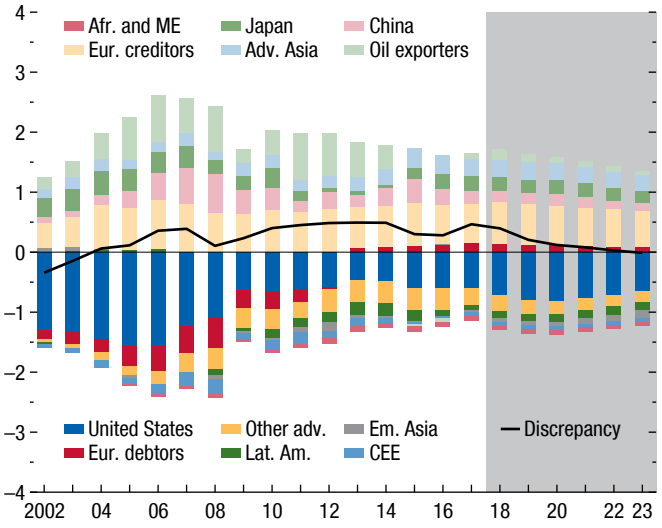
Core consumer price inflation (CPI)—excluding fuel and food prices—is expected to vary across the advanced economy group. In the *United States*, where output is set to rise above potential following the expected sizable fiscal expansion, core CPI is projected to increase from 1.8 percent in 2017 to 2 percent in 2018 and 2.5 percent in 2019, before declining to 2.3 percent over the medium term.

[6]Box 1.8 discusses in more detail the outlook for individual emerging market and developing economies.

[7]See Box 1.9 for details of the inflation outlook for individual countries.

Figure 1.16. Global Current Account Balance
(Percent of world GDP)

Current account balances are expected to remain broadly at their 2017–18 levels over the medium term.



Source: IMF staff estimates.
Note: Adv. Asia = advanced Asia (Hong Kong SAR, Korea, Singapore, Taiwan Province of China); Afr. and ME = Africa and the Middle East (Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Jordan, Kenya, Lebanon, Morocco, South Africa, Sudan, Tanzania, Tunisia); CEE = central and eastern Europe (Belarus, Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovak Republic, Turkey, Ukraine); Em. Asia = emerging Asia (India, Indonesia, Pakistan, Philippines, Thailand, Vietnam); Eur. creditors = European creditors (Austria, Belgium, Denmark, Finland, Germany, Luxembourg, Netherlands, Norway, Sweden, Switzerland); Eur. debtors = European debtors (Cyprus, Greece, Ireland, Italy, Portugal, Spain, Slovenia); Lat. Am. = Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay); Oil exporters = Algeria, Azerbaijan, Iran, Kazakhstan, Kuwait, Nigeria, Oman, Qatar, Russia, Saudi Arabia, United Arab Emirates, Venezuela; Other adv. = other advanced economies (Australia, Canada, France, Iceland, New Zealand, United Kingdom).

The Federal Reserve's preferred measure—core personal consumption expenditure price inflation—is projected to increase to 1.7 percent in 2018 and 2.2 percent in 2019 (from 1.5 percent in 2017). In the *euro area*, with growth projected at above-trend rates over 2018–19, core CPI is expected to increase from 1.1 percent in 2017 to 1.2 percent in 2018 and 1.7 percent in 2019. Core CPI is projected to gradually increase to 2 percent by 2021 as output gaps narrow across the currency area and inflation expectations strengthen. In the *United Kingdom*, core CPI is expected to increase from 2.4 percent in 2017 to 2.5 percent this year, before moderating to 2.2 percent in 2019 (and further to 2 percent over the medium term) as interest rate hikes and the withdrawal of monetary support proceeds.

Excluding Venezuela (where inflation this year and next is expected to exceed 10,000 percent), headline inflation in emerging market and developing economies is expected to increase to 4.6 percent this year, from 4.0 percent in 2017. The projection for 2018 is stronger by 0.2 percentage point relative to the October WEO. In 2019 and beyond, inflation is expected to moderate to about 4.0 percent as energy prices stabilize and output gaps close. Compared with advanced economies, there is considerable diversity in inflation rates among emerging market and developing economies, reflecting heterogeneity in cyclical positions, central bank credibility, and inflation targets.

External Sector Outlook

Current Account Positions

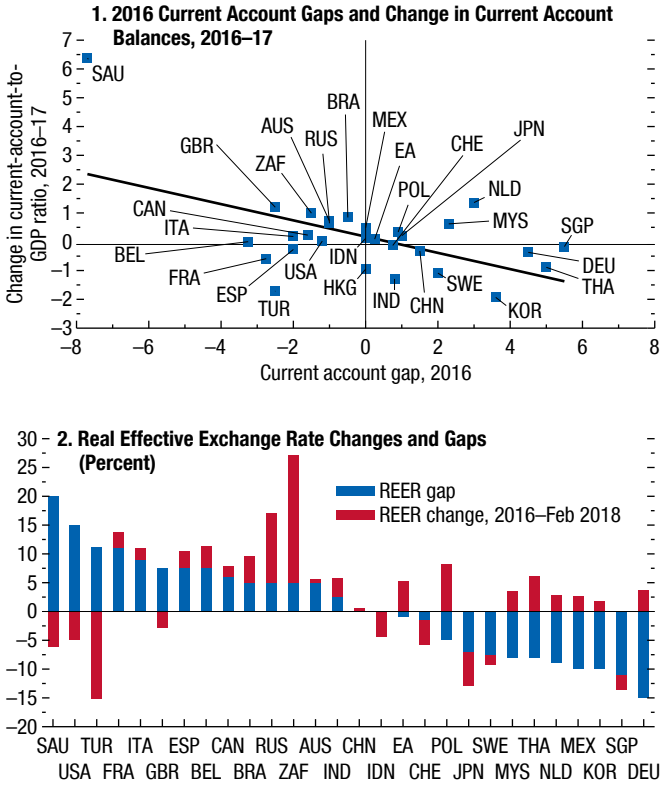
Current account balances in 2017, on the whole, have remained broadly stable compared with their 2016 levels (Figure 1.16). The most notable change has been an improvement in the current account balance of oil exporters (close to 3 percent of their GDP), reflecting a partial recovery in their export prices.

Forecasts for 2018 and 2019 indicate some further improvement in the current account balances of oil exporters (as average oil prices are projected to exceed those in 2017), as well as a widening of the US current account deficit, driven by expansionary fiscal policy (partially offset by stronger external demand). Over the medium term, current account balances are projected to remain broadly stable at their 2017–18 levels, with some narrowing of the US current account deficit as the expansionary effects of fiscal policy fade, mirrored by some narrowing of surpluses in China and to a lesser extent in Europe.

As highlighted in the IMF's 2017 *External Sector Report*, current account imbalances in 2016 were too large in relation to country-specific norms consistent with underlying fundamentals and desirable policies. As shown in the first panel of Figure 1.17, current account balances in 2017 moved in a direction consistent with some reduction in those excess imbalances, with medium-term current account projections suggesting a further reduction. However, the projected changes in current account balances for some of the world's largest economies suggest only a modest narrowing of imbalances (for example, Germany) or some widening (for example, the United States).

Figure 1.17. Real Exchange Rates and Current Account Balances in Relation to Economic Fundamentals

In 2017, current account balances moved modestly in directions consistent with reducing 2016 excess imbalances. Relative to 2016, real effective exchange rates have also moved slightly in a direction consistent with narrowing 2016 exchange rate gaps.

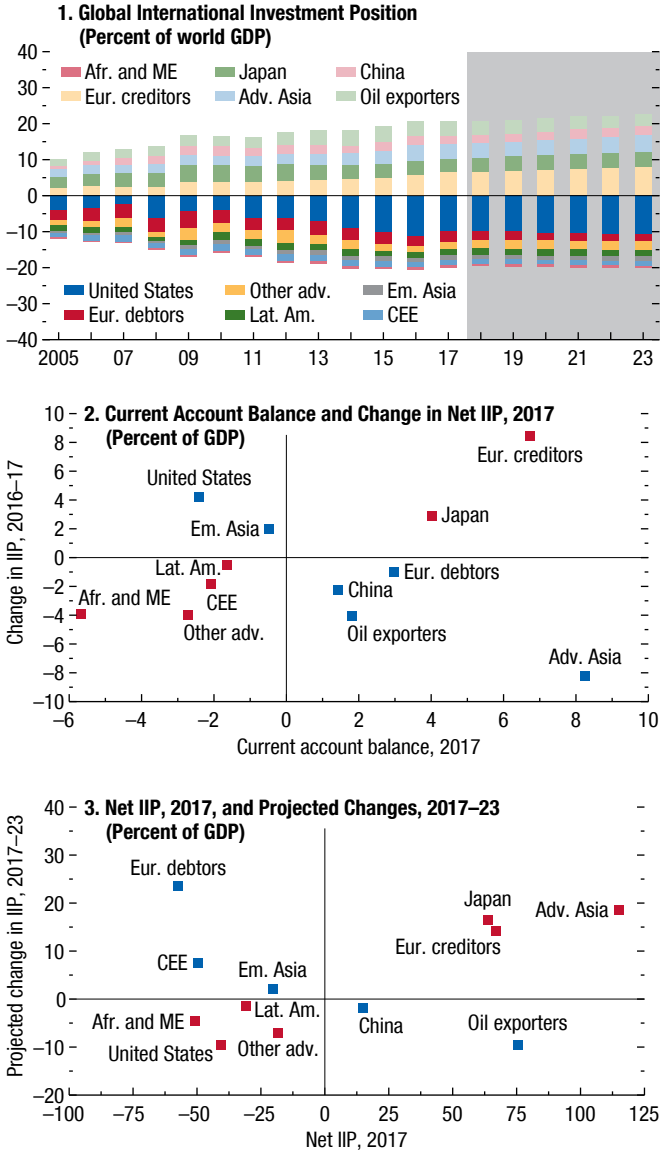


Source: IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes. EA = euro area; REER = real effective exchange rate.

Panel 2 of Figure 1.17 shows changes in real effective exchange rates between 2016 and their levels as of February 2018, together with the exchange rate gaps for 2016 identified in the 2017 *External Sector Report*. Real effective exchange rates have also, on average, moved modestly in a direction consistent with a narrowing of the 2016 gaps. Of course, changes in macroeconomic fundamentals since 2016 have affected not only real exchange rates and current account balances, but also their equilibrium value. An example is the strengthening of the terms of trade for most commodity exporters, which is reflected in their real appreciations depicted in panel 2. The 2018 *External Sector Report* will discuss how changes in fundamentals and desirable policies have affected the

Figure 1.18. Net International Investment Position

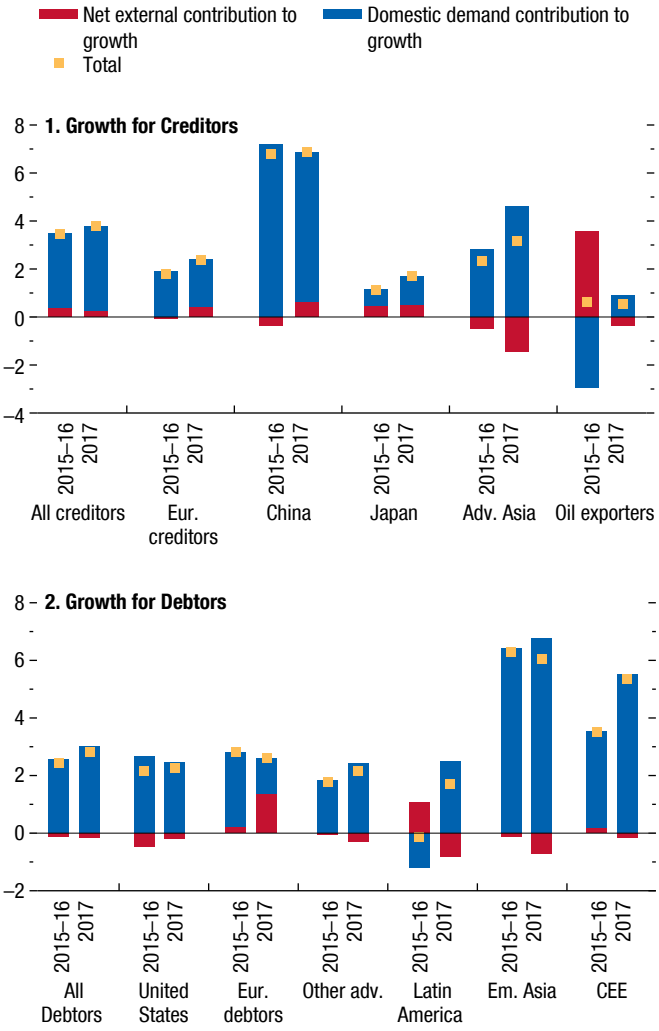
Creditor and debtor net international investment positions are projected to widen slightly over the medium term.



Source: IMF staff estimates.
Note: Adv. Asia = advanced Asia (Hong Kong SAR, Korea, Singapore, Taiwan Province of China); Afr. and ME = Africa and the Middle East (Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Jordan, Kenya, Lebanon, Morocco, South Africa, Sudan, Tanzania, Tunisia); CEE = central and eastern Europe (Belarus, Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovak Republic, Turkey, Ukraine); Em. Asia = emerging Asia (India, Indonesia, Pakistan, Philippines, Thailand, Vietnam); Eur. creditors = European creditors (Austria, Belgium, Denmark, Finland, Germany, Luxembourg, Netherlands, Norway, Sweden, Switzerland); Eur. debtors = European debtors (Cyprus, Greece, Ireland, Italy, Portugal, Spain, Slovenia); IIP = international investment position; Lat. Am. = Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay); Oil exporters = Algeria, Azerbaijan, Iran, Kazakhstan, Kuwait, Nigeria, Oman, Qatar, Russia, Saudi Arabia, United Arab Emirates, Venezuela; Other adv. = Other advanced economies (Australia, Canada, France, Iceland, New Zealand, United Kingdom).

Figure 1.19. Growth for Creditors and Debtors
(Percent)

Growth in domestic demand was faster in creditor countries than in debtor countries in 2017, but the contribution of net external demand remained positive in creditor countries and negative in debtor countries.



Source: IMF staff calculations.
Note: Adv. Asia = advanced Asia (Hong Kong SAR, Korea, Singapore, Taiwan Province of China); CEE = central and eastern Europe (Belarus, Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Slovak Republic, Turkey, Ukraine); Em. Asia = emerging Asia (India, Indonesia, Pakistan, Philippines, Thailand, Vietnam); Eur. creditors = European creditors (Austria, Belgium, Denmark, Finland, Germany, Luxembourg, Netherlands, Norway, Sweden, Switzerland); Eur. debtors = European debtors (Cyprus, Greece, Ireland, Italy, Portugal, Spain, Slovenia); Latin America = Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay; Other adv. = other advanced economies (Australia, Canada, France, Iceland, New Zealand, United Kingdom); Oil exporters = Algeria, Azerbaijan, Iran, Kazakhstan, Kuwait, Nigeria, Oman, Qatar, Russia, Saudi Arabia, United Arab Emirates, Venezuela.

assessment of excess current account imbalances and exchange rate gaps for 2017.

International Investment Positions

Changes in international investment positions reflect both net financial flows and valuation changes arising from fluctuations in exchange rates and asset prices. As panel 1 in Figure 1.18 shows, over the next five years, creditor and debtor positions as a share of world GDP are projected to widen slightly. On the creditor side, this widening is explained primarily by the growing creditor positions of a group of European advanced economies—a result of large projected current account surpluses. On the debtor side, this reflects some increase in the debtor position of the United States and other advanced economies (a group including Canada, France, and the United Kingdom, among others), partially offset by a decline in the debtor position of euro area debtor countries.[8]

Similar trends are highlighted in panel 3 of Figure 1.18, which shows the projected changes in net international investment positions in percent of domestic GDP across countries and regions between 2017 and 2023 (the last year of the WEO projection horizon). The creditor positions in advanced European economies and Japan are projected at or above 80 percent of their GDP, while the debtor position of the United States is projected to reach 50 percent of GDP. One notable change is the reduction in net international investment position liabilities of a group of euro area debtor countries, including Italy and Spain, which are expected to fall by more than 20 percentage points of their GDP.

Domestic and External Contributions to GDP Growth

Another way to look at the prospects for global rebalancing is to examine the domestic and external contributions to GDP growth in creditor and debtor countries.

Growth in domestic demand was faster in creditor countries than in debtor countries in 2017, as in previous years, primarily reflecting high growth in

[8]Valuation changes can affect the evolution of these positions. For instance, between the end of 2016 and the end of 2017, the US net international investment position improved despite the US current account deficit, given the depreciation of the US dollar over this period, which increased the domestic currency value of foreign currency assets held by US residents (Figure 1.18, panel 2).

China (Figure 1.19). At the same time, the net external contribution to growth was again positive for creditors, driven this time by positive contributions from China, creditor Europe, and Japan. In contrast to the two previous years, the net external contribution to growth in oil exporters was instead negative, reflecting subdued export volumes and a recovery in imports after two years of severe contraction. Among debtor countries, the net external contribution to growth was strong and positive for euro area debtor countries but remained slightly negative for the United States in 2017 and is projected to become more negative in 2018 because of expansionary fiscal policy.

Predicted changes in global macroeconomic policies, together with their potential exchange rate repercussions, could lead flow imbalances to widen again—even further than currently anticipated (should, for instance, the dollar appreciate sharply on expectations of faster tightening of US monetary policy).[9] Stronger reliance on demand growth in some creditor countries, especially those with policy space to support it, such as Germany, would help facilitate domestic and global rebalancing while sustaining world growth over the medium term. In the US economy, which is already close to full employment, a medium-term plan to reverse the rising ratio of public debt, accompanied by fiscal measures to gradually boost domestic capacity along with demand, would help ensure more sustainable growth dynamics while helping contain external imbalances.

Risks

The balance of risks to the near-term forecasts remains two-sided and broadly balanced. The potential for upside growth surprises remains. Business and consumer confidence stayed strong through mid-February, and high-frequency indicators suggest that growth is likely to maintain a solid pace in the months ahead. Expectations of stronger business profitability could lead firms to expand their investment and hiring plans, as slack in labor markets may be larger than currently assessed (Chapter 2 of the October 2017 WEO). Furthermore, the ongoing recovery in investment could foster a rebound in productivity, implying higher potential growth in the period ahead. In turn, an acceleration in potential output would expand the scope for demand to rise before it hits capacity constraints and generates inflation pressure.

On the downside, the early February 2018 market turbulence and the equity market correction in March following the US tariff announcement on steel and aluminum and a range of Chinese products, as well as the announcement by China of retaliatory tariffs on imports from the US, serve as a cautionary reminder that asset prices can correct rapidly and trigger potentially disruptive portfolio adjustments. Although volatility is slightly higher than the pre-February episode lows, and term premiums are not as tightly compressed as they were in the fall, global financial conditions remain highly supportive. A more severe version of the early February episode—financial conditions tighten suddenly, triggered, for instance, by a faster pickup in inflation in the United States—remains a possibility. Depending on the magnitude of the repricing and the extent to which volatility is affected, this could temper the pickup in global demand (Scenario Box 1). In this context, a worsening of trade tensions and the imposition of broader barriers to cross-border trade would not only take a direct toll on economic activity (as shown in Scenario Box 1 of the October 2016 WEO) but would also weaken confidence, with further adverse repercussions.

Beyond the next few quarters, risks to the growth outlook are skewed to the downside. Concerns include a possible buildup of financial vulnerabilities as financial conditions remain easy; an erosion of support for global economic integration that could spur an inward shift in policies; and a host of noneconomic risks, including geopolitical strains, political discord, and climate shocks. The risks are interlinked: if one materializes, it could trigger the others. For example, a shift toward inward-looking policy approaches to cross-border flows of goods, capital, and labor can add to geopolitical tensions and global risk aversion, and noneconomic shocks can weigh on short-term economic activity and on confidence in the longer-term outlook, limiting appetite for investment. The resulting negative impact on growth could be severe, considering that there would be less room to cut interest rates or increase public spending to combat downturns than in the past.

Financial Vulnerabilities

The recent bout of turbulence in financial markets does not eliminate the possibility that financial

[9]The WEO assumes that real effective exchange rates remain broadly stable at the level of the reference period (in this case, February 2018).

conditions will remain accommodative into the medium term, with vulnerabilities building amid a search for yield. As discussed in the April 2018 GFSR, financial conditions are broadly unchanged relative to the fall, even as the US Federal Reserve has raised the policy interest rate and continued to allow a gradual contraction of its bond holdings. As noted in the October 2017 and April 2018 GFSR, investors have moved into riskier asset classes to counteract the low returns of more traditional securities. At the same time, the share of companies with low investment-grade ratings in advanced economy bond indices has increased significantly. Corporate debt remains high in some emerging markets—in some cases with a high reliance on funding sources outside traditional banking relationships. Tighter regulation of nonbank intermediation in China, where nonfinancial corporate sector debt is still rising, is a welcome start of a needed policy response to contain the accumulation of vulnerabilities.

Credit risk may be contained while global growth momentum is strong and borrowing rates are low, but it could come to the fore over the medium term, exposing financial fragility. An eventual global repricing of risk could be triggered by various shifts, including a broad-based pickup in inflation. The US economy operating above potential output amid temporary tax cuts could require faster-than-expected tightening of US monetary policy, which could lead to a rise in term premiums and debt service costs. Depending on its timing, the drag from such tightening of financial conditions could coincide with softer US demand following the reversal of tax cuts, which would amplify its negative international spillovers.

Even as the health of banking systems continues to improve, policies still have a key role to play in managing risks in both the bank and the nonbank financial sectors. Against this backdrop, a broad rollback of stronger financial regulation and oversight since the global financial crisis—both nationally and internationally—could facilitate excessive risk taking, with negative repercussions for global financial stability.

Finally, among emerging potential sources of financial tension, if the recent rapid growth of crypto assets is maintained and draws in larger institutional investors, the linkages with the broader financial system are likely to expand and may create new sources of financial stability risk. More broadly, cybersecurity breaches and cyberattacks on financial architecture could undermine international payment systems and disrupt the flow of goods and services.

Waning Support for Global Integration

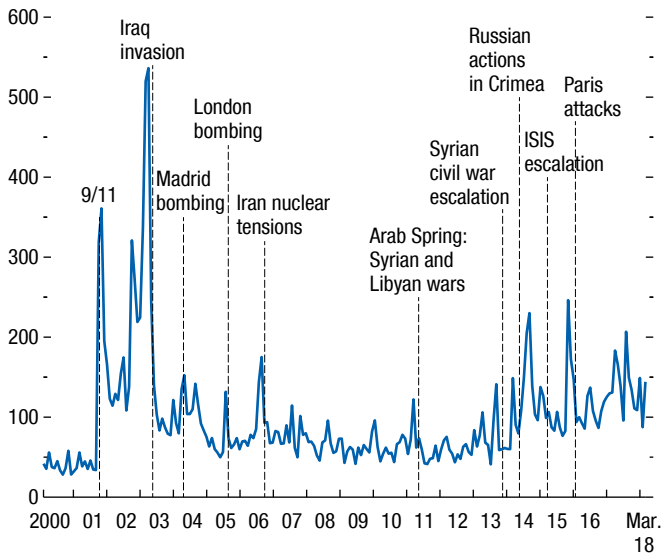
The Comprehensive and Progressive Agreement for Trans-Pacific Partnership—covering 11 countries accounting for approximately 15 percent of global trade—and the announced signing of the agreement to establish the Continental Free Trade Area, which would cover all of Africa, represent encouraging progress on plurilateral trade integration. At the same time, support for globalization appears to have weakened in some advanced economies. Free-trade agreements such as NAFTA and the economic arrangements between the United Kingdom and rest of the European Union are being renegotiated. The United States recently increased tariffs on imported solar panels and washing machines, and announced tariff actions on steel and aluminum and a range of Chinese products, while China announced retaliatory tariffs on imports from the US. An increase in tariffs and nontariff trade barriers could harm market sentiment, disrupt global supply chains, and slow the spread of new technologies, reducing global productivity and investment (Box 1.6 documents a rise in trade-restricting measures in G20 economies in recent years). Greater protectionism would also lower consumer welfare by making tradable consumer goods more expensive. Scenario analysis (IMF 2016a, Box 1) indicates that rising protectionism in all countries—leading to a 10 percent increase in import prices everywhere—lowers global output and consumption by about 1 ¾ percent after 5 years and close to 2 percent in the long term, while global investment and trade fall by even more. Moreover, curbs on immigration would prevent aging societies from effectively counteracting trend declines in the labor force growth rates. Widening external imbalances in some countries, including the United States—where the current account deficit is poised to increase given the projected impact of fiscal stimulus on domestic demand—could add to protectionist pressure. Increased trade tensions also make it more difficult for countries to deal cooperatively with international disruptions or shocks.

Noneconomic Factors

The medium-term global outlook remains clouded by geopolitical tensions (Figure 1.20), notably in east

Figure 1.20. Geopolitical Risk Index
(Index)

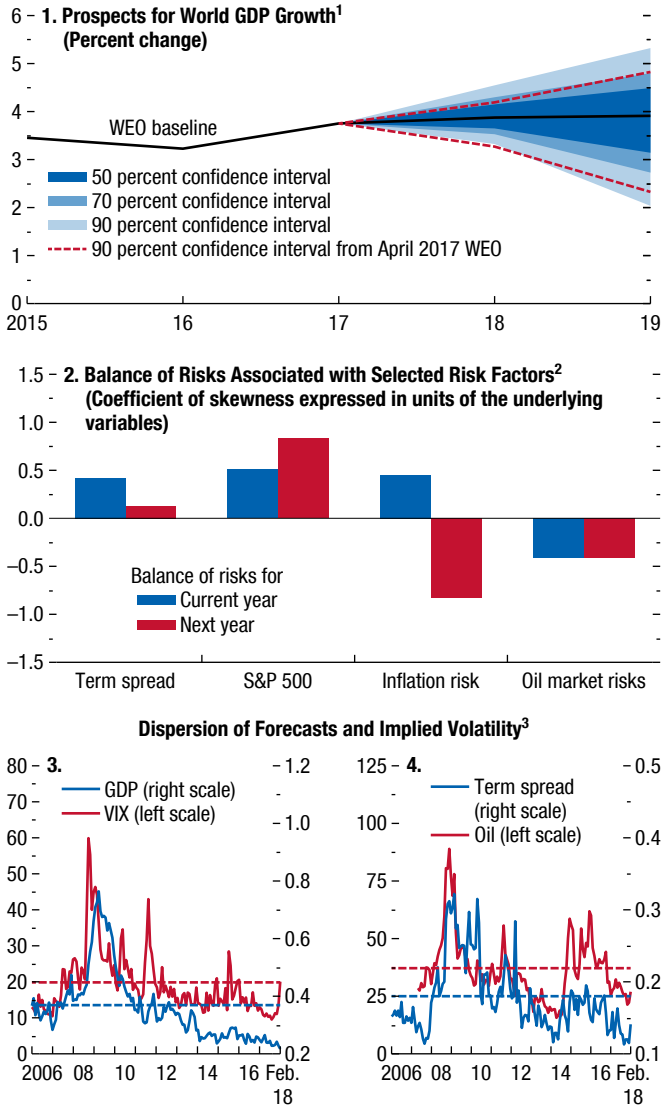
Geopolitical risks remain elevated.



Source: Caldara and Iacoviello (2017).
Note: ISIS = Islamic State.

Figure 1.21. Risks to the Global Outlook

The risks around the central growth forecast are two-sided and broadly even over 2018–19.



Sources: Bloomberg Finance L.P.; Chicago Board Options Exchange (CBOE); Consensus Economics; Haver Analytics; and IMF staff estimates.
[1]The fan chart shows the uncertainty around the April 2018 *World Economic Outlook* (WEO) central forecast with 50, 70, and 90 percent confidence intervals. As shown, the 70 percent confidence interval includes the 50 percent interval, and the 90 percent confidence interval includes the 50 and 70 percent intervals. See Appendix 1.2 of the April 2009 WEO for details. The 90 percent intervals for the current-year and one-year-ahead forecasts from the April 2017 WEO are shown.
[2]The bars depict the coefficient of skewness expressed in units of the underlying variables. The values for inflation risks and oil market risks enter with the opposite sign since they represent downside risks to growth.
[3]GDP measures the purchasing-power-parity-weighted average dispersion of GDP growth forecasts for the Group of Seven economies (Canada, France, Germany, Italy, Japan, United Kingdom, United States), Brazil, China, India, and Mexico. VIX is the CBOE Standard & Poor's (S&P) 500 Implied Volatility Index. Term spread measures the average dispersion of term spreads implicit in interest rate forecasts for Germany, Japan, the United Kingdom, and the United States. Oil is the CBOE crude oil volatility index. Forecasts are from Consensus Economics surveys. Dashed lines represent the average values from 2000 to the present.

Asia and the Middle East. For many countries already severely affected by conflict or its spillovers, the central forecast assumes a gradual easing of strains; more protracted resolution of tensions would delay recovery in these economies.[10]

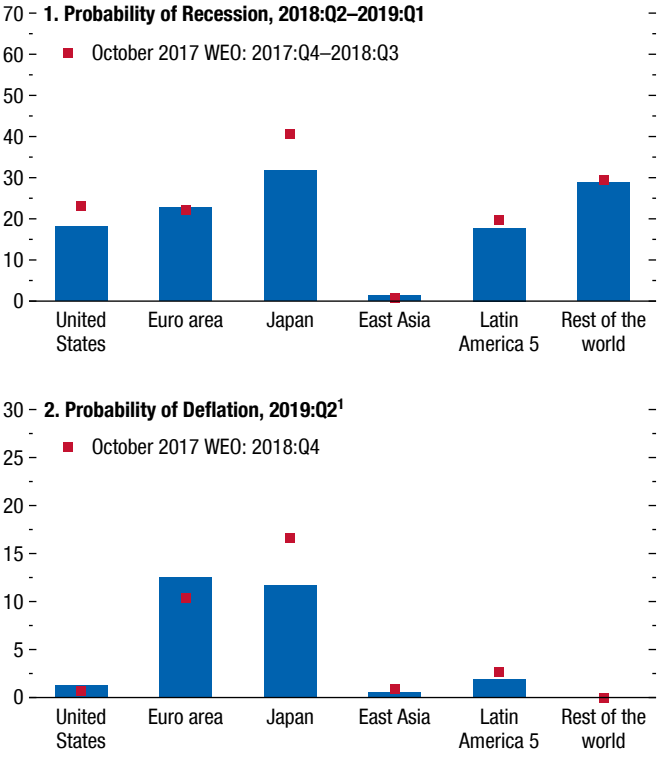
Political uncertainty also gives rise to reform implementation risks or the possibility of reoriented policy agendas, including in the context of upcoming elections or their immediate aftermath in several countries (such as Brazil, Colombia, Italy, and Mexico). Weak governance and large-scale corruption can also undermine confidence and popular support for reforms, taking a toll on economic activity.

Finally, recent extreme weather developments point to the risk of recurrent severe climate events that impose devastating humanitarian costs and economic losses on the affected regions. They may also add to migration flows that could destabilize recipient countries.

[10]Recent research shows that higher geopolitical tensions can weigh on global activity. See, for instance, Caldara and Iacoviello (2017).

Figure 1.22. Recession and Deflation Risks
(Percent)

For most regions, recession and deflation risks over a four-quarter horizon have declined since last fall.



Source: IMF staff estimates.
Note: East Asia comprises China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan Province of China, and Thailand; Latin America 5 comprises Brazil, Chile, Colombia, Mexico, and Peru; Rest of the world comprises Argentina, Australia, Bulgaria, Canada, Czech Republic, Denmark, Israel, New Zealand, Norway, Russia, South Africa, Sweden, Switzerland, Turkey, the United Kingdom, and Venezuela. October 2017 WEO data refer to simulations run in September 2017. WEO = *World Economic Outlook*.
[1]Deflation risk is measured by the four-quarter-ahead probability of deflation occurring together with a negative output gap.

Fan Chart Analysis

A fan chart analysis—based on equity and commodity market data, as well as the dispersion of inflation and term spread projections of private forecasters—shows that uncertainty around the central growth forecast is broadly even, but wider than a year ago (Figure 1.21). The increase is chiefly due to greater dispersion of views about future inflation and oil prices. Continued subdued inflation despite stronger demand appears to have contributed to a divergence in analysts' views about its future behavior. The wider spread of oil price forecasts seems to reflect, in part, differing views on the causes and likely persistence of the recent pickup in prices.

With stronger growth, the probability of a recession over a four-quarter horizon (2018:Q2–2019:Q1) has declined in most regions relative to the probability computed in the October 2017 WEO (Figure 1.22). At the same time, medium-term risks to growth remain salient. As discussed in the April 2018 GFSR, Growth-at-Risk analysis suggests that easy financial conditions imply some upside risk to short-term growth but pose risks to medium-term growth that are well above historical norms. Deflation risks—as measured by the four-quarter-ahead probability of deflation in the second quarter of 2019, occurring together with a negative output gap—have generally declined. In the euro area, the joint probability of four-quarter headline inflation turning negative in the second quarter of 2019 and a negative output gap in the same quarter, which is just above 10 percent, has risen modestly because of the base effect of a peak in oil prices in early 2018 and their subsequent decline.

Policy Priorities

As discussed in the "Recent Developments and Prospects" section, the current recovery is the broadest synchronized upsurge in global activity in close to a decade. Domestic and multilateral policies have a vital role to play in ensuring that the momentum is sustained, remaining output gaps close, and inflation expectations are well anchored. The strength of short-term economic activity provides an opportunity to start rebuilding fiscal buffers where needed and allows for more policy focus on other medium- and long-term priorities: boosting potential growth, reducing inequality, strengthening financial resilience, and coping with climate change.

Policies—Advanced Economies

Monetary Policy: Divergence Warranted by Differences in the State of the Cycle

The upswing in activity across advanced economies has lifted job creation, lowered unemployment rates, and narrowed output gaps. In most advanced economies, however, nominal wage growth and core inflation

remain subdued, and market expectations of future inflation point to a slow convergence path back to central bank targets. Set against the backdrop of many years of subpar growth and low inflation, macroeconomic conditions in advanced economies generally call for continued monetary accommodation.[11] However, if output is close to potential and inflation is rising toward target, a gradual withdrawal of monetary support is warranted.

Continued monetary support is needed in the *euro area* and *Japan* until inflation durably increases toward central bank targets. The unemployment rate in the *United Kingdom* is close to historic lows; further declines could add to inflation pressure by triggering faster wage growth in a context of inflation that is already above target following currency depreciation after the June 2016 Brexit referendum. Gradual monetary tightening is therefore needed to ensure that inflation returns to target and expectations remain anchored. Similarly, unemployment rates in the *United States* have, over the past year, approached lows last seen in the 1990s, and there are nascent signs of a pickup in wages. With the economy already likely at potential, the December 2017 tax code overhaul and the February 2018 budget agreement could significantly stimulate activity and stoke wage and price pressures—in which case a faster withdrawal of monetary support may be needed. Overall, this highlights the need for data-dependent monetary policy normalization and the continued crucial role of communications in ensuring a smooth adjustment.

Fiscal Policy: Rebuild Buffers and Focus on Medium-Term Objectives

The cyclical recovery affords an opportunity to orient fiscal policy more firmly toward medium-term goals (see also Chapter 1 of the April 2018 *Fiscal Monitor*). In countries with little fiscal space, where a gradual strengthening of fiscal buffers is warranted, consolidation should proceed hand-in-hand with a shift in budget composition toward areas that lift potential output growth, while also remaining mindful of reducing inequality and improving the welfare of the most vulnerable. Doing so would help sovereign debt ratios remain sustainable, rebuild fiscal policy space to counter future downturns, and leave these economies better positioned to address long-term fiscal challenges stemming from aging-related health and pension outlays. The pace of consolidation should be calibrated to the strength of the recovery and avoid sharp drags on growth.

Countries with fiscal space should raise potential output and productivity by enhancing workforce skills, including in the area of digital literacy. These countries should improve infrastructure where needed and—where aging is expected to exert a significant drain on labor supply—should boost labor force participation through stronger family-friendly policies, reconsideration of labor taxation, actuarially fair pension systems, and labor market matching enhanced by more efficient active labor market programs (as discussed in Chapter 2).

In the *euro area*, several countries have exhausted their fiscal space and should gradually consolidate in as growth-friendly and evenly phased a manner as possible to rebuild buffers. In *Italy* and *Spain*, for example, high sovereign debt ratios together with unfavorable demographic trends call for an improvement in the structural primary balance to put debt firmly on a downward path. By contrast, *Germany* has fiscal space that should be used to increase public investment in areas that will lift potential growth by improving productivity and increasing the labor force participation of women and recent immigrants. These areas include enhancing digital infrastructure, child care and after-school programs, and the training and integration of refugees into the workforce. An important by-product of more public investment in Germany would be higher imports from the rest of the euro area, which would facilitate rebalancing of demand within the common currency area.

In *Japan*, a premature drop in the level of fiscal support should be avoided so as to sustain growth and promote structural reforms. The debt trajectory needs to be anchored by a credible medium-term fiscal consolidation plan, which should include a streamlining of health, pension, and long-term care benefits together with gradual and steady increases in the consumption tax rate starting in 2019.

The recently legislated tax code overhaul and bipartisan agreement on the federal budget in the *United States* will further add to rising fiscal deficits and unsustainable debt dynamics over the next five years. It

[11]As discussed in Chapter 2 of the October 2017 WEO there may be greater slack in labor markets than is captured by headline unemployment rates.

is therefore imperative to ensure higher future revenues and take measures to gradually curb the dynamics of public spending while shifting its composition toward much-needed improvements in infrastructure, poverty-alleviating measures, and policies to strengthen labor force participation.

Financial Sector Policies: Complete Balance Sheet Cleanup, Increase Resilience to Shocks

As discussed in the "Risks" section, a range of triggers could ignite financial tensions in global markets and undermine global growth prospects. In advanced economies, the postcrisis financial regulatory reform and balance sheet cleanup has improved institution-specific and system-wide resilience in financial sectors, but a few pockets of weakness remain. Fortifying these segments and, more broadly, avoiding a rollback of the regulatory reforms are essential for containing financial vulnerabilities.

In the euro area, continued progress on reducing nonperforming loans is essential for shedding crisis legacies and lifting an important constraint on credit intermediation (notably in *Greece, Italy,* and *Portugal*). More generally, there is a need to improve banks' cost efficiency and profitability, which will require proactive supervision and consolidation in overbanked economies. Appropriate and predictable use of creditor bail-ins and precautionary recapitalizations will be vital for reducing uncertainty and counterparty risk in situations of financial stress as well as for limiting the burden placed on taxpayers. For the whole currency area, completing the banking union remains a priority for placing the financial system on a stronger footing.

In *Japan,* the prolonged low-interest-rate environment and demographic headwinds have gradually weakened the profitability of financial institutions, particularly among regional banks. Increasing fee-based income and diversifying revenue sources, together with consolidation and rationalization, should help boost profitability.

In the *United States*, recent simplifications of regulations on medium-sized banks are warranted and unlikely to increase systemic risk. Broad-based deregulation that would loosen constraints on larger banks should, however, be avoided because it could once again encourage excessive risk taking and leave the financial system vulnerable to disruptive corrections. Continued efforts to improve financial literacy and protect consumers remain essential for preserving financial stability.

Structural Policies: Boost Potential Growth and Ensure that Benefits Are Shared Widely

Once output gaps close and advanced economies complete their cyclical recovery, the pace of expansion is set to moderate toward subdued potential growth over the medium term. Rising inequality and income polarization also threaten medium-term growth prospects by fueling support for inward-looking policies and could harm health and education outcomes among the affected groups.

In the *United States*, policy measures that can help lift potential output growth include public investment to augment infrastructure and maintain the quality of the existing stock; improvements in the efficiency of education spending; and more support for vocational apprenticeships, reskilling, and lifelong learning programs. According to the US Congressional Joint Committee on Taxation, the tax code overhaul is projected to reduce the average tax rate on upper-income US households relative to those in the middle and lower segments, especially over the medium term (when some provisions benefiting lower- and middle-income taxpayers expire), thus increasing income polarization.[12] Measures that can raise labor force participation and arrest income polarization include a larger Earned Income Tax Credit, expanded child tax credits, means-tested tax relief for lower-income working families for childcare-related expenses, and reform of the disability insurance program to encourage part-time work over disengagement from the labor force.

Relatively low total factor productivity growth and a trend decline in the labor force are key factors weighing on potential output growth in *Japan*. Raising productivity will require reforming the labor market to increase efficiency (for instance, with contracts that strike a better balance between job security and flexibility while promoting worker mobility across firms); lowering entry barriers to draw in more private investment (for example, in telecommunications and professional services); and furthering corporate governance reform. Offsetting the trend decline in the size of the labor force will require further increasing female and older worker labor force participation and allowing more use of foreign workers.

[12]Box 1.2 of the April 2018 *Fiscal Monitor* discusses the distributional implications of the US tax overhaul.

Structural reform priorities to boost productivity and innovation and reduce competitiveness disparities across the *euro area* vary, depending on country-specific bottlenecks. For instance, *Spain* should try to further reduce labor market duality and employment protection gaps between permanent and temporary workers, and target training and active labor market policies to boost employment prospects for young people and the long-term unemployed. In *Italy*, reforming wage bargaining arrangements to allow more firm-level flexibility should help align wages with productivity. In *Germany*, deregulating services would foster more competition and efficiency gains, and expanding the availability of venture capital could promote innovation.

Policies—Emerging Market Economies

Policy priorities in emerging market economies differ across countries within the group, depending on their cyclical positions and country-specific vulnerabilities. Common objectives across the group include strengthening financial resilience so that income gaps relative to advanced economies can continue to narrow sustainably and ensuring that opportunities and benefits associated with higher per capita income are shared broadly across the population.

Cyclical Policies: Manage Trade-Offs

In several emerging market economies, inflation is relatively subdued compared with historical averages. Improvements to monetary policy frameworks also appear to have lowered inflation expectations, including in *Brazil* and *India*. These developments have created room for monetary policy to support activity should downside risks to growth materialize. However, in a few countries, such as *Argentina* and *Turkey*, inflation remains above central bank targets, requiring a tight monetary stance to keep expectations anchored.

Fiscal policy is generally more constrained by the need to strengthen buffers and ensure sustainability of social insurance programs—particularly in commodity-exporting emerging market economies faced with subdued medium-term prospects for commodity prices, but also more broadly.

In *Argentina*, fiscal reforms approved at the end of 2017 provide improved guidance on fiscal discipline and will help address the country's large pension imbalances and begin a gradual reduction of high and distortionary taxes. However, further cuts to primary spending will be needed to achieve the primary deficit targets and open up space for further reduction of the tax burden. In *Brazil*, legislating social security reform remains a priority to ensure that spending is consistent with the constitutional fiscal rule and to guarantee long-term fiscal sustainability. Making use of the recent strengthening of activity to improve the primary balance over the short term would complement the overall consolidation strategy. In *China*, fiscal policy has played a vital part in shoring up short-term growth at the expense of eroding valuable policy space. Gradual consolidation, together with a shift of spending back onto the budget and away from off-budget channels, would help improve sustainability. *India*'s high public debt and recent failure to achieve the budget's deficit target call for continued fiscal consolidation into the medium term to further strengthen fiscal policy credibility.

Strengthening Financial Resilience

Balance sheet vulnerabilities pose a downside risk to medium-term growth prospects in many emerging market economies, requiring policy action. The corporate debt overhang and associated banking sector credit quality concerns exert a drag on investment in *India.* The recapitalization plan for major public sector banks announced in 2017 will help replenish capital buffers and improve the banking sector's ability to support growth. However, recapitalization should be part of a broader package of financial reforms to improve the governance of public sector banks, and banks' debt recovery mechanisms should be further enhanced. In *Turkey*, limiting balance sheet currency mismatches and the high exposure to foreign exchange risk are urgent priorities, especially with monetary policy normalization under way in the United States and the United Kingdom (and the resulting possibility of a shift of capital flows away from emerging market economies). Moreover, given that sudden repricing of term premiums remains a distinct possibility (as discussed in the "Risks" section) and that portfolio shifts could occur, it is important to mitigate rollover risk by avoiding excessive reliance on short-term borrowing. Regulators in *China* have taken important measures to rein in shadow banking and bring financial activity back onto bank balance sheets, where capital and provisioning requirements provide greater loss absorption capacity than in opaque off-balance-sheet channels. Nevertheless, total credit growth remains high. Early recognition of nonperforming assets, a reduction of forbearance, and gradually unwinding of the system of implicit guar-

antees to better align borrowing costs with risk-adjusted returns remain essential for improving credit allocation and containing the accumulation of vulnerabilities.

More broadly across emerging market economies, as shown in Chapter 2 of the October 2017 WEO, medium-term growth outcomes are improved by avoiding credit booms that lead to excessive risk taking and by permitting exchange rate flexibility to minimize the distortion of relative price signals and associated resource misallocation.

Boosting Potential Output Growth and Enhancing Inclusiveness

Strong growth over long stretches of the post-2000 period has allowed several emerging market economies to narrow income gaps relative to advanced economies and has enabled millions in these countries to climb out of poverty. As discussed earlier, the medium-term outlook for many emerging market economies is relatively subdued compared with the growth rates achieved since 2000. Country-specific constraints are, in many cases, important contributing factors that weigh on medium-term growth, limit employment opportunities for the working-age population, and prevent the benefits of growth from spreading widely.

In *South Africa*, the election of new political leadership reduces some of the policy uncertainty. However, advancement of the outstanding reforms is critical for reinvigorating economic growth and making it more inclusive. Improving infrastructure; reducing barriers to entry in key sectors, including transportation and telecommunications; improving the efficiency of government spending; and reducing policy uncertainty remain central to attracting private investment, raising productivity across the economy, and promoting job creation. The proposal to introduce a national minimum wage has the potential to hurt firms' competitiveness and employment prospects in the formal sector, but it could improve working conditions and reduce poverty. For a sustained rise in living standards and inclusiveness, however, broad-based efforts are needed to raise the quality of education and improve access to opportunities for all segments of society.

India has made progress on structural reforms in the recent past, including through the implementation of the goods and services tax, which will help reduce internal barriers to trade, increase efficiency, and improve tax compliance. While the medium-term growth outlook for India is strong, an important challenge is to enhance inclusiveness. The main priorities for lifting constraints on job creation and ensuring that the demographic dividend is not wasted are to ease labor market rigidities, reduce infrastructure bottlenecks, and improve educational outcomes.

In *Brazil*, reducing tariff and nontariff barriers to trade will help improve efficiency and raise productivity growth, and enhancing the appeal of the infrastructure concessions program to investors would help draw in private investment and fill important infrastructure shortfalls. In *Mexico*, implementation of certain aspects of the wide-ranging reform agenda approved five years ago has progressed well, including in the energy, financial, and telecommunications sectors. Building on these areas, priority should be accorded to initiatives that will lift key constraints on investment and boost growth over the medium term, including implementing judicial reforms that target corruption and promote the rule of law, as well as labor market reforms that help reduce informality.

More generally across emerging markets, there is room to make growth more inclusive and reduce inequality by increasing the coverage of personal income taxes, lowering the burden of indirect taxes, and increasing the share of transfers to the lowest income groups through improved targeting. Conditional cash transfers—adopted for example in *Brazil* and *Mexico*—that are linked to school enrollment or attendance at health clinics can lower current inequality and, by improving education and health outcomes, future income inequality (see the October 2017 *Fiscal Monitor*).

Policies—Low-Income Developing Countries

Low-income developing countries face multiple challenges in their effort to progress toward their 2030 Sustainable Development Goals. Fiscal positions have worsened across several countries in this group, poverty and inequality remains high, and financial vulnerabilities appear to be on the rise in some cases. Commodity exporters and those particularly exposed to natural disasters face additional complex challenges of diversifying their economies—a long-standing goal that has acquired renewed urgency with the subdued medium-term outlook for commodity prices and recurrent climate-related events as global temperatures rise (Chapter 3 of the October 2017 WEO). Many of the policy priorities discussed below are interlinked, are mutually reinforcing, and can achieve multiple objectives.

A Widespread Need to Strengthen Fiscal Positions

Fiscal positions have deteriorated in recent years across most low-income countries—encompassing both commodity exporters (those countries that generate at least 50 percent of their export revenue from commodities) and more diversified economies. While lower commodity prices since 2014 have dragged on revenue in commodity exporters, the broader pattern across low-income countries of worsening fiscal positions suggests that domestic revenue mobilization efforts have generally fallen short of rising expenditure requirements. Current spending—including rising debt service costs—appears to have contributed more than has public investment to the increase in total spending (IMF 2018a).

Continued efforts to broaden the tax base, enhance compliance, and reduce wasteful, poorly targeted subsidies would create essential resources for meeting critical social and developmental needs—including in the areas of health, sanitation and water delivery, electricity generation, roads, and education and training facilities. Fiscal consolidation efforts that focus on cutting current and recurrent expenditures generally appear to have smaller negative effects on economic activity than an equivalent reduction in public investment (see the October 2017 *Regional Economic Outlook: Sub-Saharan Africa*). Undertaking these efforts now—while growth is on the mend and the ongoing increase in commodity prices offers some respite—would help prevent a more painful adjustment farther down the road.

Promoting Inclusive Growth

As documented in the October 2017 *Fiscal Monitor*, inequality has declined since 2000 across sub-Saharan Africa, Asia, and Latin America—regions where several low-income economies are situated. Nevertheless, it remains high. Ensuring that poverty and inequality continue to fall is imperative from a welfare perspective and to secure support for needed structural reforms, avoid debilitating political conflict and civil strife, and make growth sustainable.

Priority policy areas to foster inclusive growth include universal health coverage of essential services to reduce infant and maternal mortality, targeted efforts to improve the delivery and take-up of early childhood education, initiatives to close primary and secondary enrollment gaps, and greater availability of clean water and sanitation. Increased access to credit, expanded vocational skills training, and improved infrastructure would help support new firm entry and boost opportunities for gainful employment of larger numbers.

Enhancing Financial Resilience

As discussed in IMF 2018a, some low-income countries (*Mozambique, Nigeria*) have experienced financial stress or deteriorating loan quality in recent years as growth has moderated and corporate balance sheets have weakened. In some countries—including *Chad* and *Zambia*—worsening fiscal positions have led governments to build up arrears to private contractors and have made it difficult for them to stay current on their loans. Further deterioration in loan quality would impair credit intermediation and the ability of the banking sector to support growth in these countries and would raise the risk of costly recapitalization, which would severely burden already-strained public finances.

Proactive supervision, ensuring adequate provisioning for losses by banks, reducing forbearance, and improving resolution frameworks to minimize expensive public bailouts are essential for strengthening financial resilience. Fiscal adjustments that place public finances on a sustainable path would additionally help curb budgetary arrears, allowing debt service to proceed on schedule and curtailing the buildup of nonperforming loans.

Furthermore, for economies that are not part of a currency union, allowing exchange rate flexibility while using reserves to smooth excess volatility can help buffer external shocks and, over time, prevent sustained departures from fundamental valuation (which lower the overall efficiency of economic activity).

Diversification and Coping with Climate Shocks

Economic diversification away from excessive dependence on commodities, or on a few sectors such as agriculture or tourism, is an overarching imperative for commodity exporters and those countries that are particularly exposed to natural disasters. While there is no unique template for all circumstances, general policy attributes that facilitate diversification or help countries cope with climate shocks include sound macro management and judicious use of policy buffers to smooth fluctuations, investment in education and training to improve workforce skills, increased access to credit, and a reduction in infrastructure gaps (see Chapter 3 of the October 2017 WEO and the October 2017 *Regional Economic Outlook* for sub-Saharan Africa). More broadly, governance reforms—for instance,

strengthening incentives to improve the efficiency of public administration, reducing the risk of expropriation, enhancing transparency in project selection, and expediting business dispute resolutions according to established legal principles—would help lift private investment, create jobs, and expand the range of activity beyond primary, resource-based sectors.

Multilateral Policies

Sustaining global improvements in living standards and delivering greater economic security to a rising share of the world's population requires a well-functioning multilateral framework that can facilitate a cooperative approach to addressing shared challenges and resolving disagreements. Multilateral cooperation in a range of areas can help amplify the benefits of the country-level actions discussed in the preceding section while minimizing any adverse spillovers they may generate. This is particularly relevant at a time when unilateral tariff actions threaten to weaken the rules-based global trading system that has helped lift millions out of poverty and raised consumer welfare by lowering the price of tradable goods over the past several decades.

- *Trade:* Trade openness and global economic integration under a rules-based, multilateral trading system have been crucial for diffusing innovation, lifting productivity, and expanding the variety of goods and services available globally in recent decades (see, for example, Baldwin 2016). Reducing barriers in high-tariff sectors such as agriculture; fully implementing commitments under the February 2017 Trade Facilitation Agreement; and adapting the rules to cover areas of growing relevance, such as digital trade and e-commerce, can help further lower trade costs and contribute to global growth. While agreements at the global level, which cover the bulk of cross-border trade flows, are optimal in this regard, broad regional and plurilateral arrangements—such as the revised Trans-Pacific Partnership—can also help forge cross-country consensus on best practices. Trade openness, as is the case with other forces of structural transformation, can hurt certain groups as activity shifts to locations with comparatively lower overall operating costs. Measures should be adopted to help those adversely affected by greater economic integration.
- *Global financial stability:* Cooperative global efforts have been instrumental in advancing the postcrisis financial regulatory reform agenda to make the financial system safer, including through stronger bank capital buffers, a better bank asset liquidity profile, and more stable funding. Key remaining areas for action to complete the regulatory reform agenda and strengthen global financial stability include devising effective resolution frameworks for globally important financial institutions, bolstering central counterparty clearing for derivatives, and filling data gaps and enhancing supervision and regulation of nonbank financial institutions. Continued close cooperation is also needed on combating cross-border money laundering, financing of terrorism, and fortifying financial infrastructure against cybersecurity breaches. At the same time, regulators must ensure that correspondent banking relationships—through which globally active banks provide deposit-taking and remittance services to smaller banks in low-income countries—stay intact to ensure that these countries have access to vital international payments. In addition, an adequately financed global safety net remains critical for countries to have quick and predictable access to international liquidity if they are unable to tap existing mechanisms, including their own reserves, bilateral swap lines, and regional financing agreements. Finally, as discussed in the "External Sector Outlook" section, both deficit and surplus economies must implement measures that rebalance the composition of global demand and prevent a further buildup of excess global imbalances.
- *Taxation:* Differences across jurisdictions in the tax treatment of corporate profits and personal income encourage profit shifting and can enable tax evasion. Such erosion of tax bases may reduce national governments' revenues while some of the more aggressive preferential tax regimes bring limited substantive economic benefits or knowledge spillovers to the destination locations. Multilateral cooperation on taxation is a long-standing imperative. It has acquired renewed urgency at a time when high inequality and a stronger sense that global integration favors large corporations and wealthy individuals have combined to increase the appeal of inward-looking policy platforms that could undermine the global recovery.
- *Noneconomic issues:* As described in the "Risks" section, a range of noneconomic factors threaten the sustainability of global growth. Cross-border

cooperation remains vital for mitigating greenhouse gas emissions and for containing the associated detrimental consequences of rising global temperatures and devastating climate events, such as droughts, tropical cyclones, and wildfires. These events disproportionately hurt low-income countries, which have contributed the least to emissions and have relatively low capacity to tackle their fallout (see Chapter 3 of the October 2017 WEO). And by adding to migrant flows, climate-related events compound an already complex situation of displaced individuals and refugees fleeing conflict areas, often to countries already under severe strain. Multilateral effort remains indispensable for alleviating these pressures through financial resources directed to the recipient countries and for ensuring unimpeded aid flows to source locations.

Scenario Box 1. Impact of Tighter Global Financial Conditions

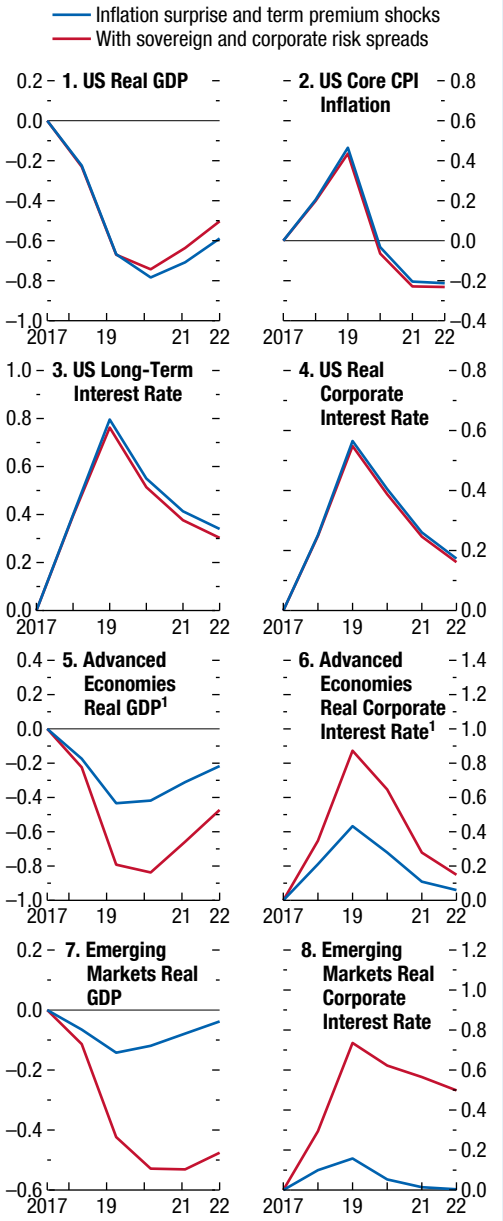
The IMF's Group of Twenty Model is used to explore the downside risks of tighter global financial conditions. To illustrate the potential implications, it is assumed that an inflation surprise in the United States (more likely to occur under expansionary fiscal policy) leads to faster-than-expected decompression of the US term premium, which rises 50 basis points in 2018 and an additional 50 basis points in 2019 (blue line in Scenario Figure 1). Thereafter, the term premium gradually returns to the baseline. The increase in the US term premium is passed on to all other countries in accordance with the spillover relationship established by the empirical work in the 2014 *Spillover Report*.

In addition, the tightening in financial conditions is assumed to heighten risk aversion, with associated increases in sovereign and corporate risk premiums (red line in Scenario Figure 1). In line with the time profile of the rise in the term premium, selected sovereign and corporate risk premiums increase in 2018 and 2019, decreasing thereafter at the same speed as the increase in the term premium. Risk spreads are calculated and categorized according to the IMF's assessment of countries' vulnerabilities stemming from financial, fiscal, and external risks, as well as from cross-sectoral and cross-border spillovers. In addition, capital flow pressures are assumed to constrain emerging market central banks so that they cannot fully offset the tightening in financial conditions by loosening monetary policy. Conventional monetary policy is also assumed to be constrained in the euro area and Japan by the path for short-term policy rates in the *World Economic Outlook* (WEO) baseline.

Higher real effective interest rates in the United States, owing to the faster decompression of the term premium and the need to lean against unexpectedly higher inflation, dampen aggregate demand, bringing US real GDP roughly ¾ percentage point below the WEO baseline by 2020.[1] Weaker US demand and, more important, the impact of tighter global financial conditions (red line) cause output to decline by about ½ percent relative to the baseline level by 2020 in emerging market economies, and more than ¾ percent in advanced economies (excluding the United States). In the latter, roughly half of the impact on activity

[1]In the outer years, the US real GDP path is a bit higher than in the first layer of the scenario. This is because US monetary policy is a little more accommodative as the more appreciated currency puts downward pressure on inflation, and the resulting stronger domestic demand in the United States more than offsets weaker foreign demand.

Scenario Figure 1. Inflation Surprise and Term Premium Shocks in the United States
(Percent deviation from baseline for real GDP; percentage point difference from baseline for CPI inflation and interest rates)



Source: IMF staff estimates.
Note: CPI = consumer price inflation.
[1]Excluding the United States.

Scenario Box 1. Impact of Tighter Global Financial Conditions *(continued)*

comes from the faster normalization of the term premium (blue line) and half from increased risk aversion (red line). The assumption of limited conventional monetary policy space in the euro area and Japan exacerbates the impact of the higher term and risk premiums on real interest rates and, thus, activity. However, the resulting impact could be mitigated in the euro area and Japan if unconventional monetary policy measures were implemented. In emerging markets, the overall impact from the term premium increase is relatively small as monetary policy responds and offsets a large part of the impact on real interest rates, mitigating the impact on real activity (blue line). However, when risk aversion increases and capital outflow pressures intensify, the scope for monetary policy to respond is limited and activity slows more significantly and persistently relative to the baseline (red line).

Box 1.1. Smartphones and Global Trade

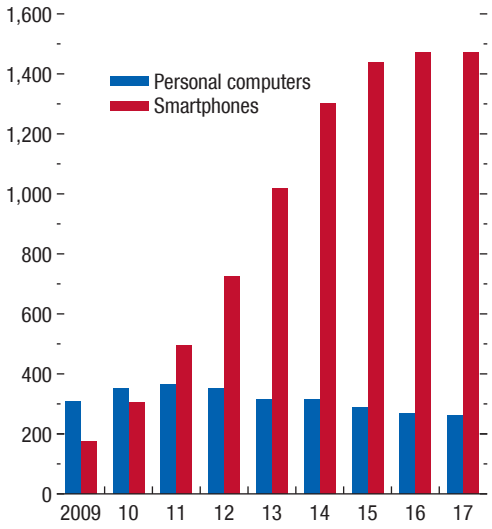
In 2017, global smartphone sales reached close to 1.5 billion units—one for every fifth person on earth (Figure 1.1.1). Demand has been driven by the increasing use of smartphones as the main computing platform across the world, substituting in part for personal computers. Mobile technology and services are estimated to have contributed $3.6 trillion (4.5 percent) to 2017 global GDP (GSM Association 2018).

The enormous global demand for smartphones in recent years has created highly complex and evolving supply chains across Asia. In 2017, China exported $128 billion worth of smartphones to the rest of the world, equivalent to 5.7 percent of its total exports. In Korea (the main supplier of smartphone components) semiconductor exports alone accounted for 17.1 percent of total exports. Similarly, components for smartphone production at the peak (October 2017) accounted for more than one-third of exports from Taiwan Province of China, 17.4 percent from Malaysia, and 15.9 percent from Singapore.

Smartphones contributed about one-sixth the estimated growth rate of global trade in 2017.[1] This growth was driven mainly by an increase in value added per unit, rather than units sold, which declined for the first time on record. As a result, the average sale price of an iPhone increased from $618 in 2016 to $798 in 2017, according to Apple Inc. quarterly financial statements. In the five main Asian economies involved in the tech cycle (China, Korea, Malaysia, Singapore, Taiwan Province of China), total exports grew by 6.7 percent in 2017. Even though tech exports accounted for less than 10 percent of total exports in the region, smartphone-related exports contributed about one-third the growth rate of total exports.

Ireland, Korea, and Taiwan Province of China are estimated to be the main beneficiaries of the new tech cycle in value-added terms. In Ireland, where the intellectual property of Apple Inc. resides, staff estimate the contribution in value-added terms of iPhone exports to account for one-fourth of the country's economic expansion in 2017.[2] At the same time, it is important to note that the income generated from smartphone sales does not fully contribute to the Irish economy. The acquisition of foreign-owned intellectual property assets leaves domestic employment mostly unchanged. (See Box 1.2 of the April 2017 *World Economic Outlook* for further details on issues relating to the measurement of Ireland's GDP.) In Korea, the production chain of smartphone-related components is estimated to have contributed about one-third of real GDP growth rate in 2017. In Taiwan Province of China, the contribution is estimated at about 40 percent. In contrast, for China the contribution is estimated to be much smaller, reflecting a larger and more diverse economy.

Figure 1.1.1. Global Sales of Personal Computers and Smartphones
(Millions of units)



Source: Gartner; and IDC.

A Rising Tech Cycle

Demand for smartphones is highly cyclical and related to the release dates of new smartphone models by global producers. Thus, production and trade in several Asian countries have become highly correlated, shaping a new tech cycle, which differs from the earlier tech cycle associated with personal computers.

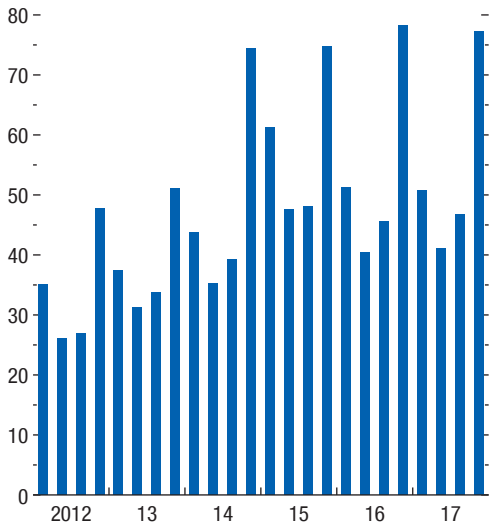
The authors of this box are Benjamin Carton, Yiqun Li, and Joannes Mongardini.

[1]The contribution is calculated as the net change in real exports of smartphone components as a share of the net change in total real exports.

[2]These estimates are based on iPhone sales as stated in Apple Inc. quarterly financial statements and staff assumptions about hardware costs, research and development costs, and distribution margins.

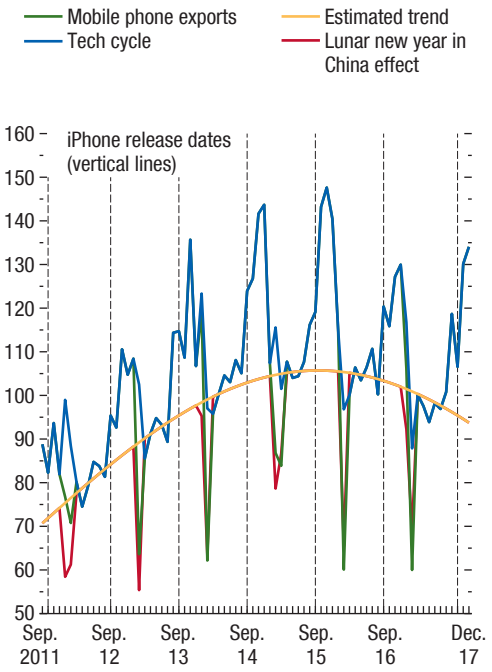
Box 1.1 *(continued)*

Figure 1.1.2. Global iPhone Sales
(Millions of units, quarterly)



Source: Apple Inc. quarterly financial statements (quarters shown are for calendar years).

Figure 1.1.3. China: Smartphone Export Cycle
(Millions of units)



Sources: Haver Analytics; TDM Data; and IMF staff calculations.

In a recent paper (Carton, Mongardini, and Li 2018), the new tech cycle is shown as being captured by nonseasonal factors. It critically depends on the release dates of iPhones as Apple Inc. flagship models drive global demand. In fact, iPhones topped global sales in the fourth quarter of 2017, surpassing Samsung Electronics phones.

Apple Inc.'s iPhone releases are the key determinant of the new tech cycle. Reflecting booming global demand, iPhone sales surged from 35.1 million units in the first quarter of 2012 to 78.3 million in the fourth quarter of 2016 (Figure 1.1.2). While a clear quarterly pattern is emerging—in which second- and third-quarter sales are usually weaker, reflecting the expectations of another release in the fourth quarter—the amplitude of this quarterly pattern has only really been established since the release of the iPhone 6/6 Plus in September 2014. Moreover, there are clear spillovers from the fourth quarter of the previous year onto the first quarter of the following year, ahead of the Lunar New Year in China.

The new tech cycle can be subdivided into two components. The first is the prerelease cycle, which comprises the export of all components from several Asian countries to China—the final producer of most smartphones. The second is the postrelease cycle, with shipments of smartphones from China to the rest of the world. Both pre- and postrelease cycles have a strong impact on growth and trade patterns in Asia and beyond.

Has the Global Market for Smartphones Become Saturated?

Global sales of smartphones may have plateaued in late 2015. By decomposing the cycle from trend for Chinese exports of smartphones, regression results show that the trend is nonlinear and may have reached its peak in September 2015, suggesting that future global demand for smartphones may grow more slowly (driven more by replacement demand than new acquisitions). This is confirmed by updated regression results on Chinese export data up to December 2017 (see Figure 1.1.3). In fact, global shipments of smartphones declined in 2017 for the first time on record (IDC 2018).

Box 1.1 ***(continued)***

However, Asia continues to gain market share in other consumer electronics, including embedded automobile computers, smart appliances, and wearable devices. This is evident in the rising demand for Korean semiconductors and, to a lesser extent, in Taiwan Province of China's electronic export orders. In fact, trend demand for Korean semiconductor exports continues to accelerate, despite the slowdown in global smartphone sales, while in Taiwan Province of China electronic export orders continue to grow at a healthy pace.

Overall, the new tech cycle has become an important new feature of the global economy. Over the past six years, the enormous global demand for smartphones has changed the export and growth performance of several Asian countries through complex and evolving supply chains that involve several countries in the region. While the global market for smartphones may become saturated, demand for other electronics products continues to boost production of semiconductors, particularly in Korea. Therefore, the influence of the tech sector on Asia's export patterns and growth is unlikely to fade soon.

Box 1.2. What Has Held Core Inflation Back in Advanced Economies?

Core consumer price inflation in advanced economies declined a couple of years after the global financial crisis and has not recovered meaningfully since (Figure 1.2.1). Wage growth in advanced economies has also remained remarkably sluggish, with wages growing 1.5 percentage points less in 2017 than in the years leading up to the crisis. The absence of stronger wage and price pressures has been particularly puzzling in the past two years given the acceleration in demand and decline in unemployment in many countries (October 2017 *World Economic Outlook* [WEO] and Chapter 2 of the October 2016 WEO).

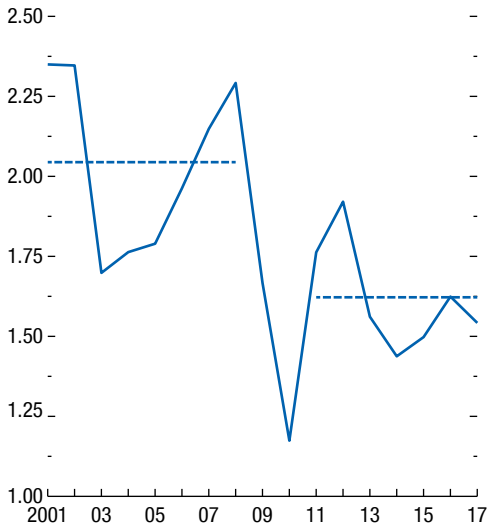
Several explanations have been put forth for the seemingly widespread disconnect between inflation and domestic activity. Some possible forces behind sluggish inflation could be domestic in origin, but may have operated in a synchronized manner across countries:

1. *Underestimation of slack:* Growth in productive capacity (potential output) may have been underestimated, and excess capacity may not have been declining as fast as the acceleration in activity or the decline in unemployment would suggest.[1]
2. *Expectations:* Even if output is accelerating and labor markets are tightening, firms may be reluctant to bid up wages and raise prices if they doubt the sustainability of the recovery. Another possibility is that the inflation expectations of firms and workers may have drifted down in a context of persistent undershooting of inflation targets, long-term unemployment, and a perceived narrowing in monetary policy space. Some foreign factors may also have weighed on core inflation. With an increasing range of products, services, and tasks traded across countries, competition from abroad may have put a lid on the relative prices and inflation rates of tradable products.[2]
3. *Drag from import prices and foreign competition:* With about half of advanced economy imports in 2016 originating in economies where output was below potential, sluggish inflation in advanced economies may in part reflect imported lower inflation from their trading partners.[3] The widespread use of digital technologies may have lowered trading costs, intensifying the competition for home-produced goods and putting downward pressure on their prices.[4]
4. *Enhanced tradability:* More generally, enhanced tradability and the threat of production relocation may have made inflation less sensitive to domestic factors and more responsive to foreign factors, including foreign demand and slack.

Which of these factors have been more important in restraining inflation?[5] Disaggregated inflation data could shed light on the relative contributions of

Figure 1.2.1. Advanced Economy Core Consumer Price Inflation

(Percent, year over year; dashed lines indicate 2001–08 and 2011–17 averages)



Source: IMF staff calculations.

The authors of this box are Oya Celasun, Weicheng Lian, and Ava Hong.

[1]Indeed, wage inflation has been more sluggish where the share of workers who are involuntarily working part time has remained high (Chapter 2 of the October 2017 WEO).

[2]See also Chapter 3 of the April 2006 WEO and Carney (2017) for a conceptual discussion of the effect of global factors on inflation.

[3]Chapter 2 of the October 2016 WEO documents that excess industrial capacity in major economies, especially China, exerted downward pressure on producer price inflation in 2015–16 through lower import prices.

[4]The decline in the prices of goods relative to services reflects faster efficiency gains in the production of goods in the past and the continued integration of countries with lower production costs into value chains and trade.

[5]In the traditional Phillips curve framework, which relates inflation rates to domestic slack, the channels in (1) and (2) would result in persistently negative error terms; channel (4) would also imply a flattening of the Phillips curve.

Box 1.2 *(continued)*

domestic versus foreign factors. If foreign factors are behind the weakness in inflation, it would suggest a larger decline in the inflation of tradable goods relative to nontradables, such as most services. Conversely, a broad-based decline in inflation rates across components within a country would suggest a greater role of domestic factors.

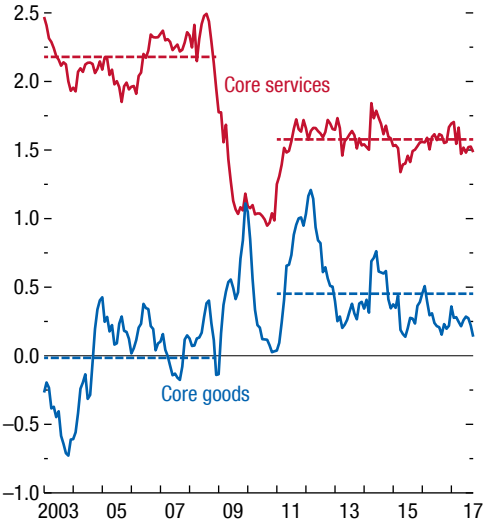
Separating core consumer price inflation in advanced economies into "core goods" and "core services" components reveals that disinflation since the global financial crisis—and the additional weakening over the past two years—was overwhelmingly the result of weaker services inflation (Figure 1.2.2).[6] By contrast, the weighted average of core goods inflation across 15 advanced economies shows no systematic weakening since the global financial crisis (but rather continued high volatility around a low level). While the changes in core goods inflation have been heterogeneous across countries (with some countries actually witnessing higher core goods inflation), the decline in services inflation has been remarkably broad (Figure 1.2.3).

An examination of core inflation by sector is also instructive (Figure 1.2.4). The sectors in which inflation has weakened the most relative to 2000–07 include medical services, education, and transportation services. By contrast, inflation has been higher for traded goods such as vehicles, medical products, and apparel, conflicting with arguments that the rise of online retail platforms has reduced profit margins and dragged goods prices down. Regression analysis suggests that declines in core inflation in specific sectors since the global financial crisis are more strongly related to country-specific factors than sector-specific factors. This suggests that global forces that affect inflation in specific sectors in a similar fashion across countries are unlikely to have contributed significantly to the decline in core inflation since the crisis.[7]

One possibility to consider is that tradability may have increased for services only, with no change in the tradability of goods. The sectors with especially weak inflation—medical care services and education—do not, however, seem more tradable than a few years ago. It is, instead, more likely that government policies have contributed to the decline in the rate of price increases in these sectors, given that prices of medical services and education are administered or regulated in many countries.

All in all, disaggregated inflation trends suggest that enhanced tradability and global competition are unlikely to have been the main culprits behind the sluggishness in inflation in recent years.[8] The weakness in the inflation of consumer service prices points to domestic factors—including government policies—as the more important restraints. A fruitful direction for future research would be to study the impact of enhanced tradability of service products and changes in factor mobility and labor market contestability on inflation.

Figure 1.2.2. Advanced Economy Core Consumer Goods and Core Services Consumer Price Inflation
(Percent, year over year; dashed lines indicate 2002–08 and 2011–17 averages)



Sources: Haver Analytics; and IMF staff calculations.
Note: The sample comprises 16 advanced economies: Australia, Austria, Canada, Denmark, Finland, France, Germany, Japan, Italy, Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom, and the United States.

[6]Food and all subcomponents relating to fuels are excluded from the core goods and core services series.

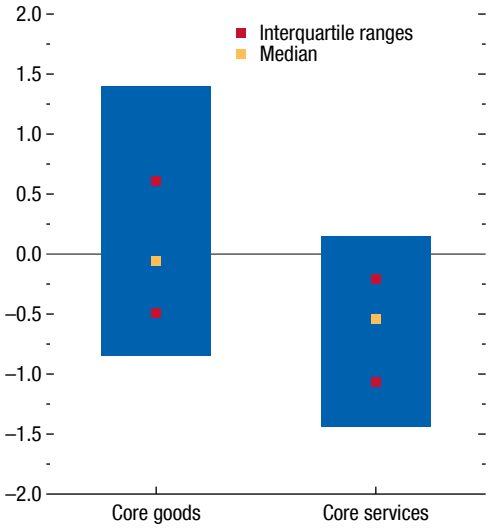
[7]In a regression of the change in sector-level inflation between 2002–08 and 2011–17, restricted to tradable sectors, country dummies explain 29 percent of the variation and sector dummies only 5 percent. In a similar analysis for nontradables, country dummies explain 21 percent of the variation and sector dummies 17 percent.

[8]Cross-border trade in services has increased markedly in recent years, aided by improvements in information and communication technologies.

Box 1.2 *(continued)*

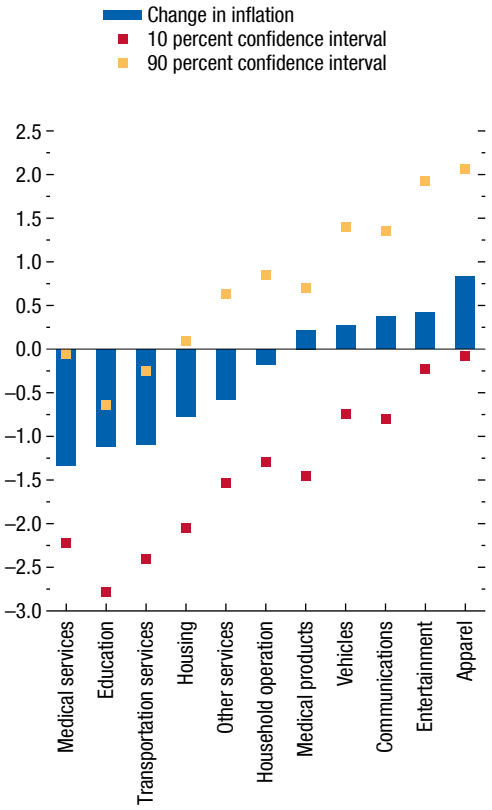
Figure 1.2.3. Cross-Country Distribution of Changes in Core Goods and Core Services Inflation, 2011–17 versus 2002–08

(Percent, year over year)



Source: IMF staff calculations.
Note: The sample comprises 16 advanced economies: Australia, Austria, Canada, Denmark, Finland, France, Germany, Japan, Italy, Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom, and the United States.

Figure 1.2.4. Changes in Sectoral Inflation, 2011–17 versus 2002–08



Sources: Haver Analytics; and IMF staff calculations.
Note: Dummies from a regression of changes in sectoral inflation between 2002–08 and 2011–17 over both country and sector dummies. The sample comprises 16 advanced economies: Australia, Austria, Canada, Denmark, Finland, France, Germany, Japan, Italy, Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom, and the United States.

Box 1.3. Recent Dynamics of Potential Growth

Global economic activity has gathered momentum over the past year, thanks in part to a resurgence of investment in advanced economies. Whether this momentum can be sustained, and what it implies for the calibration of macroeconomic policies, depends partly on whether the faster expansion is mostly cyclical (that is, reflecting an acceleration in demand) or also a reflection of faster growth in potential output (that is, an acceleration in supply capacity). A recovery based on stronger potential growth is more likely to be sustained than one driven purely by demand.

Potential growth is estimated to have declined in both advanced and emerging market economies in the wake of the global financial and euro area crises (April 2015 *World Economic Outlook* [WEO]), reflecting weaker growth in labor, capital, and total factor productivity. In the aftermath of these crises, potential growth was projected to rise at a relatively limited pace through 2020. This box updates the estimates in the April 2015 WEO and finds that potential growth has indeed increased somewhat in recent years—mainly due to a recovery in total factor productivity growth—but remains well below precrisis rates. The box also discusses incorporating information on financial cycles into the calculation of potential output—the concept of "sustainable growth."

To What Extent Has Potential Growth Recovered?

The behavior of inflation in relation to unemployment and output contains valuable information on the underlying dynamics of potential growth. When output outstrips potential output and labor markets tighten, inflation pressure is expected to strengthen; conversely, inflation is expected to weaken when demand falls short of supply. The puzzlingly weak response of inflation to the pickup in output and declining unemployment over the past one and a half years suggests that *potential* output may have risen alongside *actual* output.

Multivariate filtering techniques (as described for example in Blagrave and others 2015) make use of a simple model that incorporates information on the relationship between the degree of slack in the economy on one hand and inflation and unemployment on the other. Specifically, the Phillips curve (for inflation) and Okun's law (for unemployment) are used to pin down estimates of the output gap, and thus the evolution of potential growth over time. Applying this approach suggests that potential growth picked up, on average, by 0.4 percentage point between 2011 and 2017 for 10 large advanced economies, compared with an average uptick in actual growth of 0.6 percentage point over this period. By contrast, a group of five emerging markets (excluding China) has seen potential growth decline about 0.7 percentage point since 2011, compared with an actual growth slowdown of 1.9 percentage points—more recently, however, there are signs of a turnaround (Figure 1.3.1).

What Is Driving the Recovery?

To shed light on the drivers of potential growth in advanced economies, the estimates of potential output can be decomposed in line with a standard Cobb-Douglas production function:

$$\overline{Y}_t = \overline{A}_t \overline{L}_t^{\alpha} K_t^{1-\alpha},$$

in which $\overline{Y}_t$ is potential output as estimated by the multivariate filter, K_t is the stock of capital, $\overline{L}_t$ is potential employment, and $\overline{A}_t$ is potential total factor productivity, which is treated as the residual in our approach.[1] For the analysis, the share of labor for each country (α) is proxied using estimates from Chapter 3 of the April 2015 WEO.

Estimates of potential employment ($\overline{L}_t$) are derived from estimates of the nonaccelerating inflation rate of unemployment (NAIRU, $\overline{U}_t$), the working-age population (W_t), and the trend labor force participation rate ($\overline{LFRP}_t$) as follows:[2]

$$\overline{L}_t = (1 - \overline{U}_t) W_t \overline{LFRP}_t.$$

Based on this exercise, the modest increase in estimates of potential growth is attributed predominantly to a pickup in total factor productivity (TFP) growth—the residual in the framework (Figure 1.3.2). The rebound in TFP growth can be partly explained by cyclical factors, as some of the headwinds from

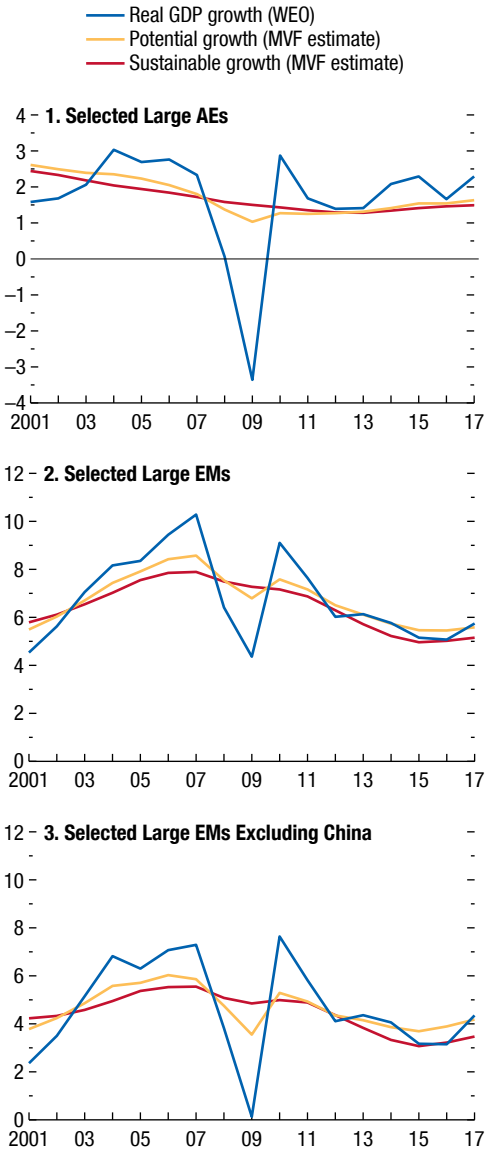
The authors of this box are Olivier Bizimana, Patrick Blagrave, Mico Mrkaic, and Fan Zhang, with support from Sung Eun Jung.

[1]This residual includes utilization of the inputs of production (labor and capital), labor quality (that is, human capital accumulation), and possible measurement errors in the inputs of production. Data on capital stock are from the Organisation for Economic Co-operation and Development.

[2]Baseline estimates of the trend participation rate are constructed using WEO data, whereas estimates of the NAIRU are produced by the multivariate filter during the estimation of potential output.

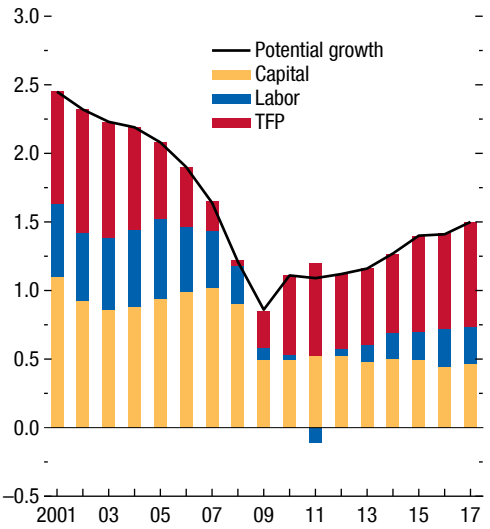
Box 1.3 *(continued)*

Figure 1.3.1. Different Measures of Growth
(Percent)



Source: IMF staff calculations.
Note: AEs = advanced economies (Australia, Canada, France, Germany, Italy, Japan, Korea, Spain, United Kingdom, United States); EMs = emerging market economies (Brazil, China, India, Mexico, Russia, Turkey); MVF = multivariate filter; WEO = *World Economic Outlook*.

Figure 1.3.2. Production Function Decomposition: Selected Large Advanced Economies
(Percent)



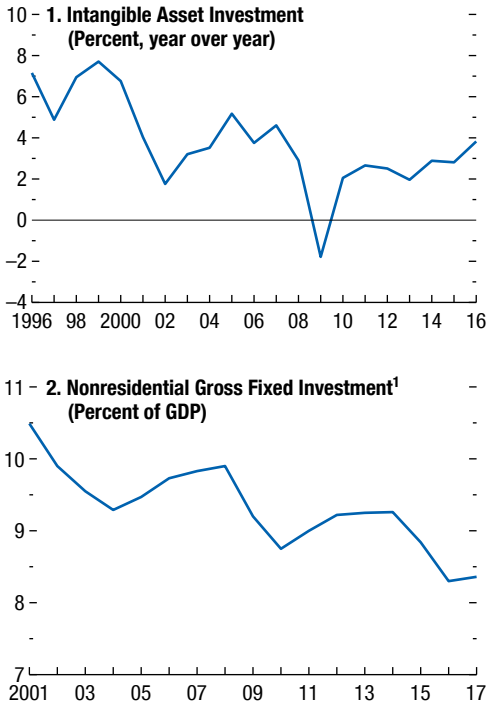
Source: IMF staff calculations.
Note: Advanced economies = Australia, Canada, France, Germany, Italy, Japan, Spain, United Kingdom, United States; TFP = total factor productivity.

the global financial crisis and euro area sovereign debt crisis have subsided. In particular, the meaningful easing of financial conditions since 2014 is likely to have facilitated investment in productivity-enhancing innovation, such as research and development and intangible capital, which can boost total factor productivity (Figure 1.3.3, panel 1). However, there is heterogeneity among advanced economies, with investment in intangible assets showing a strong rebound in some (for example, the United States and Japan), while it contracted in others (for example, Canada and Australia). In addition, capacity utilization rates in most major advanced economies have bounced back to more normal levels. The recent uptick in estimates of trend TFP growth are closely aligned with estimates of TFP growth using actual GDP, capital stock, and labor force data (Figure 1.3.4).

Interestingly, despite the recent recovery of investment growth in major advanced economies, the contribution of capital-stock growth to potential remains weak, and well below its precrisis average. This

Box 1.3 *(continued)*

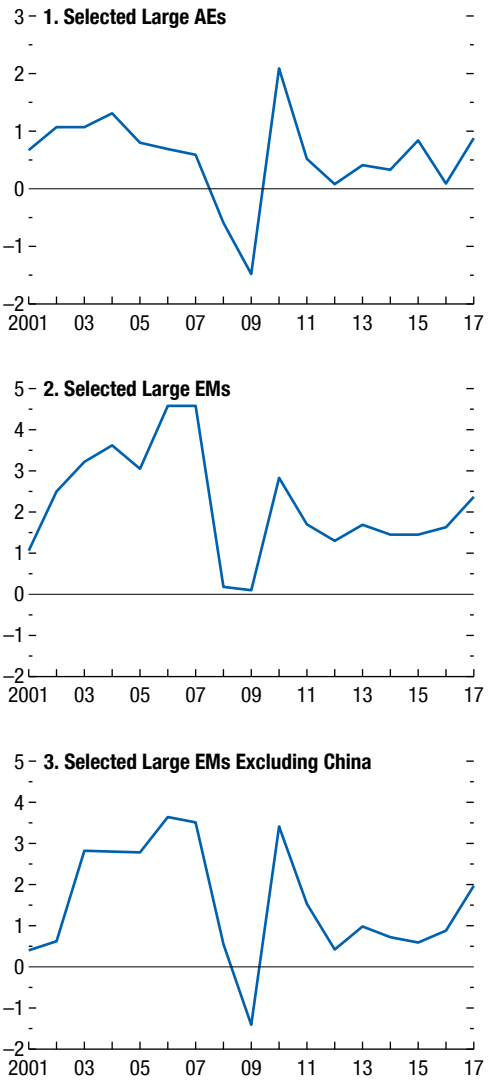
Figure 1.3.3. Investment in Selected Advanced Economies



Source: IMF staff calculations.
Note: Advanced economies = Australia, Canada, France, Germany, Italy, Japan, Korea, Spain, United Kingdom, United States.
[1]Gross fixed capital formation data are used for Japan and Korea.

Figure 1.3.4. Total Factor Productivity Growth

(Percent)



Source: IMF staff calculations.
Note: AEs = advanced economies (Australia, Canada, France, Germany, Italy, Japan, Korea, Spain, United Kingdom, United States); EMs = emerging market economies (Brazil, China, India, Mexico, Russia, Turkey).

is because the *level* of investment (as a share of output) remains depressed, as shown in (Figure 1.3.3, panel 2), implying that growth in the capital stock remains subdued. Also of note is that, despite a slight rebound in the contribution of labor inputs in advanced economies, it remains weak overall because of tepid working-age population growth in many countries, which counteracts the impact of a recent slight decline in the NAIRU on potential employment growth.

Estimates of Sustainable Growth

A second relevant concept—"sustainable growth"—aims to estimate an economy's growth in the absence of imbalances associated with financial cycles. Similar to the estimation of potential GDP, sustainable GDP growth rates are estimated by means of a mul-

Box 1.3 *(continued)*

tivariate filter (see Berger and others 2015). The filter estimates sustainable growth by controlling for deviations in credit, house, and stock prices and inflation from their own longer-term trends and removing their cyclical influence on output from the estimates. For example, if wide swings in output are accompanied by wide swings in credit, the filter interprets such joint movements as unsustainable and adjusts the rate of sustainable growth accordingly.[3]

Sustainable growth estimates are similar to those for potential growth in advanced economies but show a slightly more modest increase in recent years. The acceleration of credit activity and the growth of property and equity prices in the recent period imply that recent GDP growth is at least partly fueled by a financial acceleration; consequently, the estimate of underlying sustainable output growth is corrected downward. For emerging markets, estimates of sustainable output growth are modestly weaker than those for potential growth, with financial factors playing a similar role.

[3]The methodology for estimating sustainable growth is based on the work of Borio, Disyatat, and Juselius (2013). Related methods of estimating potential or sustainable output—including those that incorporate estimates of equilibrium interest rates—are discussed in Alichi and others (forthcoming).

Summary

Estimates of potential growth have increased slightly in recent years as temporary crisis-related effects on total factor productivity growth have unwound. Still, there is not yet any signal that contributions from labor and capital inputs are on a fast upswing. This finding indicates that policy measures to address structural weakness—including investment in infrastructure and labor market initiatives to offset the economic effects of aging—are needed to boost medium-term growth prospects.

Box 1.4. Has Mismeasurement of the Digital Economy Affected Productivity Statistics?

Slow productivity growth has led to questions about whether productivity is being underestimated. Overstated deflators for information and communications technology (ICT) products are a likely source of underestimation. Research on deflators in the US national accounts suggests an underestimation of about 0.3 percentage point, compared with a productivity slowdown of about 1.5–2.0 percentage points. Profit shifting to tax havens may also have depressed measured US productivity growth before 2008.

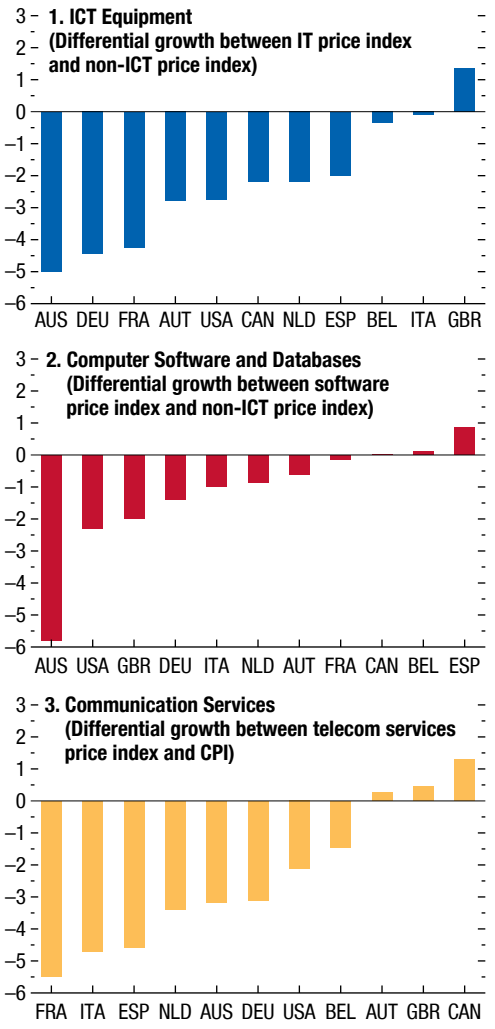
Productivity grows when output increases faster than labor inputs or, in the case of total factor productivity, combined labor and capital inputs. A worldwide slowdown in productivity growth beginning near the time of the global financial crisis is seen in the data for most of the world's economies, with productivity growth 1–2 percentage points lower than its previous trend in many advanced economies (Adler and others 2017). However, advances in digital technology and their diffusion throughout economies seem more rapid than ever, leading some to suggest that productivity growth is being underestimated.

Research on errors in measuring ICT products before and after the productivity slowdown shows that they play at most a small role, in that productivity was also underestimated before the slowdown began (Byrne, Fernald, and Reinsdorf 2016). Nevertheless, the underestimation is more important compared with measured productivity at today's lower rates of productivity growth (often less than 1 percent a year).

Accuracy of the deflators used to calculate real output growth is a key question in measuring productivity. Adjusting prices for quality change is often challenging: underadjustment for quality changes could mean price changes are overstated for ICT equipment and software that embody improved technology. Price samples may also underrepresent new products and suppliers that have become important in buyers' purchasing patterns. Deflators for ICT products vary widely across Organisation for Economic Co-operation and Development (OECD) countries, which may reflect differences in quality adjustment procedures and item samples (Figure 1.4.1). For example, research in the United Kingdom suggests that the rate of change in telecommunications service prices was overstated by 7 percentage points during 2010–15 (Abdirahman and others 2017).

The impact of mismeasurement of ICT prices on aggregate measures of productivity depends on the

Figure 1.4.1. Difference between ICT Price Indices and General Non-ICT Price Index, Selected OECD Countries
(Percent difference in average annual growth, 2010–15)



Source: Ahmad, Ribarsky, and Reinsdorf 2017.
Note: Data reported for Spain for ICT equipment and computer software and database correspond to 2010–14. Data reported for Austria for communications services correspond to 2011–15. Data labels use International Organization for Standardization (ISO) country codes. CPI = consumer price index; ICT = information and communications technology.

Box 1.4 *(continued)*

weight of the affected items. Quality-adjusted prices for ICT equipment and software in the United States in Byrne, Fernald, and Reinsdorf (2016) and Byrne and Corrado (2017) show substantially lower growth than the official deflators, but the implied adjustment to US labor productivity growth is just 24 basis points during 2004–14. Adjusting for unmeasured improvements in telecommunications services and unmeasured price savings from e-commerce could add another 8–10 basis points.[1] The size of these effects in other economies depends on their price measurement methods and on the importance of these items in domestic production.

A different kind of measurement issue is raised by globalization. Productivity statistics cover production within a nation's economic territory, but digitalization has facilitated fragmentation of production across global supply chains, as well as multinational companies' relocation for tax arbitrage purposes of their headquarters, intellectual property and other assets, and operations. Multinational companies engaged in tax-driven relocation may misreport the location of production of their output. To investigate this possibility, Guvenen and others (2017) use indicators to apportion the worldwide output of multinational companies with headquarters or operations in the United States. This apportionment increases the estimated rate of US productivity growth by 0.25 percentage point for 2004–08 but has no effect thereafter.

The scope of productivity statistics is limited to output sold at market prices, raising questions about the possible omission of welfare gains from free digital products. These products fall into three categories: free replacements for nondigital products, such as video calls over the Internet, online bill paying, and the camera and GPS capabilities of a smartphone; free media, funded by advertising and data collection; and products produced by volunteers.

[1]Mismeasurement of quality changes in medical care could also be significant but estimates of the possible impact are unavailable.

Many of the free digital replacements could be captured in productivity statistics by including them in the deflator calculations as quality improvements in a priced digital product. Based on the weights of items with free or low-cost digital replacements in an average consumption basket for OECD countries in 2005, the average impact on productivity growth could be 0.1–0.2 percent a year during the years of significant digital replacement, with a smaller effect today (Reinsdorf and Schreyer 2017).

Research on techniques for inclusion of viewers' consumption of free media funded by advertising generally finds only a tiny effect on productivity growth. However, a more extreme proposal, by Nakamura, Samuels, and Soloveichik (2017), to count all free information supplied for marketing purposes in viewers' consumption—and to define the deflator for online media in a way that implies a rapid decline—would increase the estimated rate of US productivity growth by 0.1 percentage point. The effect of expansion of the definition of investment to include collection of user data has not yet been investigated.

Questions about nonmarket production or welfare (that are beyond the scope of productivity statistics) on market producers may be addressed in future research on other indicators. Production of open-source software by volunteers is one such question. Furthermore, by expanding access to information and variety, and enabling new kinds of services, digital platforms have raised households' productivity in the use of their time for nonmarket production for their own consumption. Tasks previously part of market production have shifted to nonmarket production (for example, households now act as their own travel agents), and low-productivity uses of households' time have shifted to market production (for example, e-commerce has replaced driving to the store and finding items on the shelf). Research on these questions could provide important context for productivity statistics.

Box 1.5. Macroeconomic Impact of Corporate Tax Policy Changes

This box uses the IMF's Global Integrated Monetary and Fiscal Model (GIMF) to compare the macroeconomic impact in the United States of temporarily reducing the corporate income tax rate with the impact of temporarily increasing the investment expensing allowance.[1] The results illustrate that a temporary increase in investment expensing can have a much larger short-term impact on activity than a temporary cut in the corporate income tax that causes an identical decline in fiscal revenue.

Assumptions

Under the corporate income tax reduction simulation, it is assumed that revenue from domestic and foreign sales is subject to tax and that all costs can be deducted from revenue to calculate the profit that forms the tax base (to approximate the corporate income tax system in the United States). These costs include labor, rent, capital depreciation, interest expenses, and intermediate inputs, including those that are imported.

The simulation that reduces the corporate income tax rate reduces the tax payments on corporate profits.[2] The simulation that increases the investment expensing allowance component assumes that the corporate tax rate remains unchanged, but that some of firms' investment expenditure can now be considered expenses and, hence, deducted from corporate revenue.

In both simulations, it is assumed that the fiscal authority credibly changes the corporate tax system (the corporate income tax rate or the share of investment expenditure that can be deducted) such that the government revenue from taxing the corporate sector is reduced by half a percent of GDP for five years. Thereafter, the corporate tax rate and investment allowances both return to their baseline. After five years, transfer payments to households are reduced to bring government debt back to its baseline level over the long term.

Results

The propagation of both tax policies is broadly similar because they both increase the return on capital expenditure. However, the quantitative difference in their impact is striking. The impact of introducing a temporary increase in the investment expensing allowance (red line in Figure 1.5.1) has a significant impact on investment and output. Under the increase in the investment expensing allowance scenario, firms receive a tax benefit only from their investment expenditure, which sharply increases the incentive to invest while the increased allowance is in place.[3] The boom in investment supports employment and real wages, which also boosts consumption and raises the price of domestically produced goods.

In response, the monetary authority tightens policy. The resulting higher real interest rate offsets some of the reduction in the cost of capital, which dampens private investment and partly offsets the impact of higher household incomes on consumption expenditure. In addition, the increase in the real interest rate leads to an appreciation of the real effective exchange rate, lowering import prices and export competitiveness. Lower import prices together with additional domestic demand increase the demand for imports, while higher export prices decrease exports. Net exports contribute negatively to GDP growth, and the current account worsens.

Once the investment allowance expires and the return on capital declines, firms reduce their investment expenditure and let the capital stock return to the baseline. This lowers employment and real wages and, hence, consumption—all of which eventually return to the baseline. The gradual reduction in domestic demand leads policymakers to ease monetary policy, which eventually reduces the real interest rate and leads the real exchange rate to depreciate. As a result, imports decline, whereas exports get a boost from the temporary increase in output and the exchange rate decline.

The impact of a temporary corporate income tax reduction (blue line in Figure 1.5.1) increases the returns from the use of all factors of production, including already-installed capital, thereby stimulat-

The authors of this box are Benjamin Carton, Emilio Fernandez, and Benjamin Hunt.

[1]See Carton, Fernandez-Corugedo, and Hunt (2017) for a detailed description of the version of GIMF used in these simulations.

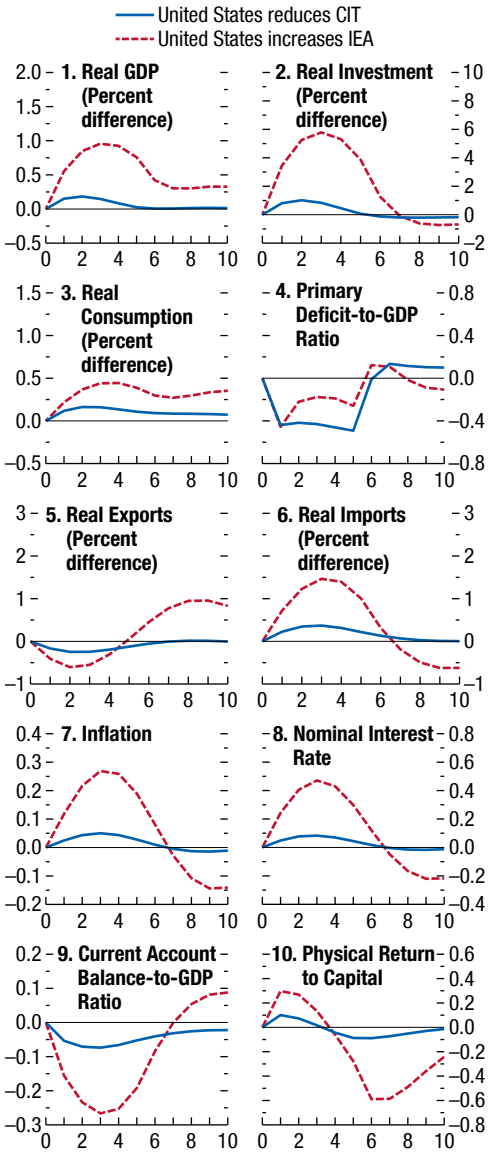
[2]That is, it reduces *both* the tax payments stemming from corporate revenue and the amount that can be deducted from the cost of using all inputs, including capital depreciation and interest expensing.

[3]The initial increase in investment is dampened by the presence of investment adjustment costs, which capture the fact that firms do not have additional investment plans ready to be launched and that it can be costly to install capital.

Box 1.5 *(continued)*

Figure 1.5.1. Impact of a Temporary Increase in the Investment Expense Allowance and a Temporary Decrease in the Corporate Income Tax Rate

(Percentage point difference from baseline, unless noted otherwise)



Source: IMF staff estimates.
Note: Years are on the *x*-axes. CIT = corporate income tax rate; IEA = investment expense allowance.

ing investment, employment, and real wages over the duration of the cut. Because the return on all factors of production rises and because much of that increase in return is on existing capital, the corporate income tax cut affects the incentive to invest much less than does the increase in the investment expensing allowance. Hence, the temporary tax cut has less impact on investment, which also results in lower employment, wages, consumption, and domestic demand.

Box 1.6. A Multidimensional Approach to Trade Policy Indicators

Recent events underscore the importance of trade and trade policy to the global economy. A move toward inward-looking policies can risk undermining the economic recovery under way. In contrast, addressing trade distortions can also raise productivity and growth, and a generalized move to more open trade can facilitate adjustment in countries facing greater import competition (IMF-WTO-WB 2017). Trade policy discussions stand to benefit from having a strong factual basis covering the multiple dimensions that are nowadays relevant to assess trade policy. To this end, this box describes and discusses a set of indicators of trade regimes which can be a helpful tool to guide policy discussions (see Cerdeiro and Nam 2018).

Barriers to trade can take many different forms, ranging from import tariffs to regulatory barriers, restrictions on services trade, and controls on foreign investment. Because of this diversity, no single indicator can provide a complete characterization of a country's trade regime. The indicators discussed here relate to three areas of trade policy—trade in goods, trade in services, and foreign direct investment. It is important to note that none of the indicators described aims to benchmark countries' performance against commitments they may have, either under the World Trade Organization (WTO) or vis-à-vis any other forum or agreement.

Figure 1.6.1 illustrates the results for the Group of Twenty (G20) as well as its advanced economy and emerging market members. In panel 1, four of the indicators aim to measure barriers to goods trade: average tariffs, the fraction of imports covered by nonautomatic licensing procedures, an index on trade facilitation, and the level of agricultural support. In addition, two indicators measure restrictions to services trade, and two aim to capture barriers to foreign direct investment. All indicators are normalized, such that being closer to the edge of the figure in panel 1 should be read as being more open.[1]

There are at least two salient features in the figure. First, on average, G20 advanced economies appear to have more open trade regimes than their emerging market counterparts, with the exception of agricultural support, which remains relatively large in some advanced economies. Emerging market economies should not necessarily be expected to be as open as advanced economies, which began to open to trade much earlier. At the same time, emerging market economies have liberalized faster over the past two decades, particularly from the mid-1990s to the mid-2000s, after which liberalization slowed across all countries. Second, the gap between advanced economies and emerging market economies is particularly pronounced for one of the services trade measures and trade facilitation. This lends partial support to the view that liberalization efforts have been somewhat asymmetric—not just across countries, but also across sectors.

In light of concerns that the period since the 2008 global financial crisis has seen an increase in different forms of protectionism, despite pledges to avoid this outcome, indicators that reflect the evolution of a more granular set of trade policies since 2008 are presented. While there is considerable heterogeneity within groups of countries, overall, emerging market G20 members appear to have adopted more trade-restricting measures since the crisis (Figure 1.6.1, panel 2).

All countries, however, including advanced economies, remain relatively far from free trade. Figure 1.6.2 shows the resulting indicators of countries' trade regimes if the edge of the figure represents free trade, rather than the most open country within the G20. The distance from free trade is largest for services restrictions, investment restrictions, trade facilitation, and, interestingly, in further most-favored-nation tariff reductions.

Because of the limitations inherent to any summary indicator, and given the lack of quantitative information for some important policy areas, these indicators are best used in conjunction with qualitative sources, including WTO Trade Policy Reviews. Information about countries' specific context is also essential for discussions about the scope, sequencing, and pace of trade reforms (see, for example,

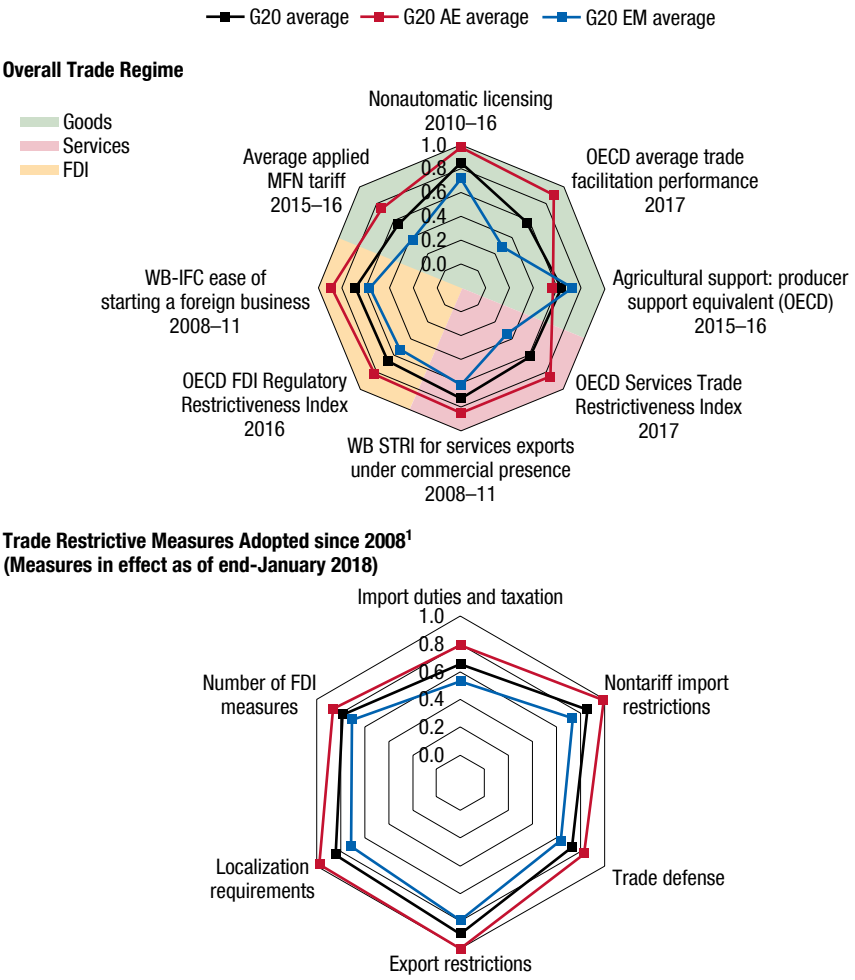
The authors of this box are Diego Cerdeiro and Rachel J. Nam.

[1]Given that the different indicators are not expressed in comparable units of measure, every indicator is normalized with respect to a reference set of countries (G20 members in this box), where 0 corresponds to the country that is least open and 1 to the country that is most open for that indicator. It is important to bear in mind that the comparability across different policy dimensions that this normalization allows is only in a distance-to-frontier sense.

Box 1.6 *(continued)*

Figure 1.6.1. Selected Trade Policy Indicators: Example with Group of Twenty Member Countries

(0 = least open country in G20; 1 = most open country in G20)



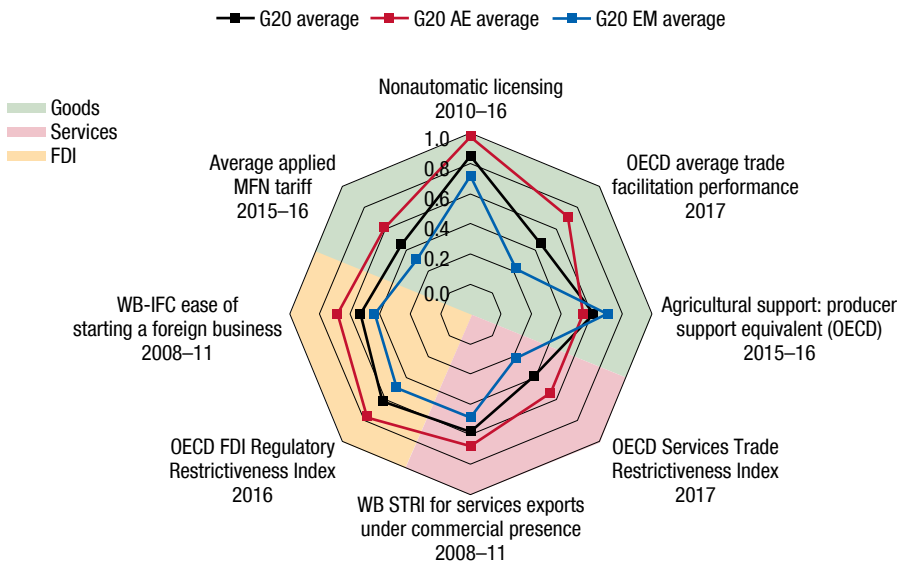
Sources: Global Trade Alert; Organisation for Economic Co-operation and Development (OECD); United Nations COMTRADE database; United Nations Conference on Trade and Development TRAINS; World Bank STRI; World Trade Organization (WTO), World Tariff Profiles; and IMF staff calculations.
Note: The indicators reflect no judgment as to WTO compliance of underlying measures, nor whether certain measures (such as trade defense) are an appropriate response to the actions of other countries. The "ease of starting a business" indicator is based on perceptions as part of an established International Finance Corporation survey process.
AE = advanced economy; AM = advanced economies; EM = emerging market; FDI = foreign direct investment; G20 = Group of Twenty; IFC = International Finance Corporation; MFN = most-favored nation; STRI = Services Trade Restrictiveness Index; WB = World Bank.
[1]Import (export) coverage ratio, except for the case of FDI (number of measures).

IMF 2010). It would also be useful to quantify other aspects of countries' trade regimes—including behind-the-border regulations that can hinder trade, state support (subsidies, state-owned enterprises), government procurement, and intellectual property. Better data, both across countries and in terms of policy areas that significantly affect trade, would help to better inform policy discussions.

Box 1.6 *(continued)*

Figure 1.6.2. Free Trade Normalization: Alternative Normalization

(0 = G20 most closed; 1 = free trade)



Sources: Organisation for Economic Co-operation and Development (OECD); United Nations COMTRADE database; World Bank STRI; World Trade Organization (WTO), World Tariff Profiles; and IMF staff calculations.
Note: The indicators reflect no judgment as to WTO compliance of underlying measures, nor whether certain measures (such as trade defense) are an appropriate response to the actions of other countries. The "ease of starting a business" indicator is based on perceptions as part of an established International Finance Corporation survey process.
AE = advanced economy; AM = advanced economies; EM = emerging market; FDI = foreign direct investment; G20 = Group of Twenty; IFC = International Finance Corporation; MFN = most favored nation; STRI = Services Trade Restrictiveness Index; WB = World Bank.

Box 1.7. Growth Outlook—Advanced Economies

Advanced economies are projected to grow at 2.5 percent in 2018—0.2 percentage point higher than in 2017—and 2.2 percent in 2019 (Table 1.1). For both years, this forecast is considerably stronger than the October *World Economic Outlook* (WEO) forecast (0.5 and 0.4 percentage point higher for 2018 and 2019, respectively). Growth in advanced economies is projected to decline to 1.5 percent over the medium term, broadly in line with modest potential growth.

- The growth forecast for the *United States* has been revised up given stronger-than-expected activity in 2017, higher projected external demand, and the expected macroeconomic impact of the recent changes in fiscal policy. As a by-product, stronger domestic demand is projected to increase imports and widen the current account deficit. The US growth forecast has been raised from 2.3 to 2.9 percent in 2018 and from 1.9 to 2.7 percent in 2019. Growth is expected to be lower than in previous forecasts for a few years from 2022 onward, given the temporary nature of some tax provisions.
- The recovery in the *euro area* is expected to strengthen from 2.3 percent in 2017 to 2.4 percent in 2018, before moderating to 2.0 percent in 2019. The forecast is higher than in the October WEO by 0.5 and 0.3 percentage point for 2018 and 2019, respectively, reflecting stronger-than-expected domestic demand across the euro area, supportive monetary policy, and improved external demand prospects. Growth forecasts for 2018–19 for all major economies in the euro area have been revised up relative to the October WEO. In *France*, growth is expected to firm up from 1.8 percent in 2017 to 2.1 percent this year, before softening slightly to 2.0 percent in 2019. In *Germany,* growth is expected to remain stable at 2.5 percent in 2018 and moderate to 2.0 percent in 2019. *Italy*'s economy is also set to grow at a stable rate of 1.5 percent this year, softening to 1.1 percent in 2019. In *Spain*, growth is projected to decline from 3.1 percent in 2017 to 2.8 percent in 2018 and 2.2 percent in 2019. Medium-term growth in the *euro area* is projected at 1.4 percent, held back by low productivity amid weak reform efforts and unfavorable demographics.
- In the *United Kingdom*, growth is projected to slow from 1.8 percent in 2017 to 1.6 percent in 2018 and 1.5 percent in 2019, with business investment expected to remain weak in light of heightened uncertainty about post-Brexit arrangements. The forecasts are broadly unchanged relative to the October WEO. The medium-term growth forecast is also broadly unchanged at 1.6 percent, reflecting the anticipated higher barriers to trade and lower foreign direct investment following Brexit. Assumptions regarding the Brexit outcome remain broadly unchanged relative to the October WEO. (The UK is assumed to exit the customs union and the single market, but tariffs on goods trade with the European Union remain at zero, and non-tariff costs increase only moderately.)
- *Japan*'s growth is projected to moderate to 1.2 percent in 2018 (from a strong above-trend outturn of 1.7 percent in 2017) before slowing further to 0.9 percent in 2019. The upward revision of 0.5 percentage point in 2018 and 0.1 percentage point in 2019 relative to the October WEO reflects more favorable external demand prospects, rising private investment, and the Supplementary Budget for 2018. Japan's medium-term prospects, however, remain weak, mainly due to unfavorable demographics and a trend decline in the labor force.

Box 1.8. Growth Outlook—Emerging Market and Developing Economies

Growth in emerging market and developing economies is expected to increase from 4.8 percent in 2017 to 4.9 percent in 2018 and 5.1 percent in 2019 (0.1 percentage point higher for 2019 than in the October *World Economic Outlook* (WEO); Table 1.1). Beyond 2019, growth in emerging market and developing economies is projected to stabilize around 5 percent over the medium term.

- In *China*, growth is projected to moderate from 6.9 percent in 2017 to 6.6 percent in 2018 and 6.4 percent in 2019. The forecast is higher (by 0.1 percentage point in both 2018 and 2019) relative to the October WEO, reflecting an improved external demand outlook. Over the medium term, growth is expected to gradually slow to 5.5 percent with continued rebalancing from investment to consumption as policy support through fiscal and credit channels is gradually reduced, the social safety net is strengthened, and precautionary saving declines. The economy is also assumed to maintain progress on rebalancing from industry to services. However, rising nonfinancial debt as a share of GDP and the accumulation of vulnerabilities weigh on the medium-term outlook.
- Growth elsewhere in emerging and developing Asia is expected to remain strong. *India*'s economy is projected to grow at 7.4 percent in 2018 and 7.8 percent in 2019, up from 6.7 percent in 2017. The forecast is unchanged from the October WEO, with the short-term firming of growth driven by a recovery from the transitory effects of the currency exchange initiative and implementation of the national goods and services tax, and supported by strong private consumption growth. Among the ASEAN-5 economies (*Indonesia, Malaysia, Philippines, Thailand, Vietnam*), broadly stable growth is projected for the group, at 5.3 percent in 2018 and 5.4 percent in 2019 (compared with 5.3 percent in 2017).
- Recovery in *Latin America and the Caribbean* is strengthening, with growth for the region projected to increase from 1.3 percent in 2017 to 2.0 percent in 2018 and 2.8 percent in 2019 (an upward revision of 0.1 and 0.4 percentage point, respectively, for 2018 and 2019 relative to the October WEO).
  - *Mexico*'s economy is projected to accelerate from 2.0 percent in 2017 to 2.3 percent in 2018 and 3.0 percent in 2019 (0.4 and 0.7 percentage point higher than projected in the October WEO), benefiting from stronger US growth. Complete implementation of the structural reform agenda is projected to maintain growth close to 3 percent over the medium term.
  - Following a deep recession in 2015–16, *Brazil*'s economy returned to growth in 2017 (1.0 percent) and is expected to improve to 2.3 percent in 2018 and 2.5 percent in 2019 on the back of stronger private consumption and investment. The growth forecast is higher than in the October WEO by 0.8 percentage point for 2018 and 0.5 in 2019. Medium-term growth is set to moderate to 2.2 percent.
  - In *Argentina*, growth is expected to moderate from 2.9 percent in 2017 to 2.0 percent in 2018 (0.5 percentage point lower than in the October WEO forecast) due to the effect of the drought on agricultural production, as well as the needed fiscal and monetary adjustment to improve the sustainability of public finances and reduce high inflation. Thereafter, growth is set to recover gradually to 3.3 percent over the medium term.
  - In *Venezuela*, real GDP is forecast to fall by about 15 percent in 2018 and a further 6 percent in 2019—a significant downward revision compared with the declines projected in the October WEO (9.0 percent and 4.0 percent, respectively, for 2018 and 2019)—as the collapse in oil production and exports intensifies the crisis that has led to output contraction since 2014.
- The outlook for the *Commonwealth of Independent States* is broadly unchanged since the October 2017 WEO, with growth for the region expected to inch up from 2.1 percent in 2017 to 2.2 percent in 2018 and stabilize around that level thereafter. *Russia*'s return to growth in 2017 was supported by improved oil export revenue, stronger business confidence, and looser monetary policy. The Russian economy is expected to grow by 1.7 percent this year, before softening to 1.5 percent over the medium term as structural headwinds and sanctions weigh on activity. Russia's emergence from recession has helped other economies in the region through trade and remittance flows. Growth projections for 2018 have been revised up for Azerbaijan to 2.0 percent (0.7 percentage point higher than in the October WEO) on higher public investment, and Kazakhstan to 3.2 percent (higher by 0.4 percentage point relative to the October WEO) reflecting

Box 1.8 *(continued)*

stronger oil production, but medium-term prospects remain subdued.

- Growth in *emerging and developing Europe* is projected to moderate from 5.8 percent in 2017 to a still-robust 4.3 percent in 2018 and soften further to 3.7 percent in 2019 (0.8 and 0.4 percentage point higher, respectively, than projected in the October WEO). Stronger external demand, generated by the improved momentum in euro area economic activity, has generally lifted near-term growth prospects across the group. In *Poland*, strong domestic consumption, faster absorption of EU funds, and supportive macro policies are expected to lift activity above potential this year. Growth is projected at 4.1 percent in 2018, moderating to 3.5 percent in 2019—stronger by 0.8 and 0.5 percentage point, respectively, than projected in the October WEO. *Turkey*'s economy is also projected to grow above potential, buoyed by improved external demand conditions and supportive policies on multiple fronts—expansionary fiscal policy, state loan guarantees, procyclical macroprudential policy, and an accommodative monetary stance. Growth is projected at 4.4 percent in 2018 and 4.0 percent in 2019, an upward revision of 0.9 percentage point for 2018 and 0.5 percentage point for 2019 relative to the October WEO.
- Growth in *sub-Saharan Africa* is projected to rise to 3.4 percent in 2018 (from 2.8 percent in 2017) and improve slightly thereafter through the medium term to about 4.0 percent. While the headline numbers suggest a broadly unchanged picture relative to the October WEO, revisions to growth projections for key large economies point to underlying differences in prospects across the region. In *Nigeria*, the economy is projected to grow 2.1 percent in 2018 and 1.9 percent in 2019 (up from 0.8 percent in 2017), reflecting improved oil prices, revenue, and production and recently introduced foreign exchange measures that contribute to better foreign exchange availability. The forecast is 0.2 percentage point stronger in each year relative to the October WEO forecast. Similarly, for the region's other large oil dependent economy, *Angola*, growth is projected to rise from 0.7 percent in 2017 to 2.2 percent in 2018 and 2.4 percent in 2019 (upward revisions of 0.6 and 1.0 percentage point, respectively, relative to the October WEO) as the firming of oil prices lifts disposable income and business sentiment improves. Growth in *South Africa* is also expected to strengthen from 1.3 percent in 2017 to 1.5 percent in 2018 and 1.7 percent in 2019, (stronger than in the October WEO by 0.4 and 0.1 percentage point, respectively, for 2018 and 2019). Business confidence is likely to gradually firm up as political uncertainty diminishes, but growth prospects remain weighed down by structural bottlenecks.
- In the *Middle East*, *North Africa, Afghanistan, and Pakistan* region, growth is projected to increase from 2.6 percent in 2017 to 3.4 percent in 2018 and 3.7 percent in 2019. Growth is expected to stabilize thereafter at about 3.6 percent through the medium term. The need for fiscal consolidation as a result of structurally lower oil revenues, security challenges, and structural impediments weigh on the medium-term prospects for many economies in the region. Relative to the forecasts in the October WEO, with the pickup in oil prices, prospects for oil exporters have improved somewhat (with a small downward revision to 2018 growth and a more-than-offsetting positive revision to 2019 growth), while those of oil importers have softened slightly. In *Saudi Arabia*, growth is projected to resume this year, rising to 1.7 percent from a contraction of 0.7 percent in 2017. Growth in 2019 is expected to rise slightly to 1.9 percent as oil output increases, with the assumed expiration of the Organization of the Petroleum Exporting Countries Plus production cut agreement. The forecast has been revised up from the October WEO by 0.6 and 0.3 percentage point for 2018 and 2019, respectively. Growth in *Egypt* is projected to rise to 5.2 percent in 2018 and 5.5 percent in 2019 (0.7 and 0.2 percentage point higher, respectively, than in the October WEO), reflecting stronger momentum in domestic demand and the effect of structural reforms. *Pakistan*'s economy is expected to expand at a robust pace of 5.6 percent this year (up from 5.3 in 2017), before moderating to 4.7 percent in 2019. While the forecast for 2018 is unchanged relative to the October WEO, for 2019, it has been revised down by 1.3 percentage points, partly reflecting an increase in macroeconomic vulnerabilities.

Box 1.9. Inflation Outlook—Regions and Countries

As shown in Table 1.1, inflation rates in advanced economies are projected to pick up to 2.0 percent in 2018, from 1.7 percent in 2017. Inflation in emerging market and developing economies excluding Venezuela is expected to increase to 4.6 percent this year, from 4.0 percent in 2017. The group aggregates mask notable differences across individual countries.

Advanced Economies

- In the *United States*, headline consumer price inflation is expected to increase from 2.1 percent in 2017 to 2.5 percent in 2018, before softening to 2.4 percent in 2019. Core consumer price inflation (CPI)—excluding fuel and food prices—is projected to increase from 1.8 percent in 2017 to 2.0 percent in 2018 and 2.5 percent in 2019 as output is set to rise above potential following the expected sizable fiscal expansion. Core personal consumption expenditure price inflation, the Federal Reserve's preferred measure, is projected to increase from 1.5 percent in 2017 to 1.7 percent in 2018 and 2.2 percent in 2019. Inflation rates are projected to moderate over the medium term, reflecting a monetary policy response that will keep expectations and actual inflation well anchored.
- Headline inflation in the *euro area* is expected to remain at 1.5 percent in 2018 and inch up to 1.6 percent in 2019. With the recovery boosting growth above potential for 2018–19, core CPI is expected to increase from 1.1 percent in 2017 to 1.2 percent in 2018 and 1.7 percent in 2019. Core CPI is projected to gradually increase to 2 percent by 2021 as growth remains above trend for the next couple of years and inflation expectations strengthen.
- In *Japan*, headline inflation is expected to increase to 1.1 percent in 2018–19 (from 0.5 percent in 2017) due to higher energy and food prices and strong domestic demand. Core inflation is projected to rise from 0.1 percent in 2017 to 0.5 percent in 2018 and increase further to 0.8 percent in 2019. Inflation is likely to remain below the Bank of Japan's target over the forecast horizon, reflecting generally slow pass-through of strong demand to wages and firms' operating costs and a very gradual adjustment in inflation expectations.
- Diminishing slack in the economy, together with the pass-through effects of depreciation of the pound, are projected to keep inflation in the *United Kingdom* above the Bank of England's target in 2018. Headline inflation is projected at 2.7 percent in 2018, the same as in 2017. Core CPI (excluding energy, food, alcoholic beverages and tobacco prices) is expected to increase from 2.4 percent in 2017 to 2.5 percent this year, before moderating to 2.2 percent in 2019 (and further to 2 percent over the medium term) as interest rate hikes and the withdrawal of monetary support proceed.

Emerging Market and Developing Economies

- Headline inflation in *China* is expected to pick up to 2.5 percent this year and to about 3 percent over the medium term as food and energy prices rise and core inflation inches up as a result of diminished excess capacity in the industrial sector, continued robust demand for services, and growing pressure on wages as the labor force declines.
- In *Brazil* and *Russia,* headline inflation is expected to remain subdued in the range of 3–4 percent in 2018 as output gaps gradually close, with growth continuing to recover from the recession of 2015–16. Inflation is expected to rise over the medium term, with firmer core inflation and the projected modest pickup in commodity prices, but to remain at levels well below the average of the past decade. In *Mexico,* the average inflation rate is projected to decline to about 4.4 percent in 2018 (from 6.0 percent in 2017) as the effects of temporary factors such as fuel price liberalization fade, dropping further to about 3.0 percent in 2019.
- Inflation in sub-Saharan Africa is projected to moderate slightly in 2018 and 2019 but is expected to remain in double digits in key large economies, reflecting the pass-through effects of currency depreciation and their impact on inflation expectations (Angola), supply factors, and assumed monetary policy accommodation to support fiscal policy (Nigeria).

Special Feature: Commodity Market Developments and Forecasts

Commodity prices have increased since the release of the October 2017 World Economic Outlook *(WEO). Supply outages, the extension of the production agreement by the Organization of the Petroleum Exporting Countries (OPEC), and stronger-than-expected global economic growth all pushed oil prices higher. Metal prices also increased following better-than-expected growth in all major economies and production cuts in China. Agricultural prices rose markedly less than those of other commodities, but they have been catching up following unfavorable weather, especially in the Western Hemisphere.*

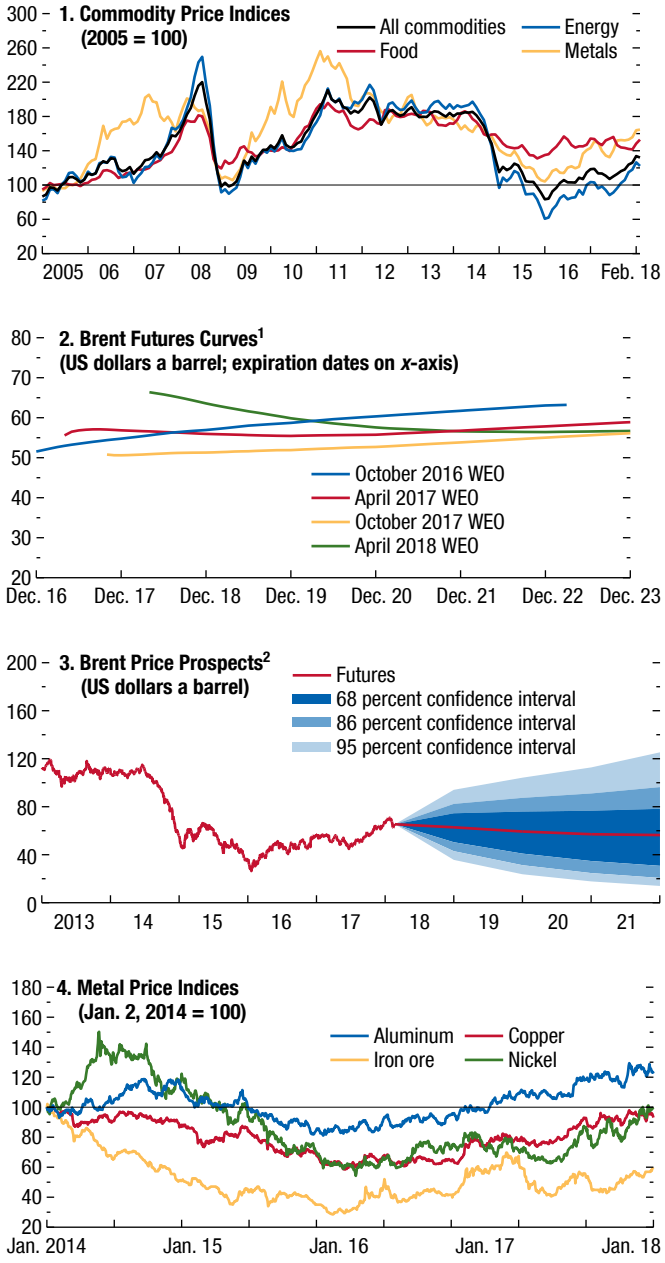
The IMF's Primary Commodities Price Index rose 16.9 percent between August 2017 and February 2018, the reference periods for the October 2017 and current WEO (Figure 1.SF.1, panel 1). Energy prices and metal prices increased substantially, 26.9 percent and 8.3 percent, respectively, while agricultural prices increased markedly less, by 4.1 percent. Oil prices increased to above $65 a barrel (as of January), attaining their highest level since 2015, in response to unplanned outages and stronger global economic growth. Since then, prices have receded following stronger-than-expected US production. Natural gas prices increased sharply as a result of winter heating use and strong demand from China. Coal prices increased, but by less than other energy prices, because a shift from coal to gas is under way in many countries.

Oil Prices Highest since 2015

Among key influences on oil prices, on November 30, 2017, OPEC agreed to extend to the end of 2018 the production target in place since January 2017. This extension was the second (following the April 2017 agreement that had extended the November 2016 agreement). The agreement entails a cut of 1.2 million barrels a day (mbd) relative to October 2016 production. Russia and other non-OPEC countries agreed to stick to current production levels, implying additional cuts of about 0.6 mbd relative to the October 2016 level.

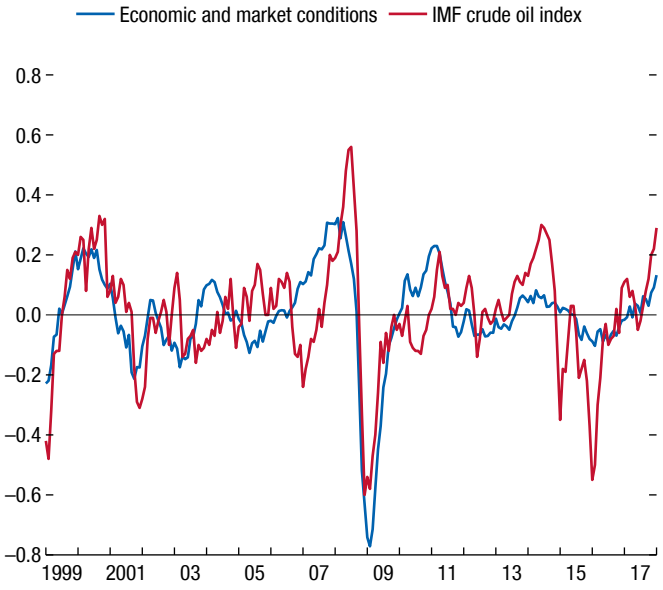
The authors of this feature are Christian Bogmans (team coleader), Akito Matsumoto (team coleader), and Rachel Yuting Fan, with research assistance from Lama Kiyasseh.

Figure 1.SF.1. Commodity Market Developments



Sources: Bloomberg Finance L.P.; IMF, Primary Commodity Price System; Thomson Reuters Datastream; and IMF staff estimates.
Note: WEO = *World Economic Outlook*.
[1]WEO futures prices are baseline assumptions for each WEO and are derived from futures prices. April 2018 WEO prices are based on February 22, 2018, closing.
[2]Derived from prices of futures options on February 22, 2018.

Figure 1.SF.2. Detrended IMF Crude Oil Index and Economic and Market Conditions



Sources: Haver Analytics; IMF, Primary Commodity Price System; and IMF staff calculations.

In addition to the OPEC extension, unplanned outages, including on the US Gulf Coast, in Venezuela, and in other locations, cut supply unexpectedly. Although 2017 non-OPEC supply was slightly stronger than expected, the sharp decline in production in Venezuela—following further deterioration in its macroeconomic and financial conditions—more than offset the increase in non-OPEC production. While Libya's production increased dramatically during 2017, a recent outage there together with one in the North Sea further reduced global oil supply. Hurricane damage to infrastructure slowed the US production response to rising oil prices. (The rig count returned to its August 2017 level only in February 2018, even though oil prices were rising from their trough below $50 a barrel since June 2017.) However, the stronger-than-expected increase in US oil production in early 2018 eventually helped pull oil prices down from the January high. These events were concentrated between late 2017 and early 2018, so spot prices moved much more than futures.

Oil Price Rally: Largely Supply Driven

Despite the increase in global aggregate demand, recent revisions to oil market expectations point to a mostly supply-driven oil price rally. The main reason is that a typical income elasticity of demand would imply at most a 0.2 percent increase in oil demand as a result of the 0.2 percentage point upward revision of global growth for 2018 in the current WEO. Based on a fixed supply curve, with price elasticity of supply between 0.03 and 0.1, the 0.2 percent increase in oil demand would imply a 2–6 percent increase in prices—that is, a $1 to $3 price increase over an initial level of $50 a barrel.

The biggest supply surprise is the faster-than-expected deterioration in Venezuelan output. Venezuela produced 2.38 mbd of crude oil in 2016 and 2.10 mbd in the third quarter of 2017. The latest production figure stands at 1.62 mbd in December 2017, and many expect that it will decline to close to 1.0 mbd by the end of 2018. An additional decline in production, some of which is probably already priced in, would push prices even higher.

To sum up, if the supply forecast for 2018 is revised down by 0.8 mbd, and the oil demand elasticity is identical to the oil supply elasticity, it implies that roughly 80 percent of the recent price increase was caused by a deterioration in supply conditions.

An alternative method to infer the role of demand and supply factors in driving price changes uses regression analysis. Figure 1.SF.2 plots a proxy for global demand; that is, economic and market conditions—a weighted index based on the purchasing managers' index, industrial production, and equity prices against the detrended movement in oil prices (obtained by using the Hodrick-Prescott filter). The purchasing managers' index and equity prices proxy for market sentiment and financial factors, respectively—the latter relates to speculative demand for oil. Figure 1.SF.1 shows that global demand fluctuations explain oil price movements well over the past couple of decades, especially earlier in the sample period, when demand from China and the financial crisis of 2008 and its recovery were key drivers of oil prices. More recently, however, fluctuations in global demand have been muted, compared with the large swings in prices, suggesting that demand shocks have lost much of their explanatory power. Specifically, the price collapse of 2014 and the notable subsequent swings seem only weakly related to movements in global demand. A regression-based calculation suggests that only 20 percent of oil price fluctuations since August 2017 can be attributed to changes in global demand.

Oil Futures

Oil futures contracts point to a decline in prices to about $53.6 a barrel in 2023 (Figure 1.SF.1, panel 2). Baseline assumptions for the IMF's average petroleum spot prices, based on futures prices, suggest average annual prices of $62.3 a barrel in 2018—an increase of 18.0 percent from the 2017 average—and $58.2 a barrel in 2019 (Figure 1.SF.1, panel 3). The decline is due to an expected increase of US supply and the eventual end of the OPEC deal.

Uncertainty remains around the baseline assumptions for oil prices, although risks are balanced. Upside risks include further declines in Venezuelan production and unplanned outages elsewhere. At the same time, stronger-than-expected US and Canadian production could push prices down sooner than predicted.[1] However, the long end of the futures curve is expected to stay at about $55, given current technology trends.

Natural Gas and Coal

The natural gas price index—an average for Europe, Japan, and the United States—rose sharply, by 45.0 percent, between August 2017 and February 2018, reflecting seasonal factors, including an extremely cold winter in Europe. Strong demand for liquefied natural gas (LNG) in China, where the government has reduced the use of coal to mitigate air pollution, helped drive the spot LNG price to its highest level in three years. India's LNG demand also grew strongly in the second half of 2017. Higher oil prices add extra upward pressure to natural gas prices in countries where oil-linked pricing is more common.

The coal price index—an average of Australian and South African prices—increased by 8.4 percent from August 2017 to February 2018. Following the introduction of coal import restrictions in July 2017, China's coal imports declined in the second half of 2017 compared with the previous year, although total imports were higher than in 2016 as a result of increases in the first half of the year. More recently, however, Chinese import restrictions were temporarily lifted to accommodate strong winter heating demand.

[1]The US Energy Information Administration expects US crude oil production in 2018 to reach 10.3 mbd, exceeding the previous high of 9.6 mbd recorded in 1970, and to increase further in 2019. Canada's oil production, which has been growing strongly, is expected to grow further.

Metal Prices Increasing

Metal prices increased by 8.3 percent between August 2017 and February 2018, in line with better-than-expected growth in all major economies. Purchasing managers' indices for major economies have been well above the 50-point mark that separates growth from contraction, led by the United States and the euro area, and were about 60 as of February 2018. The World Bureau of Metal Statistics reported a wider demand-supply gap for all base metals, especially aluminum, as solid economic growth led to higher demand, while supply was limited, partially owing to China's production cuts. Depreciation of the US dollar has also supported dollar-denominated metal commodities.

Iron ore returned to trading at about $78 a ton in February, rising 4.1 percent from its August price of $74.6 a ton. The force behind the recovery comes from higher steel prices and state-mandated curbs on steel mills in China, which have lowered output despite strong demand. Rising coal prices due to China's import restrictions further amplified the effect during the traditional restocking season for iron ore, adding more demand to this raw material for steel production. However, markets are expecting a decline over the medium term, linked to expected lower steel production.

Aluminum and copper hit multiyear highs following production cuts in China (which contributes more than half of both global production and consumption of aluminum) to reduce air pollution during the winter. In turn, this has led to a larger global supply-demand deficit and pushed aluminum prices to close February 7.5 percent higher than August. Likewise, copper prices gained 8 percent during the same period, boosted by solid demand in China. Futures markets suggest further price increases of both metals over the medium term, in line with improved global macroeconomic prospects.

The price of nickel, a key ingredient in stainless steel and batteries in electric vehicles, reached multiyear highs in February, up 24.8 percent over August 2017. Owing to strong demand from China and tight supplies, nickel inventories at London Metal Exchange warehouses fell since October to a 14-month low in January. Cobalt, another raw material for batteries, has experienced sharp price increases since 2016, fueled by tight supply and rising demand from electric vehicle manufacturers. Hitting a nine-year high in late

January, cobalt prices were up 38.2 percent in February 2018 relative to their August 2017 average.[2]

Uranium was hovering at about $20 since August, but rallied in early November following the announcement of production cuts by two of the world's biggest producers. The price has receded since early December and fell 11.2 percent between August 2017 and February 2018.

Adverse Weather Driving Food Prices Higher

The IMF's agricultural price index rose 4.1 percent from August 2017 to February 2018, given that unfavorable weather conditions in recent months are expected to reduce this year's harvests of many grains and oilseeds. The subindices of food and agricultural raw materials rose by 4.1 and 6.0 percent, respectively, and the beverages index declined by 3.6 percent. The drop in beverage prices can be attributed to a substantial decline in the price of coffee (by 12.7 percent) while the gain in the index of raw agricultural materials follows a rally in the price of cotton.

Wheat prices increased by 23.9 percent between August 2017 and February 2018. Following the Northern Hemisphere harvests and continued stock building in most of the world, except China, wheat prices remained under significant pressure until November. Since then, prices have rallied—winter wheat crops in the key southern Plains region of the United States were likely significantly damaged by cold and dry winter weather.

Soybean prices trended up from August 2017 to February 2018, increasing by 7.5 percent, following concerns over weather in South America. A deterioration in the next Argentine soybean crop because of hot and dry conditions has stimulated early buying, providing price support for the soybean complex. The outlook is bullish as continued feed demand growth and supportive global biodiesel policies counter historically large global stocks.

Maize prices have also increased since August, rising by 10.1 percent, following the upward trend of soybean prices. While dry weather in Argentina has already reduced yields of the partially harvested corn crop, in Brazil, rainfall is hampering planting, potentially reducing future yields.

[2]Box 1.SF.1 studies the role of cobalt and lithium as important raw materials in the production of electric vehicle batteries.

Palm oil prices rose by 3.4 percent from August 2017 to February 2018. Prices trended down throughout 2017 as production growth in Indonesia and Malaysia continued to outpace demand growth and stocks recovered. But prices increased in early 2018 as higher oil prices stimulated biodiesel demand in Indonesia. Another major support for palm oil prices is the reduction in supplies of rival oilseeds, such as soybeans, caused by bad weather.

Cotton prices increased by 11.3 percent between August 2017 and February 2018. The recent price increase follows worries over pest damage to India's crop, resulting in lower stocks available for export, as well as setbacks to the latest US harvest during the hurricane season. Looking ahead, the recent increase in oil prices is likely to provide support for cotton prices, because it makes artificial fibers more expensive. Falling stocks in China are also likely to contribute upward pressure on prices.

Pork prices declined by 11.2 percent from August 2017 to February 2018 due to seasonal factors. While supplies are expected to increase in 2018, especially in the United States, strong demand from China, Japan, Mexico, and the United States implies that markets are again expected to clear at higher year-over-year prices. Beef prices rose by 3.1 percent because supply growth in the United States, a major producer and exporter, was offset by strong export demand. Moreover, drought in the United States reduced the number of cattle placed on feedlots.

Following dry weather in west Africa at the beginning of 2018, output of cocoa is expected to fall in all producer countries, including the top producer, Côte d'Ivoire, although the world is still projected to run a production surplus in 2017–18. The reduction in expected supply comes at a time of strong demand. These developments led to an increase in the price of cocoa of 6.8 percent between August 2017 and February 2018.

The price of Arabica coffee declined by 7.6 percent between August 2017 and February 2018, reflecting weaker-than-expected demand for exports at the beginning of the 2017–18 season.

The price of sugar decreased by 6.7 percent between August 2017 and February 2018, reflecting upward revisions to an expected 2017–18 surplus global production. In India, most notably, output may exceed that of the previous season by as much as 40 percent. Strong supplies from Brazil and Europe in 2018–19 are likely to lead to another surplus year.

The prices of most major agricultural commodities have been revised up slightly, reflecting diminishing excess supply. Overall, food prices are projected to increase by 2.6 percent in 2018 and 1.8 percent in 2019, mostly on account of rising cereal and oilseed prices (compared with the previously projected decrease of 0.7 percent and increase of 2.6 percent, respectively) and are expected to decline again thereafter.

Weather disruptions and variability are an upside risk to the forecast for agricultural prices. The ongoing weak-to-moderate La Niña weather pattern has peaked and is expected to weaken further over the spring. It has proved to be a significant source of price volatility for several commodities. The recent worries over Argentina's soybean crop, as well as the reported setback to winter wheat crops in the key southern Plains region of the United States—both caused by cold and dry winter weather—are consistent with historical patterns of the weather phenomenon. Changes in trade policies may be another upside risk factor, especially for agricultural importers. A depreciating US dollar helped stimulate exports in 2017, but a partial reversal in 2018 could put upward pressure on prices for importing countries. Uncertainty over global corn acreage, as production margins for farmers remain low, could put upward pressure on corn prices by the end of this year.

Box 1.SF.1. The Role of Metals in the Economics of Electric Vehicles

The emergence of electric vehicle markets is supported by the falling costs of lithium-ion batteries, the most common and industry-preferred battery for such vehicles. Conversely, the emergence of electric vehicles has helped reduce the production costs of these batteries through economies of scale. A lithium-ion battery consists of an anode, typically graphitic carbon, and a cathode, separated by a liquid organic electrolyte. The cathode typically uses lithium and some combination of copper, nickel, manganese, aluminum, and cobalt.

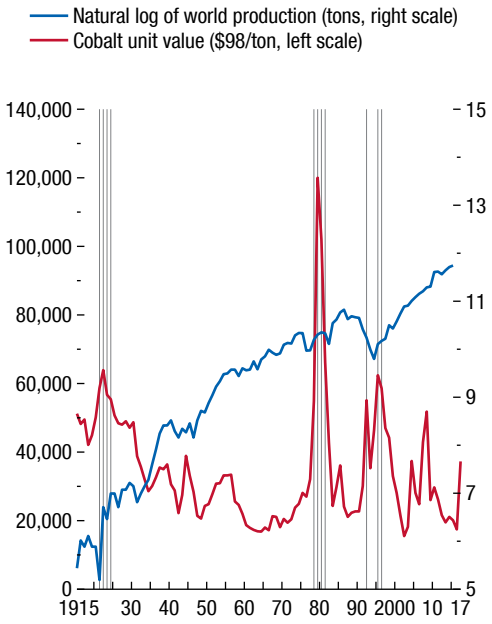
Expenditures on metals for cathode construction make up a large share of total lithium-ion and electric vehicle costs. Substitution with other materials is difficult. Lithium is an important ingredient because it is an element that is easily ionized or "charged." In addition, it allows for high energy density and, as such, yields batteries that dominate in the automotive area and in portable electronics. Cobalt is important for similar reasons but, at historically high prices, its cost share significantly exceeds that of lithium.

As supplies of lithium and cobalt have been unable to keep up with the surge in demand following the rapid growth of electric car sales in recent years, prices have been rising. The Chinese spot price of lithium carbonate increased by more than 30 percent in 2017. Even more noteworthy is the price path of cobalt: after more than doubling between September 2016 and April 2017, prices rose an additional 25 percent between November 2017 and January 2018. The question now is how production of these metals will change. To answer this question, this box analyzes global supply conditions.

Supply Conditions of Lithium and Cobalt

Australia and Chile are by far the biggest producers of lithium, together accounting for more than three-quarters of world production; Argentina is a distant third. According to the US Geological Survey, world reserves stood at 600 times global output in 2015. Production is thus not limited by physical resource scarcity. But, although recent production deficits and rising prices have encouraged new productive capacity, this new capacity has not so far kept prices in check.

Figure 1.SF.1.1. Hundred Years of Cobalt Mining



Sources: US Geological Survey; and IMF staff calculations.
Note: Gray lines indicate boom years.

Unlike lithium, cobalt supply is likely to remain relatively tight, at least over the next 5 to 10 years. In 2016 more than 50 percent of global supply originated in the Democratic Republic of the Congo. China (6.3 percent), Canada (5.9 percent), and Russia (5.0 percent) are other important, but much smaller, players. There is also an unofficial "artisanal" stream of production, some of it under the control of insurgent militias and relying on child labor. Geopolitical instability in the Democratic Republic of the Congo has the potential to disrupt supply, as it did at the end of the 1970s when political unrest led to a price boom (Figure 1.SF.1.1). Furthermore, the refining of cobalt is also geographically concentrated, with China by far being the biggest producer.

The specificities of the cobalt production process are perhaps the weakest link in the supply chain. Cobalt is mostly produced as a by-product of mining of other metals, nickel (50 percent), and copper (35 percent); only 6 percent of world production originates from primary production (see Olivetti and others 2017). For nickel-cobalt mines, most of the revenues come

The authors of this box are Christian Bogmans and Lama Kiyasseh.

Box 1.SF.1 *(continued)*

from nickel. This implies that the supply of cobalt from nickel-cobalt mines is inelastic with respect to the price of cobalt.

The situation is different, however, for copper: given last year's prices, a copper-cobalt mine could have obtained more than half its revenue from cobalt. Most cobalt-copper ore and reserves are in the Democratic Republic of the Congo, which implies that the rising price of cobalt will generate new supplies primarily from that country, further concentrating cobalt production. Last year, mining companies from the West and China invested heavily in copper mines in the Democratic Republic of the Congo.

Since 1915 there have been four price boom episodes—defined as a sequence of years during which real prices are in the upper 10 percent of a normal distribution's right tail. Those during 1978–81 and 1995–96 elicited sharp responses: world production grew by 54.1 and 36.1 percent in 1983 and 1995, respectively, significantly higher than the 50-year average of 4.8 percent. As of January 2018, prices of 15-month cobalt futures suggest that 2018 will be the first boom year since the 1995–96 episode.

Outlook

Future demand for cobalt and lithium will depend on the growth of their end-use products—including electronics and automobiles—which in turn depend on oil prices, economic growth, and battery technology, among other factors. Based on a forecast of global lithium-ion battery consumption, global lithium demand is expected to increase from 181 kilotons of lithium carbon equivalent to 535 kilotons by 2025 (Deutsche Bank 2017). This demand could be matched by investments in productive capacity, but there could still be supply constraints: new mining projects have long lead times, and concerns about the local environmental impact of mining in Latin America and elsewhere could slow the issuance of permits.

When it comes to cobalt, the situation seems to be more pressing. Based on a modest forecast of 10 million electric vehicle sales in 2025, Olivetti and others (2017) suggest a demand for cobalt exceeding 330 kilotons by 2025—almost three times the current world production. Such demand would require average annual growth of more than 11 percent for the next decade, well beyond that of the past 50 years. Historical evidence from the 20th century suggests that most commodity price booms peak within two years of their onset (Jacks 2013) as they give way to permanent changes in productive capacity and new productivity-enhancing investment. But occasionally they last longer. The required growth in cobalt production—historically unprecedented—is a risk to the electrification of the transportation sector.

Several developments could limit price volatility. These include increased recycling of cobalt and new primary production mining techniques. Perhaps most important, progress in battery technology could bring the surge in cobalt prices to a halt. One of the leading alternatives to the lithium-ion battery concept—the solid-state battery—would mean smaller and more-energy-dense batteries that would not need cobalt as an input. Widescale adoption of a mature solid-state battery concept would reduce the demand for cobalt. Continued research in this area will prevent resource constraints from delaying or altogether halting progress in electric vehicles and portable electronics.

Annex Table 1.1.1. European Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change, unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Europe	**3.0**	**2.7**	**2.3**	**2.6**	**2.7**	**2.6**	**2.3**	**2.4**	**2.4**	. . .	. . .	. . .
Advanced Europe	**2.4**	**2.3**	**2.0**	**1.7**	**1.7**	**1.7**	**2.9**	**2.9**	**3.0**	**7.9**	**7.4**	**7.1**
Euro Area[4,5]	2.3	2.4	2.0	1.5	1.5	1.6	3.5	3.2	3.2	9.1	8.4	8.1
Germany	2.5	2.5	2.0	1.7	1.6	1.7	8.0	8.2	8.2	3.8	3.6	3.5
France	1.8	2.1	2.0	1.2	1.5	1.6	–1.4	–1.3	–0.9	9.4	8.8	8.4
Italy	1.5	1.5	1.1	1.3	1.1	1.3	2.9	2.6	2.2	11.3	10.9	10.6
Spain	3.1	2.8	2.2	2.0	1.7	1.6	1.7	1.6	1.7	17.2	15.5	14.8
Netherlands	3.1	3.2	2.4	1.3	2.0	2.2	9.8	9.6	8.9	5.1	4.9	4.8
Belgium	1.7	1.9	1.7	2.2	1.6	1.8	0.1	0.3	0.2	7.2	7.0	6.8
Austria	2.9	2.6	1.9	2.2	2.2	2.2	2.1	2.5	2.0	5.5	5.2	5.1
Greece	1.4	2.0	1.8	1.1	0.7	1.1	–0.8	–0.8	–0.6	21.5	19.8	18.0
Portugal	2.7	2.4	1.8	1.6	1.6	1.6	0.5	0.2	–0.1	8.9	7.3	6.7
Ireland	7.8	4.5	4.0	0.3	0.9	1.3	12.5	9.8	8.7	6.7	5.5	5.2
Finland	3.0	2.6	2.0	0.8	1.2	1.7	0.7	1.4	1.9	8.7	8.0	7.5
Slovak Republic	3.4	4.0	4.2	1.3	1.9	1.9	–1.5	–0.3	0.5	8.3	7.5	7.4
Lithuania	3.8	3.2	3.0	3.7	2.2	2.2	1.0	–0.1	–0.6	7.1	6.9	6.8
Slovenia	5.0	4.0	3.2	1.4	1.7	2.0	6.5	5.7	5.2	6.8	5.9	5.5
Luxembourg	3.5	4.3	3.7	2.1	1.4	1.8	5.5	5.4	5.3	5.8	5.5	5.2
Latvia	4.5	4.0	3.5	2.9	3.0	2.5	–0.8	–1.9	–2.2	8.7	8.2	8.1
Estonia	4.9	3.9	3.2	3.7	3.0	2.5	3.2	2.0	0.7	5.8	6.3	6.7
Cyprus	3.9	3.6	3.0	0.7	0.4	1.6	–4.7	–4.1	–4.6	11.3	10.0	9.1
Malta	6.6	5.7	4.6	1.3	1.6	1.8	10.2	9.9	9.5	4.0	4.2	4.4
United Kingdom	1.8	1.6	1.5	2.7	2.7	2.2	–4.1	–3.7	–3.4	4.4	4.4	4.5
Switzerland	1.1	2.3	2.0	0.5	0.7	1.0	9.3	9.7	9.4	3.2	3.0	3.0
Sweden	2.4	2.6	2.2	1.9	1.5	1.6	3.2	3.1	3.1	6.7	6.3	6.3
Norway	1.8	2.1	2.1	1.9	1.9	2.0	5.1	6.1	6.5	4.2	3.9	3.7
Czech Republic	4.3	3.5	3.0	2.4	2.3	2.0	1.1	0.3	0.4	2.9	3.0	3.2
Denmark	2.1	2.0	1.9	1.1	1.4	1.7	7.6	7.6	7.2	5.8	5.7	5.6
Iceland	3.6	3.2	3.0	1.8	2.4	2.3	3.6	3.3	2.6	2.8	3.1	3.3
San Marino	1.5	1.3	1.3	0.9	1.0	1.1	. . .	. . .	. . .	8.0	7.4	6.8
Emerging and Developing Europe[6]	**5.8**	**4.3**	**3.7**	**6.2**	**6.8**	**6.3**	**–2.6**	**–2.9**	**–2.7**	. . .	. . .	. . .
Turkey	7.0	4.4	4.0	11.1	11.4	10.5	–5.5	–5.4	–4.8	11.0	10.7	10.7
Poland	4.6	4.1	3.5	2.0	2.5	2.5	0.0	–0.9	–1.2	4.9	4.1	4.0
Romania	7.0	5.1	3.5	1.3	4.7	3.1	–3.5	–3.7	–3.7	5.0	4.6	4.6
Hungary	4.0	3.8	3.0	2.4	2.7	3.3	3.6	2.5	2.4	4.0	3.8	3.5
Bulgaria[5]	3.6	3.8	3.1	1.2	2.0	2.1	4.5	3.0	2.3	6.2	6.0	5.8
Serbia	1.8	3.5	3.5	3.1	2.7	3.0	–4.6	–4.5	–4.1	14.6	14.3	14.0
Croatia	2.8	2.8	2.6	1.1	1.5	1.5	3.7	3.0	2.1	12.2	12.0	11.2

Note: Data for some countries are based on fiscal years. Refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Current account position corrected for reporting discrepancies in intra-area transactions.
[5]Based on Eurostat's harmonized index of consumer prices except for Slovenia.
[6]Includes Albania, Bosnia and Herzegovina, Kosovo, FYR Macedonia, and Montenegro.

Annex Table 1.1.2. Asian and Pacific Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change, unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Asia	**5.7**	**5.6**	**5.6**	**2.1**	**2.9**	**2.9**	**2.1**	**1.8**	**1.8**	. . .	. . .	. . .
Advanced Asia	**2.4**	**2.1**	**1.9**	**1.0**	**1.4**	**1.5**	**4.3**	**4.3**	**4.3**	**3.4**	**3.4**	**3.3**
Japan	1.7	1.2	0.9	0.5	1.1	1.1	4.0	3.8	3.7	2.9	2.9	2.9
Korea	3.1	3.0	2.9	1.9	1.7	1.9	5.1	5.5	5.8	3.7	3.6	3.3
Australia	2.3	3.0	3.1	2.0	2.2	2.4	–2.3	–1.9	–2.3	5.6	5.3	5.2
Taiwan Province of China	2.8	1.9	2.0	0.6	1.3	1.3	13.8	13.6	13.5	3.8	3.8	3.7
Singapore	3.6	2.9	2.7	0.6	1.2	1.0	18.8	18.9	18.7	2.2	2.1	2.1
Hong Kong SAR	3.8	3.6	3.2	1.5	2.2	2.1	3.0	3.1	3.2	3.1	3.1	3.1
New Zealand	3.0	2.9	2.9	1.9	1.7	2.1	–2.7	–2.6	–3.0	4.7	4.5	4.6
Macao SAR	9.3	7.0	6.1	1.2	2.2	2.4	30.4	32.1	33.1	2.0	2.0	2.0
Emerging and Developing Asia	**6.5**	**6.5**	**6.6**	**2.4**	**3.3**	**3.3**	**0.9**	**0.6**	**0.6**	. . .	. . .	. . .
China	6.9	6.6	6.4	1.6	2.5	2.6	1.4	1.2	1.2	3.9	4.0	4.0
India[4]	6.7	7.4	7.8	3.6	5.0	5.0	–2.0	–2.3	–2.1	. . .	. . .	. . .
ASEAN-5	**5.3**	**5.3**	**5.4**	**3.1**	**3.2**	**2.9**	**2.1**	**1.5**	**1.3**	. . .	. . .	. . .
Indonesia	5.1	5.3	5.5	3.8	3.5	3.4	–1.7	–1.9	–1.9	5.4	5.2	5.0
Thailand	3.9	3.9	3.8	0.7	1.4	0.7	10.8	9.3	8.6	0.7	0.7	0.7
Malaysia	5.9	5.3	5.0	3.8	3.2	2.4	3.0	2.4	2.2	3.4	3.2	3.0
Philippines	6.7	6.7	6.8	3.2	4.2	3.8	–0.4	–0.5	–0.6	5.7	5.5	5.5
Vietnam	6.8	6.6	6.5	3.5	3.8	4.0	4.1	3.0	2.4	2.2	2.2	2.2
Other Emerging and Developing Asia[5]	**6.0**	**6.1**	**6.3**	**5.2**	**5.2**	**5.3**	**–2.2**	**–2.7**	**–2.6**	. . .	. . .	. . .
Memorandum												
Emerging Asia[6]	**6.6**	**6.5**	**6.6**	**2.3**	**3.2**	**3.2**	**1.0**	**0.7**	**0.7**	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]See country-specific notes for India in the "Country Notes" section of the Statistical Appendix.
[5]Other Emerging and Developing Asia comprises Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Fiji, Kiribati, Lao P.D.R., Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nauru, Nepal, Palau, Papua New Guinea, Samoa, Solomon Islands, Sri Lanka, Timor-Leste, Tonga, Tuvalu, and Vanuatu.
[6]Emerging Asia comprises the ASEAN-5 (Indonesia, Malaysia, Philippines, Thailand, Vietnam) economies, China, and India.

Annex Table 1.1.3. Western Hemisphere Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change, unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
North America	**2.3**	**2.8**	**2.6**	**2.5**	**2.7**	**2.5**	**–2.4**	**–3.0**	**–3.3**	**. . .**	**. . .**	**. . .**
United States	2.3	2.9	2.7	2.1	2.5	2.4	–2.4	–3.0	–3.4	4.4	3.9	3.5
Canada	3.0	2.1	2.0	1.6	2.2	2.2	–3.0	–3.2	–2.5	6.3	6.2	6.2
Mexico	2.0	2.3	3.0	6.0	4.4	3.1	–1.6	–1.9	–2.2	3.4	3.5	3.4
Puerto Rico[4]	–7.7	–3.6	–1.2	1.9	2.2	0.8	. . .	. . .	. . .	12.5	12.0	11.3
South America[5]	**0.7**	**1.7**	**2.5**	**. . .**	**. . .**	**. . .**	**–1.4**	**–2.0**	**–2.2**	**. . .**	**. . .**	**. . .**
Brazil	1.0	2.3	2.5	3.4	3.5	4.2	–0.5	–1.6	–1.8	12.8	11.6	10.5
Argentina	2.9	2.0	3.2	25.7	22.7	15.4	–4.8	–5.1	–5.5	8.4	8.0	7.5
Colombia	1.8	2.7	3.3	4.3	3.5	3.4	–3.4	–2.6	–2.6	9.3	9.2	9.1
Venezuela	–14.0	–15.0	–6.0	1,087.5	13,864.6	12,874.6	2.0	2.4	3.6	27.1	33.3	37.4
Chile	1.5	3.4	3.3	2.2	2.4	3.0	–1.5	–1.8	–1.9	6.7	6.2	5.8
Peru	2.5	3.7	4.0	2.8	1.6	2.0	–1.3	–0.7	–1.1	6.7	6.7	6.7
Ecuador	2.7	2.5	2.2	0.4	1.0	1.4	–0.4	–0.1	0.3	4.6	4.3	4.3
Bolivia	4.2	4.0	3.8	2.8	3.5	4.5	–5.8	–5.4	–5.2	4.0	4.0	4.0
Uruguay	3.1	3.4	3.1	6.2	7.0	6.1	1.6	0.6	–0.1	7.4	7.1	7.1
Paraguay	4.3	4.5	4.1	3.6	4.2	4.0	–1.8	–2.0	–1.2	5.7	5.7	5.7
Central America[6]	**3.7**	**3.9**	**4.0**	**2.6**	**3.4**	**3.4**	**–2.5**	**–2.9**	**–2.6**	**. . .**	**. . .**	**. . .**
Caribbean[7]	**2.7**	**3.8**	**3.7**	**3.8**	**4.5**	**3.5**	**–3.2**	**–3.2**	**–2.9**	**. . .**	**. . .**	**. . .**
Memorandum												
Latin America and the Caribbean[8]	1.3	2.0	2.8	4.1	3.6	3.5	–1.6	–2.1	–2.3	. . .	. . .	. . .
East Caribbean Currency Union[9]	1.8	1.8	3.6	1.1	1.2	1.8	–9.2	–12.0	–8.5	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Puerto Rico is a territory of the United States but its statistical data are maintained on a separate and independent basis.
[5]Includes Guyana and Suriname. Data for Argentina's and Venezuela's consumer prices are excluded. See country-specific notes for Argentina and Venezuela in the "Country Notes" section of the Statistical Appendix.
[6]Central America comprises Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.
[7]The Caribbean comprises Antigua and Barbuda, The Bahamas, Barbados, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.
[8]Latin America and the Caribbean comprises Mexico and economies from the Caribbean, Central America, and South America. Data for Argentina's and Venezuela's consumer prices are excluded. See country-specific notes for Argentina and Venezuela in the "Country Notes" section of the Statistical Appendix.
[9]Eastern Caribbean Currency Union comprises Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines as well as Anguilla and Montserrat, which are not IMF members.

Annex Table 1.1.4. Commonwealth of Independent States Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change, unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Commonwealth of Independent States[4]	**2.1**	**2.2**	**2.1**	**5.5**	**4.6**	**4.8**	**1.3**	**2.8**	**2.3**	**. . .**	**. . .**	**. . .**
Net Energy Exporters	**2.0**	**2.1**	**2.0**	**4.8**	**4.1**	**4.5**	**1.9**	**3.6**	**3.1**	**. . .**	**. . .**	**. . .**
Russia	1.5	1.7	1.5	3.7	2.8	3.7	2.6	4.5	3.8	5.2	5.5	5.5
Kazakhstan	4.0	3.2	2.8	7.4	6.4	5.6	–2.9	–1.4	–1.3	5.0	5.0	5.0
Uzbekistan	5.3	5.0	5.0	12.5	19.5	12.9	3.7	0.2	–1.1	. . .	. . .	. . .
Azerbaijan	0.1	2.0	3.9	13.0	7.0	6.0	3.5	5.6	7.0	5.0	5.0	5.0
Turkmenistan	6.5	6.2	5.6	8.0	9.4	8.2	–11.5	–9.0	–7.8	. . .	. . .	. . .
Net Energy Importers	**3.1**	**3.2**	**3.3**	**10.2**	**8.3**	**6.7**	**–3.7**	**–4.2**	**–4.1**	**. . .**	**. . .**	**. . .**
Ukraine	2.5	3.2	3.3	14.4	11.0	8.0	–3.7	–3.7	–3.5	9.4	9.2	8.8
Belarus	2.4	2.8	2.4	6.0	6.0	6.0	–1.8	–2.5	–2.7	1.0	1.0	1.0
Georgia	4.8	4.5	4.8	6.0	3.6	3.0	–9.3	–10.5	–9.5	. . .	. . .	. . .
Armenia	7.5	3.4	3.5	0.9	3.5	4.0	–2.6	–2.8	–2.8	18.9	18.9	18.6
Tajikistan	7.1	4.0	4.0	7.3	6.3	6.0	–2.6	–5.2	–4.7	. . .	. . .	. . .
Kyrgyz Republic	4.5	3.3	4.9	3.2	4.5	5.0	–7.8	–13.6	–12.2	7.1	7.0	7.0
Moldova	4.0	3.5	3.8	6.6	4.7	5.1	–4.7	–3.7	–4.7	4.2	4.2	4.1
Memorandum												
Caucasus and Central Asia[5]	4.1	3.7	3.9	9.0	9.1	7.2	–2.5	–2.0	–1.7	. . .	. . .	. . .
Low-Income CIS Countries[6]	5.4	4.6	4.7	9.5	13.5	9.6	–1.1	–4.0	–4.2	. . .	. . .	. . .
Net Energy Exporters Excluding Russia	3.9	3.7	3.8	9.6	9.9	7.6	–2.0	–1.2	–1.0	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Table A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Georgia, Turkmenistan, and Ukraine, which are not members of the Commonwealth of Independent States (CIS), are included in this group for reasons of geography and similarity in economic structure.
[5]Caucasus and Central Asia comprises Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.
[6]Low-Income CIS countries comprise Armenia, Georgia, the Kyrgyz Republic, Moldova, Tajikistan, and Uzbekistan.

Annex Table 1.1.5. Middle East, North African Economies, Afghanistan, and Pakistan: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change, unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Middle East, North Africa, Afghanistan, and Pakistan	**2.6**	**3.4**	**3.7**	**6.3**	**8.2**	**6.8**	**–0.9**	**0.5**	**–0.3**	**. . .**	**. . .**	**. . .**
Oil Exporters[4]	**1.7**	**2.8**	**3.3**	**3.4**	**6.3**	**5.5**	**1.2**	**3.0**	**1.8**	**. . .**	**. . .**	**. . .**
Saudi Arabia	–0.7	1.7	1.9	–0.9	3.7	2.0	2.7	5.4	3.6	. . .	. . .	. . .
Iran	4.3	4.0	4.0	9.9	12.1	11.5	4.3	7.0	6.3	11.8	11.7	11.6
United Arab Emirates	0.5	2.0	3.0	2.0	4.2	2.5	4.7	5.3	5.1	. . .	. . .	. . .
Algeria	2.0	3.0	2.7	5.6	7.4	7.6	–12.3	–9.3	–9.7	11.7	11.2	11.8
Iraq	–0.8	3.1	4.9	0.1	2.0	2.0	0.7	0.2	–1.6	. . .	. . .	. . .
Qatar	2.1	2.6	2.7	0.4	3.9	3.5	1.3	2.5	1.8	. . .	. . .	. . .
Kuwait	–2.5	1.3	3.8	1.5	2.5	3.7	2.0	5.8	3.6	1.1	1.1	1.1
Oil Importers[5]	**4.2**	**4.7**	**4.6**	**12.4**	**12.2**	**9.5**	**–6.5**	**–6.2**	**–5.7**	**. . .**	**. . .**	**. . .**
Egypt	4.2	5.2	5.5	23.5	20.1	13.0	–6.5	–4.4	–3.9	12.2	11.1	9.7
Pakistan	5.3	5.6	4.7	4.1	5.0	5.2	–4.1	–4.8	–4.4	6.0	6.1	6.1
Morocco	4.2	3.1	4.0	0.8	1.4	2.0	–3.8	–3.6	–3.5	10.2	9.5	9.2
Sudan	3.2	3.7	3.5	32.4	43.5	39.5	–5.5	–6.2	–6.8	19.6	18.6	17.6
Tunisia	1.9	2.4	2.9	5.3	7.0	6.1	–10.1	–9.2	–7.8	15.3	15.0	14.8
Lebanon	1.2	1.5	1.8	4.5	4.3	3.0	–25.0	–25.8	–25.2	. . .	. . .	. . .
Jordan	2.3	2.5	2.7	3.3	1.5	2.5	–8.7	–8.5	–7.9	. . .	. . .	. . .
Memorandum												
Middle East and North Africa	2.2	3.2	3.6	6.6	8.7	7.1	–0.6	1.1	0.2	. . .	. . .	. . .
Israel[6]	3.3	3.3	3.5	0.2	0.7	1.3	3.0	2.6	2.7	4.2	4.2	4.2
Maghreb[7]	6.4	3.8	3.0	5.4	6.7	6.3	–8.2	–7.8	–7.8	. . .	. . .	. . .
Mashreq[8]	3.9	4.8	5.1	20.8	17.8	11.7	–9.7	–8.2	–7.6	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Tables A6 and A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Includes Bahrain, Libya, Oman, and Yemen.
[5]Includes Afghanistan, Djibouti, Mauritania, and Somalia. Excludes Syria because of the uncertain political situation.
[6]Israel, which is not a member of the economic region, is included for reasons of geography but is not included in the regional aggregates.
[7]The Maghreb comprises Algeria, Libya, Mauritania, Morocco, and Tunisia.
[8]The Mashreq comprises Egypt, Jordan, and Lebanon. Syria is excluded because of the uncertain political situation.

Annex Table 1.1.6. Sub-Saharan African Economies: Real GDP, Consumer Prices, Current Account Balance, and Unemployment

(Annual percent change, unless noted otherwise)

	Real GDP			Consumer Prices[1]			Current Account Balance[2]			Unemployment[3]		
		Projections			Projections			Projections			Projections	
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Sub-Saharan Africa	**2.8**	**3.4**	**3.7**	**11.0**	**9.5**	**8.9**	**–2.6**	**–2.9**	**–3.1**	**. . .**	**. . .**	**. . .**
Oil Exporters[4]	**0.4**	**1.9**	**2.0**	**18.3**	**15.5**	**14.8**	**0.2**	**–0.2**	**0.0**	**. . .**	**. . .**	**. . .**
Nigeria	0.8	2.1	1.9	16.5	14.0	14.8	2.5	0.5	0.4	16.5	. . .	. . .
Angola	0.7	2.2	2.4	31.7	27.9	17.0	–4.5	–2.2	–0.1	. . .	. . .	. . .
Gabon	0.8	2.7	3.7	3.0	2.8	2.5	–4.8	–1.5	–1.9	. . .	. . .	. . .
Chad	–3.1	3.5	2.8	–0.9	2.1	2.6	–5.2	–4.3	–5.5	. . .	. . .	. . .
Republic of Congo	–4.6	0.7	4.6	0.5	1.5	1.6	–12.7	3.0	4.8	. . .	. . .	. . .
Middle-Income Countries[5]	**3.0**	**3.1**	**3.5**	**5.2**	**5.0**	**5.0**	**–2.3**	**–2.7**	**–2.9**	**. . .**	**. . .**	**. . .**
South Africa	1.3	1.5	1.7	5.3	5.3	5.3	–2.3	–2.9	–3.1	27.5	27.9	28.3
Ghana	8.4	6.3	7.6	12.4	8.7	8.0	–4.5	–4.1	–4.0	. . .	. . .	. . .
Côte d'Ivoire	7.8	7.4	7.1	0.8	1.7	2.0	–1.2	–1.5	–1.3	. . .	. . .	. . .
Cameroon	3.2	4.0	4.5	0.6	1.1	1.3	–2.5	–2.5	–2.4	. . .	. . .	. . .
Zambia	3.6	4.0	4.5	6.6	8.2	8.0	–3.3	–2.6	–1.9	. . .	. . .	. . .
Senegal	7.2	7.0	7.0	1.4	1.5	1.5	–9.4	–7.9	–7.5	. . .	. . .	. . .
Low-Income Countries[6]	**6.0**	**5.8**	**6.1**	**8.9**	**7.4**	**6.2**	**–6.8**	**–6.7**	**–7.5**	**. . .**	**. . .**	**. . .**
Ethiopia	10.9	8.5	8.3	9.9	11.2	8.6	–8.1	–6.5	–6.3	. . .	. . .	. . .
Kenya	4.8	5.5	6.0	8.0	4.8	5.0	–6.4	–6.2	–5.7	. . .	. . .	. . .
Tanzania	6.0	6.4	6.6	5.3	4.8	5.0	–3.8	–5.4	–6.0	. . .	. . .	. . .
Uganda	4.5	5.2	5.8	5.6	3.6	4.3	–4.5	–6.9	–9.5	. . .	. . .	. . .
Madagascar	4.1	5.1	5.6	8.1	7.8	6.8	–3.4	–4.0	–4.8	. . .	. . .	. . .
Democratic Republic of the Congo	3.4	3.8	4.0	41.5	25.8	13.7	–0.5	0.3	–0.9	. . .	. . .	. . .
Memorandum												
Sub-Saharan Africa Excluding												
South Sudan	2.9	3.4	3.7	10.5	9.2	8.6	–2.6	–2.9	–3.1	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Year-end to year-end changes can be found in Table A7 in the Statistical Appendix.
[2]Percent of GDP.
[3]Percent. National definitions of unemployment may differ.
[4]Includes Equatorial Guinea and South Sudan.
[5]Includes Botswana, Cabo Verde, Lesotho, Mauritius, Namibia, Seychelles, and Swaziland.
[6]Includes Benin, Burkina Faso, Burundi, the Central African Republic, Comoros, Eritrea, The Gambia, Guinea, Guinea-Bissau, Liberia, Malawi, Mali, Mozambique, Niger, Rwanda, São Tomé and Príncipe, Sierra Leone, Togo, and Zimbabwe.

Annex Table 1.1.7. Summary of World Real per Capita Output

(Annual percent change; in international currency at purchasing power parity)

	Average									Projections		
	2000–09	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2023
World	**2.4**	**4.0**	**3.0**	**2.0**	**2.2**	**2.3**	**2.1**	**1.9**	**2.4**	**2.7**	**2.7**	**2.5**
Advanced Economies	**1.1**	**2.5**	**1.1**	**0.7**	**0.9**	**1.6**	**1.7**	**1.1**	**1.9**	**2.0**	**1.8**	**1.1**
United States	0.8	1.7	0.9	1.5	1.0	1.8	2.1	0.7	1.5	2.1	1.8	0.6
Euro area[1]	1.0	1.8	1.3	–1.1	–0.5	1.1	1.7	1.5	2.3	2.2	1.9	1.4
Germany	0.9	4.2	3.7	0.5	0.3	1.5	0.6	1.0	2.1	2.4	1.9	1.3
France	0.7	1.5	1.6	–0.3	0.1	0.4	0.6	0.8	1.5	1.6	1.6	1.1
Italy	0.1	1.2	0.2	–3.2	–2.3	–0.3	0.9	1.1	1.6	1.3	1.2	0.8
Spain	1.3	–0.4	–1.4	–3.0	–1.3	1.7	3.5	3.3	3.2	2.9	2.3	1.8
Japan	0.4	4.2	–0.3	1.7	2.2	0.5	1.5	1.0	1.9	1.4	1.2	1.0
United Kingdom	1.1	0.9	0.6	0.8	1.4	2.3	1.5	1.1	1.2	1.0	0.9	1.2
Canada	1.0	1.9	2.1	0.6	1.3	1.7	0.1	0.3	1.7	0.8	1.1	0.7
Other Advanced Economies[2]	2.6	5.0	2.5	1.3	1.6	2.1	1.3	1.5	2.0	1.9	1.9	1.6
Emerging Market and Developing Economies	**4.4**	**5.9**	**4.9**	**3.7**	**3.6**	**3.2**	**2.8**	**2.8**	**3.3**	**3.6**	**3.7**	**3.7**
Commonwealth of Independent States	5.9	4.3	4.9	2.8	2.0	1.4	–2.5	0.0	1.8	1.9	1.8	2.0
Russia	5.7	4.5	5.0	3.6	1.7	0.6	–2.6	–0.3	1.5	1.7	1.5	1.7
CIS excluding Russia	7.0	4.4	5.2	1.9	3.4	2.6	–1.7	1.0	2.9	2.8	2.9	3.2
Emerging and Developing Asia	6.9	8.5	6.7	5.9	5.9	5.8	5.8	5.4	5.5	5.5	5.6	5.4
China	9.6	10.1	9.0	7.4	7.3	6.7	6.4	6.1	6.3	6.0	5.9	5.4
India[3]	5.2	8.7	5.2	4.1	5.0	6.0	6.8	5.7	5.4	6.0	6.4	6.8
ASEAN-5[4]	3.6	5.5	3.2	4.7	3.7	3.3	3.6	3.7	4.0	4.1	4.1	4.2
Emerging and Developing Europe	3.5	3.7	6.2	2.1	4.3	3.4	4.3	2.8	5.3	3.8	3.2	2.8
Latin America and the Caribbean	1.6	4.7	3.4	1.7	1.8	0.2	–0.9	–1.9	0.1	0.9	1.7	1.8
Brazil	2.1	6.5	3.0	1.0	2.1	–0.4	–4.3	–4.2	0.2	1.5	1.8	1.6
Mexico	0.2	3.8	2.4	2.4	0.2	1.7	2.2	1.8	1.0	1.3	2.1	2.0
Middle East, North Africa, Afghanistan, and Pakistan	1.9	2.5	3.9	1.0	0.1	–0.1	0.2	2.3	–0.1	1.4	1.7	1.7
Saudi Arabia	0.5	1.3	7.1	2.5	–0.1	1.1	3.3	–0.7	–2.7	–0.3	–0.1	0.3
Sub-Saharan Africa	2.7	4.2	2.4	1.3	2.6	2.4	0.7	–1.2	0.1	0.8	1.0	1.4
Nigeria	5.4	8.3	2.1	1.5	2.6	3.5	–0.1	–4.2	–1.9	–0.6	–0.8	–0.8
South Africa	2.3	1.6	1.8	0.7	1.0	0.3	–0.3	–1.0	–0.3	–0.1	0.1	0.2
Memorandum												
European Union	1.4	1.8	1.5	–0.6	0.1	1.6	2.0	1.7	2.4	2.3	2.0	1.6
Low-Income Developing Countries	3.7	5.3	3.5	1.9	3.7	3.7	1.9	0.9	2.3	2.8	3.1	3.2

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Data calculated as the sum of individual euro area countries.
[2]Excludes the G7 (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and euro area countries.
[3]See country-specific notes for India in the "Country Notes" section of the Statistical Appendix.
[4]Indonesia, Malaysia, Philippines, Thailand, Vietnam.

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