GLOBAL PROSPECTS AND POLICIES

The pickup in growth projected in the April 2017 World Economic Outlook *(WEO) is strengthening. The global growth forecast for 2017 and 2018—3.6 percent and 3.7 percent, respectively—is 0.1 percentage point higher in both years than in the April and July forecasts. Notable pickups in investment, trade, and industrial production, coupled with strengthening business and consumer confidence, are supporting the recovery. With growth outcomes in the first half of 2017 generally stronger than expected, upward revisions to growth are broad based, including for the euro area, Japan, China, emerging Europe, and Russia. These more than offset downward revisions for the United States, the United Kingdom, and India.*

However, the recovery is not complete: although the baseline outlook is better, growth remains weak in many countries. The outlook for advanced economies has improved, notably for the euro area, but in many countries inflation remains weak, indicating that slack has yet to be eliminated, and prospects for growth in GDP per capita are held back by weak productivity growth and rising old-age dependency ratios. Prospects for many emerging market and developing economies in sub-Saharan Africa, the Middle East, and Latin America are lackluster, with several experiencing stagnant per capita incomes. Fuel exporters are particularly hard hit by the protracted adjustment to lower commodity revenues.
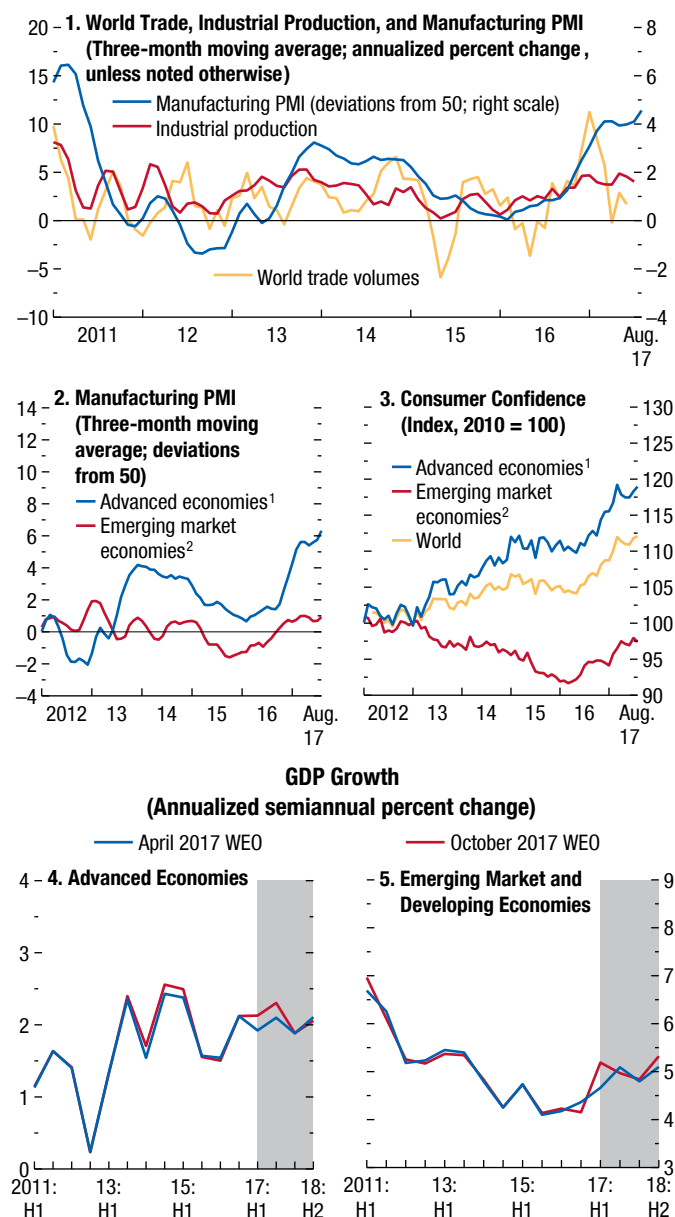
Risks to the baseline are broadly balanced in the short term but skewed to the downside in the medium term. Short-term growth could increase further, as stronger confidence and favorable market conditions unleash pent-up demand, but setbacks are also possible. With high policy uncertainty, missteps—which the baseline assumes will be avoided—or other shocks could materialize, taking a toll on market confidence and asset valuations, and tightening financial conditions. Over the medium term, dealing with financial sector challenges will be essential. Minimizing the risk of a sharp slowdown in China will require the Chinese authorities to intensify their efforts to rein in the credit expansion. Many other economies need to guard against a buildup of financial stability risks in a global environment of easy finance and monitor the risks from volatility as advanced economies' central banks gradually withdraw stimulus. A decom-

pression of risk premiums and higher long-term interest rates would expose fragilities, including by worsening public debt dynamics. Although progress has been made in addressing European banking sector issues, remaining problems need to be addressed forcefully to avoid weakening confidence and fears of adverse feedback loops between low demand, prices, and balance sheets in parts of the euro area. Persistently low inflation in advanced economies, which could ensue if domestic demand were to falter, also carries significant risks, as it could lead to lower medium-term inflation expectations and interest rates, reducing central banks' capacity to cut real interest rates in an economic downturn. Although the chances of advanced economy policies turning inward appear to have diminished in the near term, pressures for increased protectionism have not disappeared and ought to be resisted. A host of noneconomic risks, including intensified conflict and geopolitical tensions, also remain salient.

The welcome cyclical upturn after disappointing growth over the past few years provides an ideal window of opportunity to undertake critical reforms, thereby staving off downside risks and raising potential output and standards of living more broadly. Structural reforms and growth-friendly fiscal policy measures are needed to boost productivity and labor supply, with varying priorities across countries. In advanced economies, monetary policy should remain accommodative until there are firm signs of inflation returning to targets. At the same time, stretched asset valuations and increasing leverage in some market segments bear close monitoring, including through proactive micro- and macroprudential supervision, as necessary. Fiscal policy should be aligned with structural reform efforts, taking advantage of favorable cyclical conditions to place public debt on a sustainable path while supporting demand where still needed and feasible. In many emerging market and developing economies, fiscal space to support demand is limited, especially in commodity exporters. But monetary policy can generally be supportive because inflation appears to have peaked in many countries. Exchange rate flexibility helps the adjustment to external shocks. Efforts to improve governance and the investment climate would also strengthen growth prospects. Growth-enhancing

Figure 1.1. Global Activity Indicators

Global activity strengthened in the first half of 2017, reflecting firmer domestic demand growth in advanced economies and China and improved performance in other large emerging market economies. Global manufacturing purchasing managers' indices indicate strong momentum continued into the third quarter.

1. World Trade, Industrial Production, and Manufacturing PMI
(Three-month moving average; annualized percent change, unless noted otherwise)

- Manufacturing PMI (deviations from 50; right scale)
- Industrial production
- World trade volumes

2. Manufacturing PMI (Three-month moving average; deviations from 50)

- Advanced economies[1]
- Emerging market economies[2]

3. Consumer Confidence (Index, 2010 = 100)

- Advanced economies[1]
- Emerging market economies[2]
- World

GDP Growth (Annualized semiannual percent change)

- April 2017 WEO
- October 2017 WEO

4. Advanced Economies

5. Emerging Market and Developing Economies

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).

reforms would help low-income countries—many of which need to undertake durable fiscal adjustment efforts and reduce financial vulnerabilities—make the best use of the coming demographic dividend by spurring job creation.

Recent Developments and Prospects
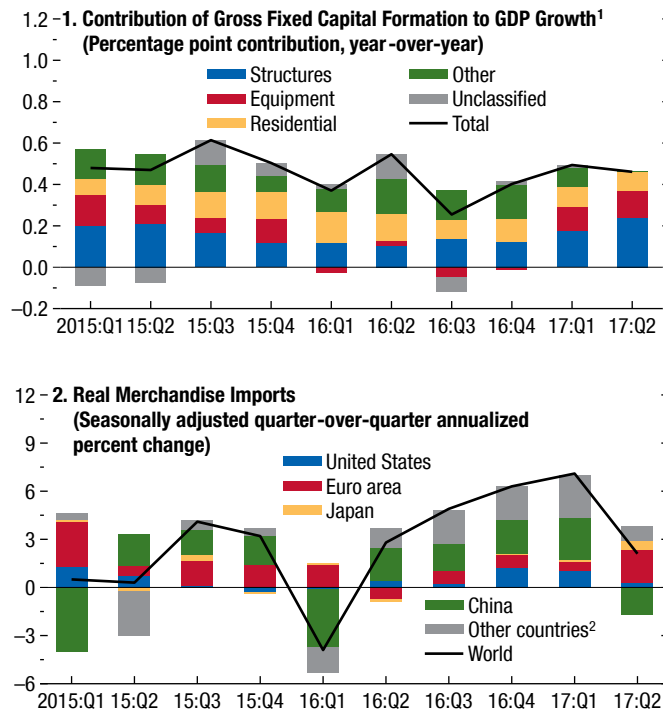
World Economy Keeping Its Momentum

The pickup in global activity that started in 2016 gathered steam in the first half of 2017, reflecting firmer domestic demand growth in advanced economies and China and improved performance in other large emerging market economies. The continued recovery in global investment spurred stronger manufacturing activity (Figures 1.1 and 1.2). World trade growth moderated in the second quarter after expanding very briskly in the first. Global purchasing manager indices and other high-frequency indicators for July and August suggest that global growth momentum continued into the third quarter of 2017.

Among advanced economies, domestic demand and output grew faster in the first half of 2017 than in the second half of 2016. In the United States, weakness in consumption in the first quarter turned out to be temporary, while business investment continued to strengthen, partly reflecting a recovery in the energy sector. In the euro area and Japan, stronger private consumption, investment, and external demand bolstered overall growth momentum in the first half of the year. Growth in most of the other advanced economies, with the notable exception of the United Kingdom, picked up in the first half of 2017 from its pace in the second half of 2016, with both domestic and external demand contributing.

Among emerging market and developing economies, higher domestic demand in China and continued recovery in key emerging market economies supported growth in the first half of 2017. In India, growth momentum slowed, reflecting the lingering impact of the authorities' currency exchange initiative as well as uncertainty related to the midyear introduction of the country-wide Goods and Services Tax. Higher external demand boosted growth in other emerging market economies in East Asia. In Brazil, strong export performance and a diminished pace of contraction in domestic demand allowed the economy to return to positive growth in the first quarter of 2017, after eight quarters of decline. Mexico maintained growth momentum, despite uncertainty related to the renegotiation of the North American Free Trade Agreement and significant

Figure 1.2. Global Fixed Investment and Trade

Investment began to pick up in the third quarter of 2016. Global trade accelerated as well, before moderating more recently.

1. Contribution of Gross Fixed Capital Formation to GDP Growth[1]
(Percentage point contribution, year-over-year)

Legend: Structures, Equipment, Residential, Other, Unclassified, Total

(x-axis: 2015:Q1, 15:Q2, 15:Q3, 15:Q4, 16:Q1, 16:Q2, 16:Q3, 16:Q4, 17:Q1, 17:Q2)

2. Real Merchandise Imports
(Seasonally adjusted quarter-over-quarter annualized percent change)

Legend: United States, Euro area, Japan, China, Other countries[2], World

(x-axis: 2015:Q1, 15:Q2, 15:Q3, 15:Q4, 16:Q1, 16:Q2, 16:Q3, 16:Q4, 17:Q1, 17:Q2)

Source: IMF staff calculations.
[1]Data for 2017:Q2 are based on preliminary estimates for Russia.
[2]Other countries include Brazil, Canada, India, Korea, Mexico, Russia, South Africa, Taiwan, Turkey, and the United Kingdom.

Figure 1.3. Commodity Prices
(Deflated using US consumer price index; index, 2014 = 100)

Commodity prices softened during the first half of 2017.

Legend: Average petroleum spot price, Food, Metals

(x-axis: 2011, 12, 13, 14, 15, 16, 17, 18)

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

tightening of monetary policy over the past two years. Recovering domestic and external demand supported rebounding growth in Russia and Turkey. Internal and cross-border conflict in parts of the Middle East still weighed on economic activity, while Venezuela faced a political and humanitarian crisis amid a deepening recession.
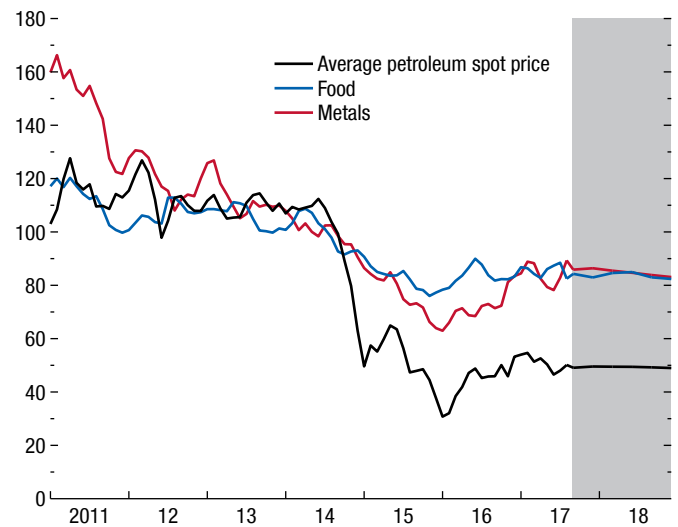
Softer Commodity Prices

The IMF's Primary Commodities Price Index declined by 5 percent between February and August 2017—that is, between the reference periods for the April 2017 WEO and the current report (Figure 1.3). Some of the biggest price drops were among fuels:

• Oil prices fell by 8.1 percent between February and August, even as the Organization of the Petroleum Exporting Countries (OPEC) and some non-OPEC oil exporters announced in May that they would extend oil production cuts through the
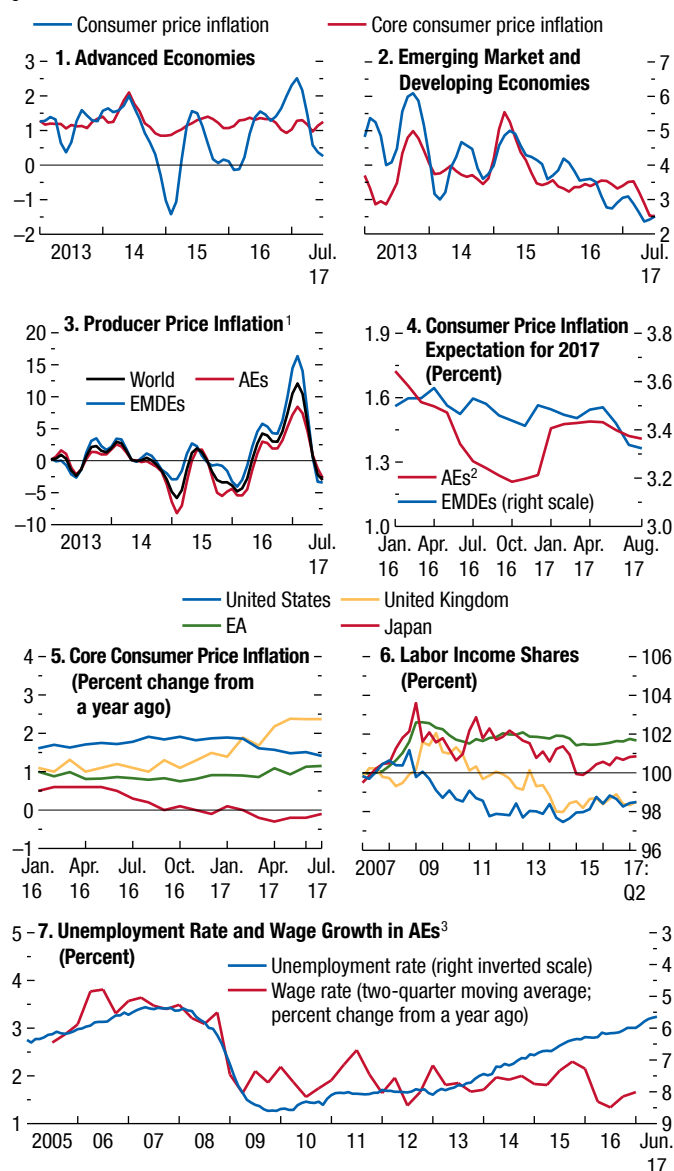
first quarter of 2018. The main drivers of lower prices were higher-than-expected US shale production and stronger-than-expected production recoveries in Libya and Nigeria. In addition, exports from OPEC countries remained at relatively high levels, even with lower production. Following some strengthening in recent weeks, oil prices stood at about $50 a barrel as of late August, still lower than in the spring.

• The natural gas price index—an average for Europe, Japan, and the United States—decreased by 9.6 percent from February to August 2017. The decline was mostly tied to seasonal factors and robust supply from the United States and Russia, and lower oil prices, which some natural gas prices are indexed to. The diplomatic rift between Qatar, the world's largest exporter of liquefied natural gas, and several other countries in the region, including Saudi Arabia, has not affected liquefied natural gas markets, as Qatar's exports have continued.

• The coal price index—an average of Australian and South African prices—increased by 16.5 percent between February and August 2017. Following the end of the disruption to coal transportation in Australia caused by Cyclone Debbie in late March, coal prices declined until June. Strong demand from

Figure 1.4. Global Inflation
(Three-month moving average; annualized percent change, unless noted otherwise)

Headline consumer price inflation has moderated since the spring, reflecting a decline in oil prices. While unemployment rates have continued to decline, wage growth remains subdued.

Legend: Consumer price inflation — Core consumer price inflation

1. Advanced Economies

2. Emerging Market and Developing Economies

3. Producer Price Inflation[1] (World, AEs, EMDEs)

4. Consumer Price Inflation Expectation for 2017 (Percent) (AEs[2], EMDEs (right scale))

Legend: United States — United Kingdom — EA — Japan

5. Core Consumer Price Inflation (Percent change from a year ago)

6. Labor Income Shares (Percent)

7. Unemployment Rate and Wage Growth in AEs[3] (Percent) (Unemployment rate (right inverted scale); Wage rate (two-quarter moving average; percent change from a year ago))

Sources: Consensus Economics; Haver Analytics; Organisation for Economic Co-operation and Development; 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]In panel 3, AEs excludes HKG, ISR, and TWN. EMDEs includes UKR; excludes IDN, IND, PER, and PHL.
[2]In panel 4, AEs includes AUS; excludes LUX.
[3]In panel 7, blue line includes AUS and NZL; excludes BEL. Red line includes AUS and MLT; excludes HKG, SGP, and TWN.

China helped prices recover. Starting July 1, China imposed coal import restrictions on several ports to limit the adverse impact of lower international prices on production. Together with the cutback of coal production in China and sporadic labor disputes in coal mines in Australia, these restrictions have put renewed upward pressure on prices.

Among nonfuel commodities, prices of metals were up modestly but agricultural commodity prices declined:

• Metal prices have increased modestly (0.8 percent) from February to August, with considerable variation across commodities. By June, the metal price index had reached its lowest point in eight months as demand projections (especially from the United States and China) were revised down. However, prices rebounded since and remained on an upward trajectory in August with the improvement in macroeconomic sentiment, especially in China. Copper and aluminum prices increased by slightly more than 9 percent between February and August 2017, reflecting strong demand and tight supplies; iron ore prices dropped by about 16 percent over the same period mainly because of an increase in supply from Australia, Brazil, and China.

• The IMF's agricultural price index declined by 5 percent between February and August 2017. Cereal prices rallied in June amid concerns over hot and dry weather in the Northern Hemisphere, but then declined substantially in August as forecasts for grain stocks at the end of the 2017–18 season increased unexpectedly. Meat prices increased on stronger-than-expected demand and tighter supplies.

Muted Inflation Pressures

Headline consumer price inflation has softened since the spring as the boost to prices from the oil price recovery of 2016 has faded and the decline in oil prices (between March and July) has started to exert downward pressure (Figure 1.4). Expectations of consumer price inflation for the year have therefore diminished, especially in emerging market and developing economies.

Core inflation—inflation rates when fuel and food prices are excluded—has been generally soft. In most advanced economies, core inflation has failed to decisively increase toward central bank targets, even as domestic demand has gathered pace and unemployment rates have fallen compared with the previous

year. Core inflation in the euro area has been stuck in low gear at about 1.2 percent since April (after hovering at just below 1 percent for a couple of years), while in Japan it remained slightly negative for six months through July. In the United States—where core inflation is higher—the annual change in the core personal consumption expenditure deflator (the Federal Reserve's preferred measure) declined from just below 2 percent in early 2017 to 1.4 percent in August. This decline in part reflected one-off factors (including a reduction in prices of cell phone plans and prescription drug prices). Many other advanced economies, including Australia, Canada, Denmark, Korea, Norway, and especially Taiwan Province of China, are also experiencing weak inflation pressure. The United Kingdom, where the strong depreciation of the pound since last summer has passed through into higher consumer prices, is an exception to this pattern.

Sluggishness in core inflation in advanced economies—a surprise in view of stronger-than-expected activity—has coincided with slow transmission of declining unemployment rates into faster wage growth. Real wages in most large advanced economies have moved broadly with labor productivity in recent years, as indicated by flat labor income shares (Figure 1.4, panel 6). As shown in Chapter 2, muted growth in nominal wages in recent years partly reflects sluggishness in labor productivity.[1] However, the analysis also reveals continued spare capacity in labor markets as a key drag: wage growth has been particularly soft where unemployment and the share of workers involuntarily working part time remain high. The corollary of this finding is that, once firms and workers become more confident in the outlook, and labor markets tighten, wages should accelerate. In the short term, higher wages should feed into higher unit labor costs (unless productivity picks up), and higher

[1]The part of the wage-inflation weakening attributable to lower productivity growth would likely have little or no pass-through into weaker price inflation, given that the changes would have no net effect on conventionally measured unit labor costs. A broad slowdown in total factor productivity and an interrelated decline in capital accumulation have been the drivers of the slowdown in labor productivity (Adler and others 2017). Shifts in the composition of the labor force since the global financial crisis may also have exerted downward pressure on productivity and wages. These shifts include the expanded shares of female and older workers, whose participation rates have generally risen (Box 1.1). New entrants tend to be paid less than existing workers (Daly, Hobijn, and Pedtke 2017). A larger share of older workers has also been linked to slower productivity growth (Feyrer 2007; Aiyar, Ebeke, and Shao 2016; Adler and others 2017).

prices should, in turn, spur nominal wage growth in a self-reinforcing dynamic.

In many emerging market and developing economies, the waning of pass-through effects from earlier exchange rate depreciations and, in some cases, recent appreciations against the US dollar, have helped moderate core inflation rates. However, much of the softening of core inflation in emerging market economies in recent months can be attributed to India and Brazil, where a one-off drop in food price inflation in June and high excess capacity in the economy after two years of recession, respectively, have also contributed to weaker inflation. In China, core inflation remained broadly stable at about 2 percent in July. In contrast, some other countries in the Commonwealth of Independent States and the Middle East, North Africa, Afghanistan, and Pakistan region are experiencing continued inflationary pressures in 2017 as a result of exchange rate depreciations, the removal of subsidies, or increases in excise or value-added taxes.

Supportive Financial Conditions

Market sentiment has remained strong and volatility low since the publication of the most recent (April 2017) WEO, even as expectations of US fiscal easing have dimmed. On the monetary policy front, the US Federal Reserve raised short-term interest rates in June to 1–1.25 percent, as expected. Following the Federal Open Market Committee announcement of September 20, markets priced in a 70 percent probability of one additional rate increase by the end of 2017. In most other advanced economies, the monetary policy stance remained broadly unchanged, except for Canada, which raised its policy rate by ¼ of a percentage point in July and September.
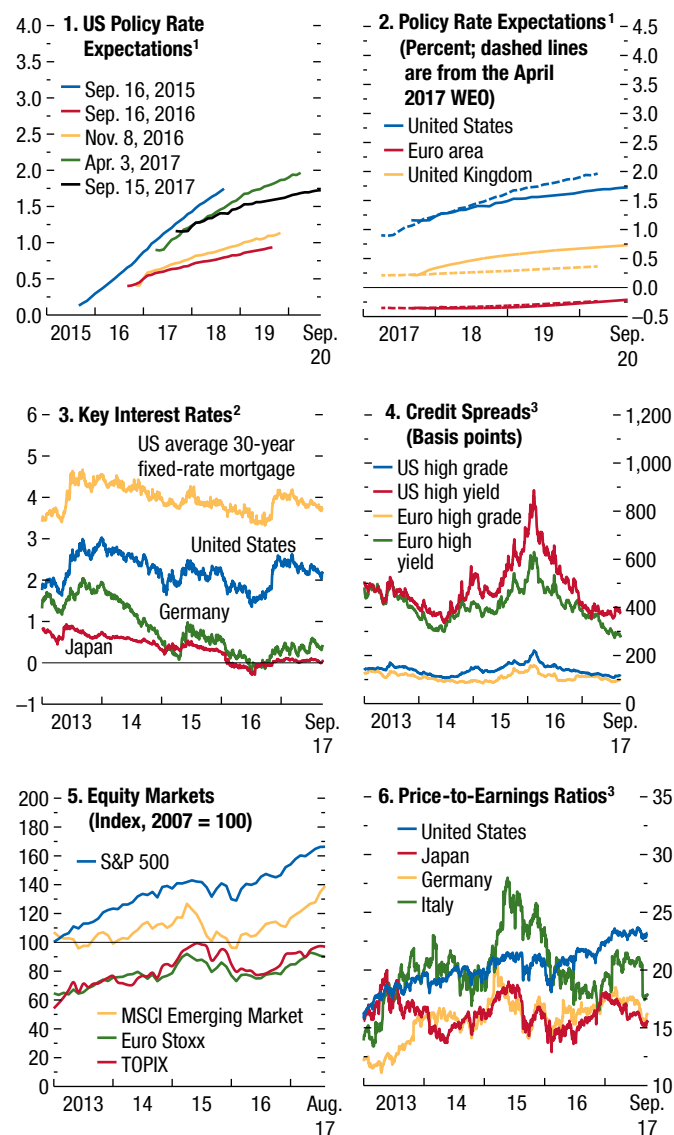
With markets pricing in a slightly more gradual normalization of US monetary policy than anticipated in the spring, given diminished expectations about fiscal stimulus, nominal yields on 10-year US Treasury bonds as of mid-September have declined by about 20 basis points from their March 2017 average (Figure 1.5). Long-term sovereign bond yields have remained broadly stable in Japan and Germany, risen by some 10 basis points in the United Kingdom, and declined by 20–30 basis points in France, Italy, and Spain, as spreads relative to German bund yields compressed sharply, particularly in the aftermath of the French presidential election. Equity markets in advanced economies have continued to rise in recent months amid strong earnings, further improvements in consumer

Figure 1.5. Advanced Economies: Monetary and Financial Market Conditions
(Percent, unless noted otherwise)

Market sentiment has been strong in advanced economies. Compared with the spring, a more gradual normalization of US monetary policy is anticipated and credit spreads remain compressed.

Sources: Bloomberg 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; WEO = *World Economic Outlook.*
[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 September 15, 2017.
[2]Interest rates are 10-year government bond yields, unless noted otherwise. Data are through September 15, 2017.
[3]Data are through September 15, 2017.

and business confidence, and favorable macroeconomic data. Market volatility indicators remain low.

With narrowing interest differentials, the US dollar weakened in real effective terms by over 7 percent from March to mid-September 2017 (Figure 1.6, panel 1), more than reversing its gains after the US election, whereas the euro and the Canadian dollar appreciated by 6 percent on stronger growth prospects and higher policy rates in Canada. Among other currencies, the yen depreciated by about 3 percent and the Swiss franc and Korean won by 4 percent.

In emerging market economies, financial conditions since March generally have been supportive of a pickup in economic activity. Equity markets have strengthened (Figure 1.7); long-term interest rates on local-currency bonds have generally declined (Figure 1.8), China being the exception; and spreads on the Global Emerging Markets Bond Index have fallen slightly. As search for yield continues (Chapter 1 of the October *Global Financial Stability Report* [GFSR]), emerging market currencies have generally strengthened relative to the US dollar. As of August 2017, changes since March in real effective terms have generally been moderate (Figure 1.6, panel 2). The Mexican peso appreciated by 10 percent on tighter monetary policy and declining concerns about trade-related frictions with the United States, while the South African rand depreciated by 7 percent on domestic political uncertainty, the Brazilian *real* depreciated by over 4 percent on monetary policy easing and concerns about the reform agenda, and the Russian ruble depreciated by a similar amount on weakening oil prices.

Capital flows to emerging market economies have remained resilient in recent months, continuing their recovery after a sharp decline in late 2015 and early 2016. As discussed in Box 1.2, this pattern reflects a pickup in capital flows to China and a strong global recovery in nonresident portfolio inflows in the first half of 2017 (Figure 1.9, panel 1) as investor optimism about the global economic outlook improved and financial conditions eased.
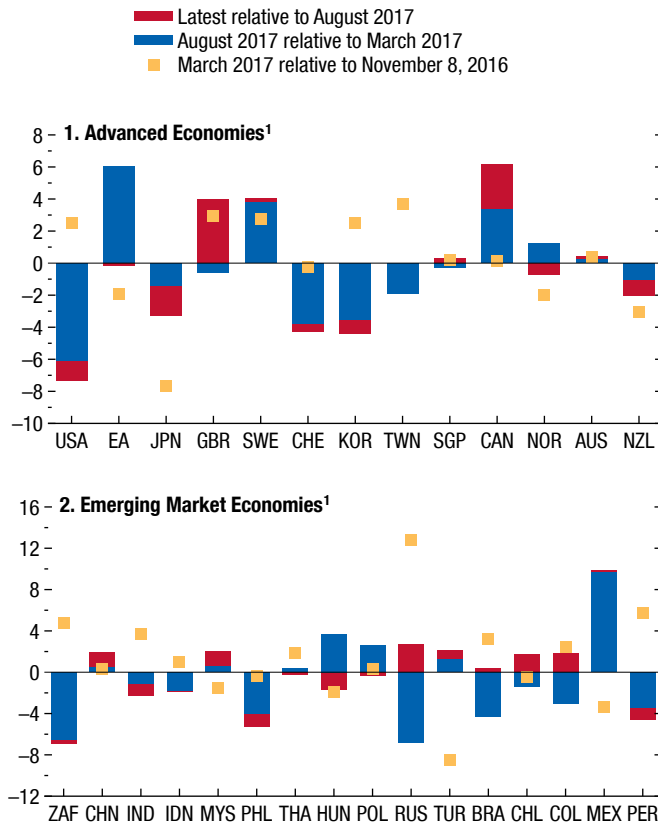
Key Forces Shaping the Outlook

Continued Cyclical Recovery in Advanced Economies (and Revisions to Potential Output)

In advanced economies, the ongoing cyclical recovery is stronger than previously projected. Indeed, positive surprises in growth in the first half of 2017 typically occurred in countries where estimates for output were below potential in 2016 (Figure 1.10,

Figure 1.6. Real Effective Exchange Rate Changes, November 2016–September 2017
(Percent)

In real effective terms, the US dollar weakened by about 7 percent and the euro strengthened by 6 percent from March to August 2017. Changes in most emerging market currencies have been moderate.

Figure 1.7. Emerging Market Economies: Equity Markets and Credit

Equity indices in emerging market economies have risen since the spring and credit growth remains supportive of a pickup in activity.

Source: IMF staff calculations.
Note: EA = euro area. Data labels in the figure use International Organization for Standardization (ISO) country codes.
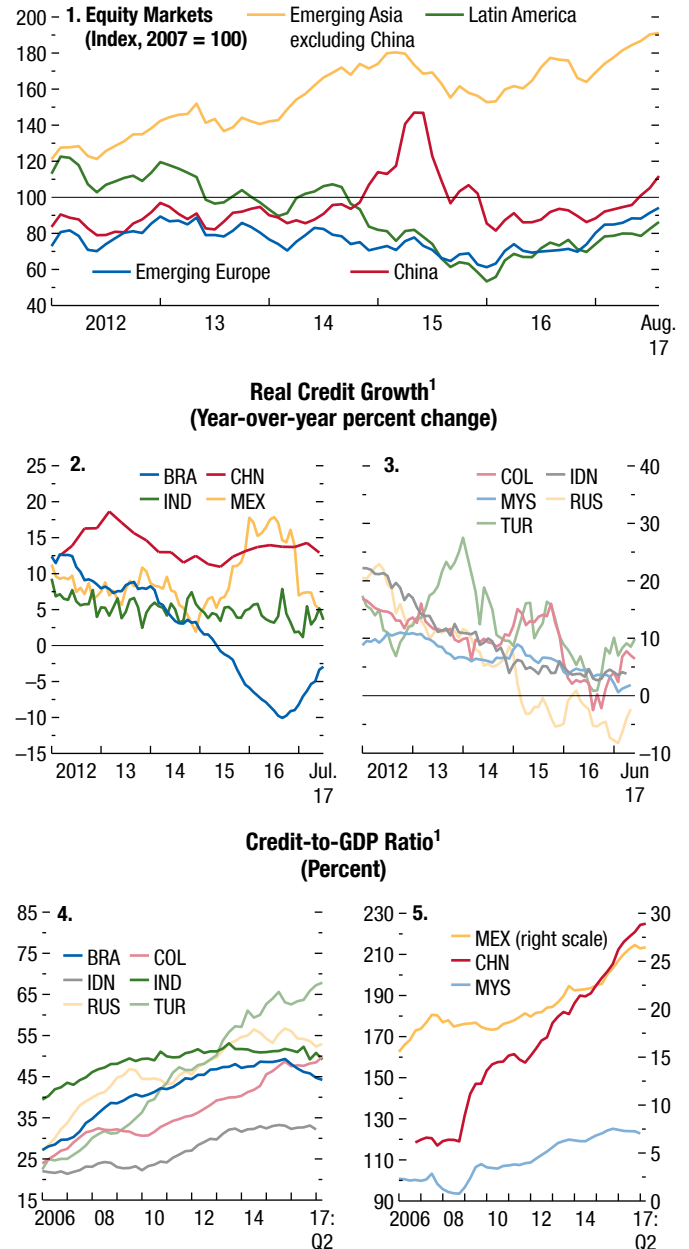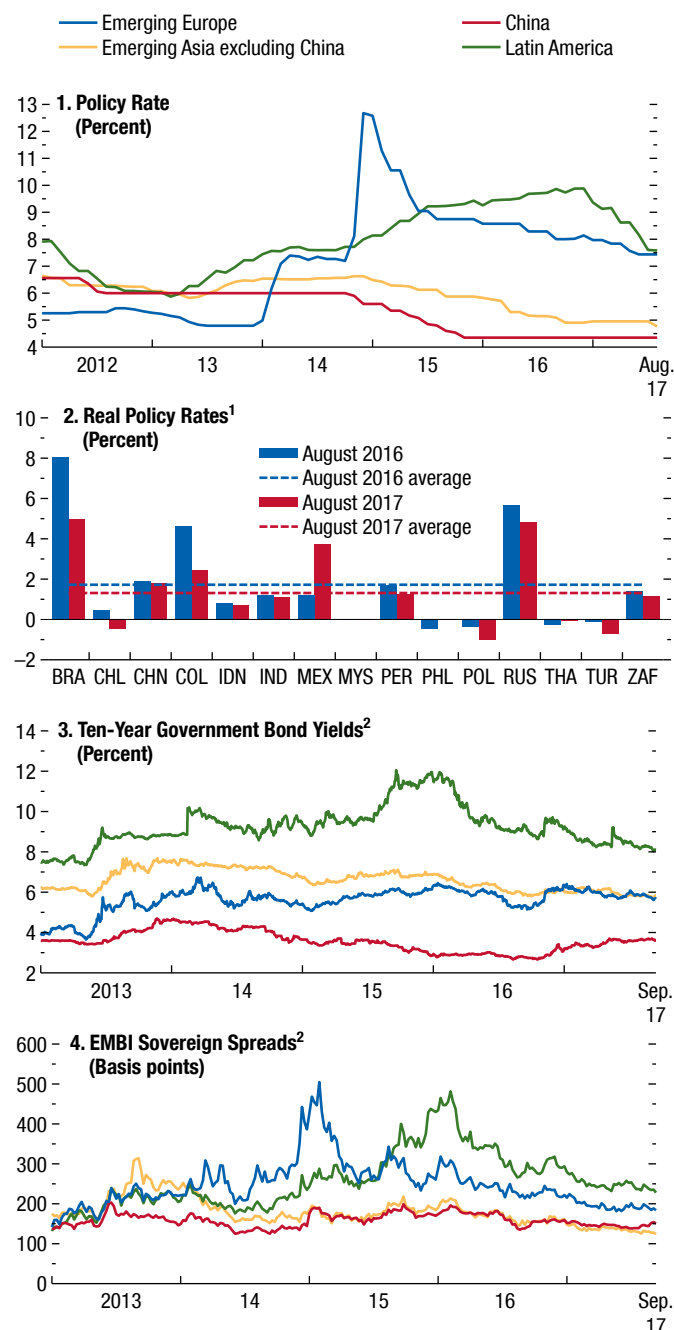[1]Latest data available are for September 15, 2017.

Sources: Bloomberg L.P.; Haver Analytics; IMF, International Financial Statistics (IFS) database; and IMF staff calculations.
Note: Data labels in the figure 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.

panel 1). With growth generally above potential output, economic slack is gradually being reduced.

Positive revisions to growth have also come with some upward revisions to the estimated path of potential output. Indeed, despite an upward revision to the cumulative growth rate over 2016–18 relative to the October 2016 WEO forecast of about 0.7 percentage point, the forecast of the output gap for 2018 has been revised in absolute terms by only half as much. As Figure 1.10, panel 2 shows, the upward revision to growth exceeds the decline in the output gap for most individual countries. The difference is explained by slightly higher projected potential growth during this period (about

Figure 1.8. Emerging Market Economies: Interest Rates

Long maturity yields on local currency debt have generally declined.

1. Policy Rate
(Percent)

2. Real Policy Rates[1]
(Percent)

3. Ten-Year Government Bond Yields[2]
(Percent)

4. EMBI Sovereign Spreads[2]
(Basis points)

Sources: Bloomberg L.P.; Haver Analytics; IMF, *International Financial Statistics;* and IMF staff calculations.
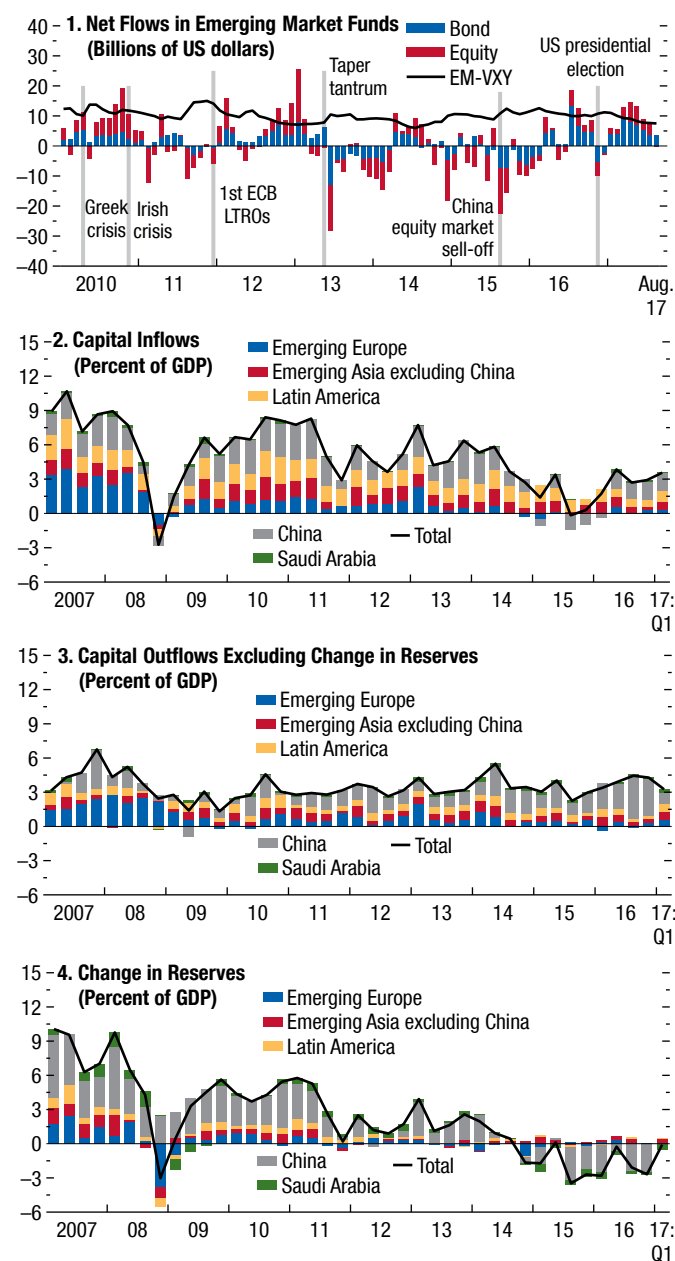Note: Emerging Asia excluding China comprises India, Indonesia, Malaysia, the Philippines, and Thailand; emerging Europe comprises Poland, Romania, Russia, and Turkey; Latin America comprises Brazil, Chile, Colombia, Mexico, and Peru. EMBI = J.P. Morgan Emerging Markets Bond Index. Data labels in the figure use International Organization for Standardization (ISO) country codes.
[1] Deflated by two-year-ahead *World Economic Outlook* inflation projections.
[2] Data are through September 15, 2017.

Figure 1.9. Emerging Market Economies: Capital Flows

Capital flows to emerging market economies continued to recover.

1. Net Flows in Emerging Market Funds
(Billions of US dollars)

2. Capital Inflows
(Percent of GDP)

3. Capital Outflows Excluding Change in Reserves
(Percent of GDP)

4. Change in Reserves
(Percent of GDP)

Sources: Bloomberg 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.

0.1 percentage point a year), driven by higher projected investment, which boosts productive capacity.

With output in 2017 remaining slightly below potential for the advanced economies group, the cyclical recovery still has some room to run. This assessment is consistent with still elevated unemployment rates in a few countries and relatively high shares of workers who would prefer to work full time but can only obtain part-time work (Chapter 2).

Medium-Term Growth in Advanced Economies— Structural Headwinds

In the medium term, growth is expected to soften once gaps close (mostly expected in 2018–19) and output returns to growing at the same rate as its potential. Potential growth will be increasingly held back by slower growth in workforces as populations age and an increasing share of people enter retirement. The speed at which the aging process weighs on the labor force depends crucially on the labor force participation rates of various demographic groups. For the aggregate of advanced economies, labor force participation declined by 0.8 percentage point between 2007 and 2016 for the adult population, with a striking decline of 2.3 percentage points for men in contrast to a 0.7 percentage point increase for women (Box 1.1). Labor force participation rate changes differ notably across advanced economies, despite the overall similarity of demographic trends. For instance, the widely documented decline in the labor force participation rate in the United States contrasts with rising participation rates in many European countries, including Germany, Italy, and the United Kingdom. Policy efforts that encourage further participation by women and reverse declines for men could postpone or soften the demographic shift's drag on potential output.

Potential growth projections are also held back by the assumption that total factor productivity growth will recover only modestly from its low rate of the past few years and hence will stay well below the pace registered before the global financial crisis. Adler and others (2017) discuss in more detail the factors that can explain the decline in productivity growth over the past decade.

Emerging Market Economies and Convergence Prospects

The growth rate for emerging market and developing economies is forecast to rise to 4.6 percent in 2017, 4.9 percent in 2018, and about 5 percent over the medium term. In per capita terms, growth rates are about 1.3 percentage points lower, but substan-

Figure 1.10. Revisions to 2017 Growth and 2016 Output Gaps
(Percent)

The ongoing cyclical recovery is stronger than previously projected, with positive growth surprises in the first half of 2017 typically occurring in countries with output below estimated potential in 2016.
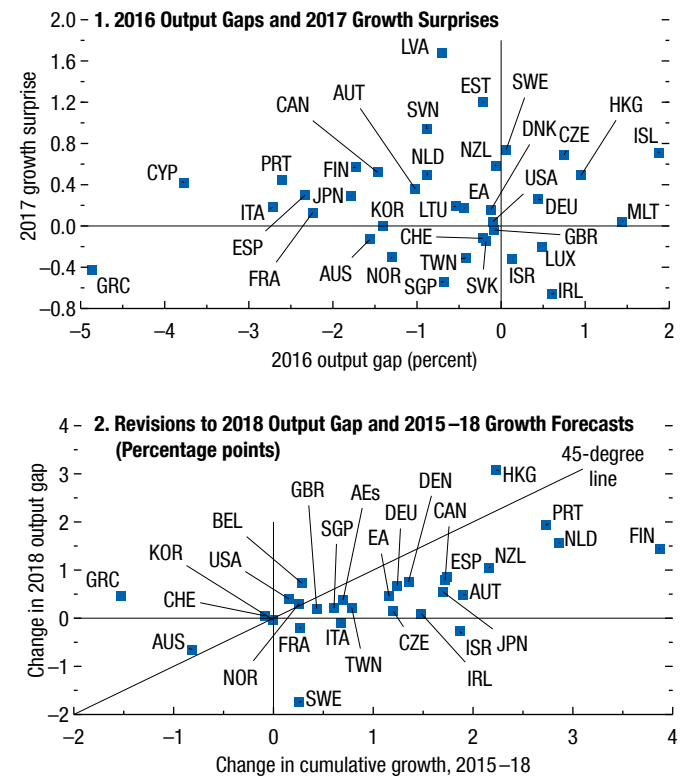
Source: IMF staff estimates.
Note: In panel 1, 2017 growth surprises are differences between current growth estimates for H1:2017 and projections in the October 2016 *World Economic Outlook* (WEO). In panel 2, revisions to output gap and growth forecasts are relative to the October 2016 WEO. Japan's latest figures reflect comprehensive methodological revisions adopted in December 2016. Data labels in the figure use International Organization for Standardization (ISO) country codes. AEs = advanced economies; EA = euro area.

tially above the per capita growth rate for advanced economies (1.4 percent, on average, during 2017–22), implying a gradual convergence in GDP per capita between the two country groups. For emerging market and developing economies, this pace of growth and convergence is slower than during the past decade, but faster than during 1995–2005.

Underlying these aggregate figures is substantial heterogeneity in economic performance across emerging market and developing economies—a theme explored in more detail in Box 1.3. The projected aggregate growth rate over 2017–22 is sustained by fast growth in the two

largest countries, China and India, which account for more than 40 percent of GDP (whether measured at purchasing power parity or market rates) and more than 40 percent of the population of emerging market and developing economies.[2] Indeed, the forecast for growth in GDP per capita falls below the group's aggregate figure of 3.5 percent for about ¾ of emerging market and developing economies. And for 43 economies (28 percent of the total), per capita growth rates are projected to be lower than for advanced economies, implying a decline in relative living standards rather than convergence. Box 1.3 also shows that very small economies (with populations of less than 500,000 people) and fuel exporters are overrepresented among the economies with weak projected growth.

The challenges faced by very small economies, related to such factors as diseconomies of scale, lack of diversification, and the frequency of natural disasters, are well documented.[3] As also highlighted in previous WEOs, many commodity exporters—especially fuel exporters—are still struggling to adjust to sharply lower commodity prices relative to those prevailing earlier in the decade.

Adjustment to Terms-of-Trade Changes in Emerging Market and Developing Economies

A modest cyclical recovery is at work in several emerging market and developing economies that underperformed in recent years because of terms-of-trade losses and idiosyncratic factors. The strength of the Chinese economy, as well as the broader cyclical rebound in manufacturing and trade, are providing some support to this recovery.

Commodity prices have declined modestly relative to the spring, but remain generally higher than their 2016 averages. Movements in commodity terms of trade imply relatively small projected gains and losses in disposable income when compared with the very large losses for commodity exporters during 2015–16 (Figure 1.11). Many countries heavily dependent on commodity revenues still have much of the needed fiscal and external adjustment ahead of them, as also

discussed in the April 2017 *Fiscal Monitor*. So far, exchange rate flexibility has helped the adjustment—countries that allowed greater exchange rate flexibility have drawn less on their buffers (Box 1.4).

Looking ahead, growth in commodity exporters is forecast to recover further, contributing significantly to the projected pickup in global growth between 2016 and 2022 (the last year of the WEO forecast horizon) (Figure 1.12, panels 2–3). Nevertheless, growth in commodity exporters is projected to remain well below its historical average and will account for only a modest share of total growth for emerging market and developing economies as a group (Figure 1.12, panel 1). In contrast, growth is projected to remain high for the group of commodity-importing countries, which account for the lion's share of global growth, with higher growth in India and other commodity importers more than offsetting a slowdown in China. A similar pattern is at play for low-income developing countries, where growth in commodity importers is forecast to exceed that in commodity exporters (Figure 1.12, panel 4).

The Forecast

Policy and Other Assumptions

Fiscal policy at the global level is projected to remain broadly neutral in 2017 and 2018. The overall neutral stance masks some variation across countries and important changes relative to the April 2017 WEO assumptions. Among advanced economies, the fiscal stance (measured by the fiscal impulse) in 2017 is forecast to be broadly neutral, reflecting projected easing in Canada, Germany, Italy, and Korea; broadly neutral policy in Japan and the United States; and tightening in Spain (Figure 1.13, panels 1 and 2).[4]

For 2018, the forecast assumes moderate fiscal policy tightening in advanced economies, reflecting projected tightening in Japan, the United Kingdom, and to a lesser extent, the United States. The projected increase in the structural fiscal balance for the United States in 2018 in the current forecast is similar to the projection in the October 2016 WEO, but represents major tightening relative to the April 2017 assumptions (which included a fiscal impulse of 1½ percent of GDP between 2017 and 2019 on the basis of

---

[2]At market rates, GDP in China in 2016 exceeded the combined GDP of the next largest 12 emerging market and developing economies ranked by size (India, Brazil, Russia, Mexico, Indonesia, Turkey, Saudi Arabia, Argentina, Poland, Islamic Republic of Iran, Thailand, Nigeria).

[3]For instance, see IMF (2016b). Chapter 3 explores the macroeconomic implications of changes in weather patterns for low-income countries.

[4]The fiscal impulse is defined as the change in the structural fiscal balance as a share of potential output.

Figure 1.11. Emerging Markets: Terms-of-Trade Windfall Gains and Losses

Commodity terms-of-trade shifts imply relatively small projected gains and losses in disposable income when compared with the very large losses for commodity exporters during 2015–16.

1. Terms-of-Trade Windfall Losses[1]
(Percent of GDP)

- 2015
- 2016
- 2017–18 (Apr. 2017 WEO commodity prices)
- 2017–18 (Oct. 2017 WEO commodity prices)

SAU   KAZ   DZA   NGA   IRN   RUS   COL   MYS   AUS   CAN   MEX   BRA   ARG   IDN

2. Terms-of-Trade Windfall Gains[1]
(Percent of GDP)

- 2015
- 2016
- 2017–18 (Apr. 2017 WEO commodity prices)
- 2017–18 (Oct. 2017 WEO commodity prices)

USA   EGY   FRA   TUR   DEU   POL   ITA   ESP   JPN   CHN   IND   THA   PAK   KOR
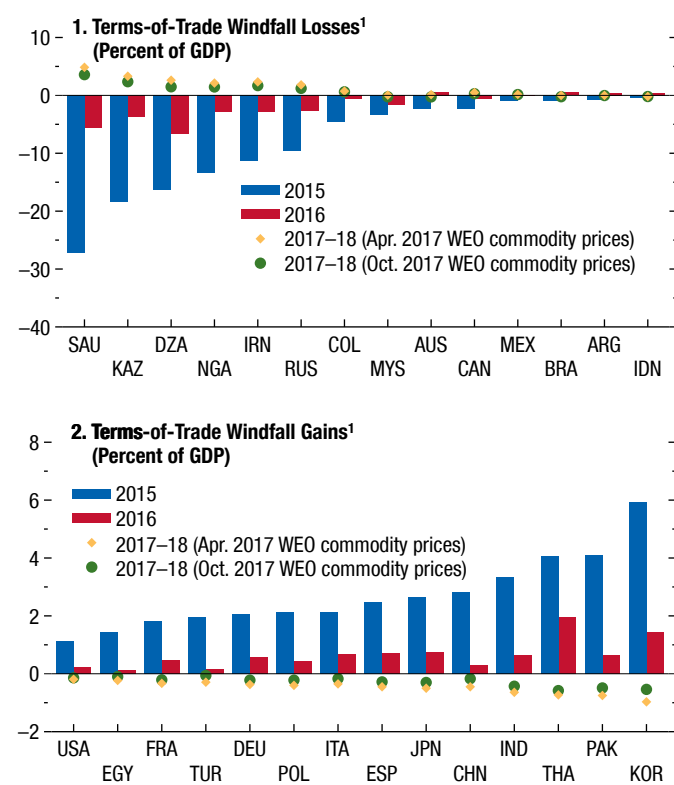
Source: IMF staff estimates.
Note: Data labels in the figure use International Organization for Standardization (ISO) country codes. WEO = *World Economic Outlook.*
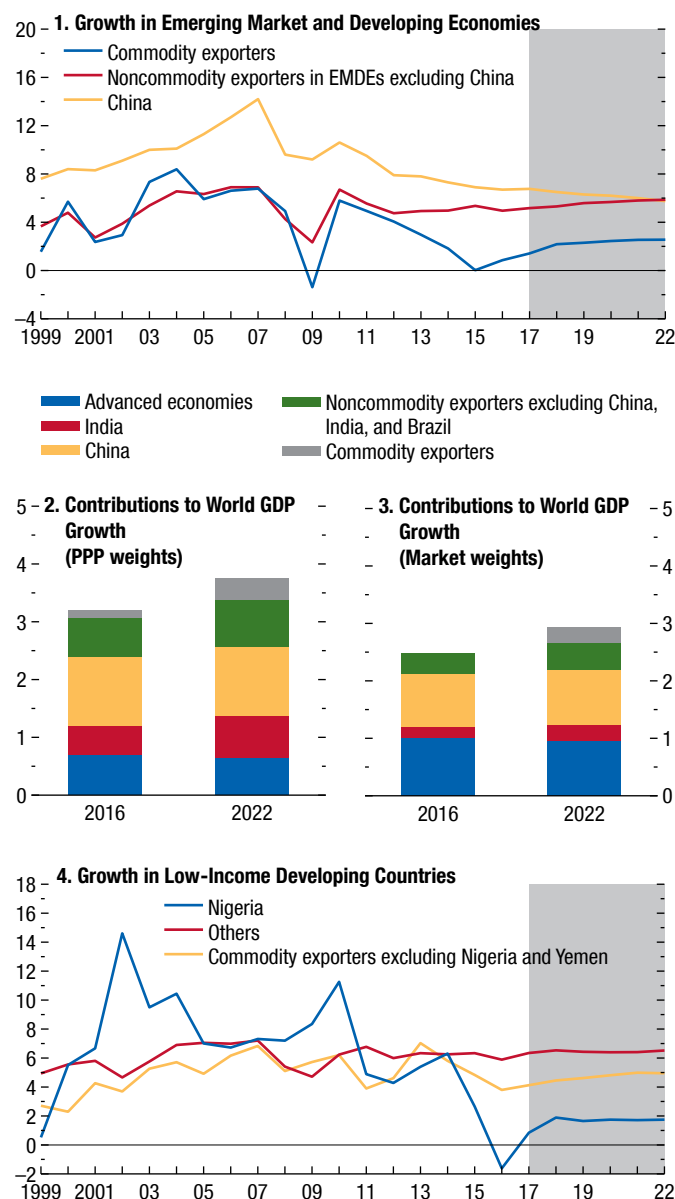[1]Gains (losses) for 2017–18 are simple averages of annual incremental gains (losses) for 2017 and 2018. The windfall is an estimate of the change in disposable income arising from commodity price changes. The windfall gain in year t for a country exporting x US dollars of commodity A and importing 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).

then-anticipated corporate and personal income tax reductions). In emerging market and developing economies, fiscal policy is expected to be broadly neutral in both 2017 and 2018. (The projected looser fiscal policy for the group in 2018 relative to the assumptions in April primarily reflects downward revisions for the structural fiscal balances of Brazil and China).

On monetary policy, the forecast assumes a somewhat more gradual normalization of the policy interest rate in the United States than projected in the April 2017 WEO. With US fiscal policy now set to be

Figure 1.12. GDP Growth, 1999–2022
(Percent)

While commodity exporters are projected to grow at rates well below their historical averages, they are nevertheless expected to contribute significantly to the projected global growth pickup between 2016 and 2022.

1. Growth in Emerging Market and Developing Economies

- Commodity exporters
- Noncommodity exporters in EMDEs excluding China
- China

1999 2001 03 05 07 09 11 13 15 17 19 22

- Advanced economies
- India
- China
- Noncommodity exporters excluding China, India, and Brazil
- Commodity exporters

2. Contributions to World GDP Growth (PPP weights)

2016   2022

3. Contributions to World GDP Growth (Market weights)

2016   2022

4. Growth in Low-Income Developing Countries

- Nigeria
- Others
- Commodity exporters excluding Nigeria and Yemen

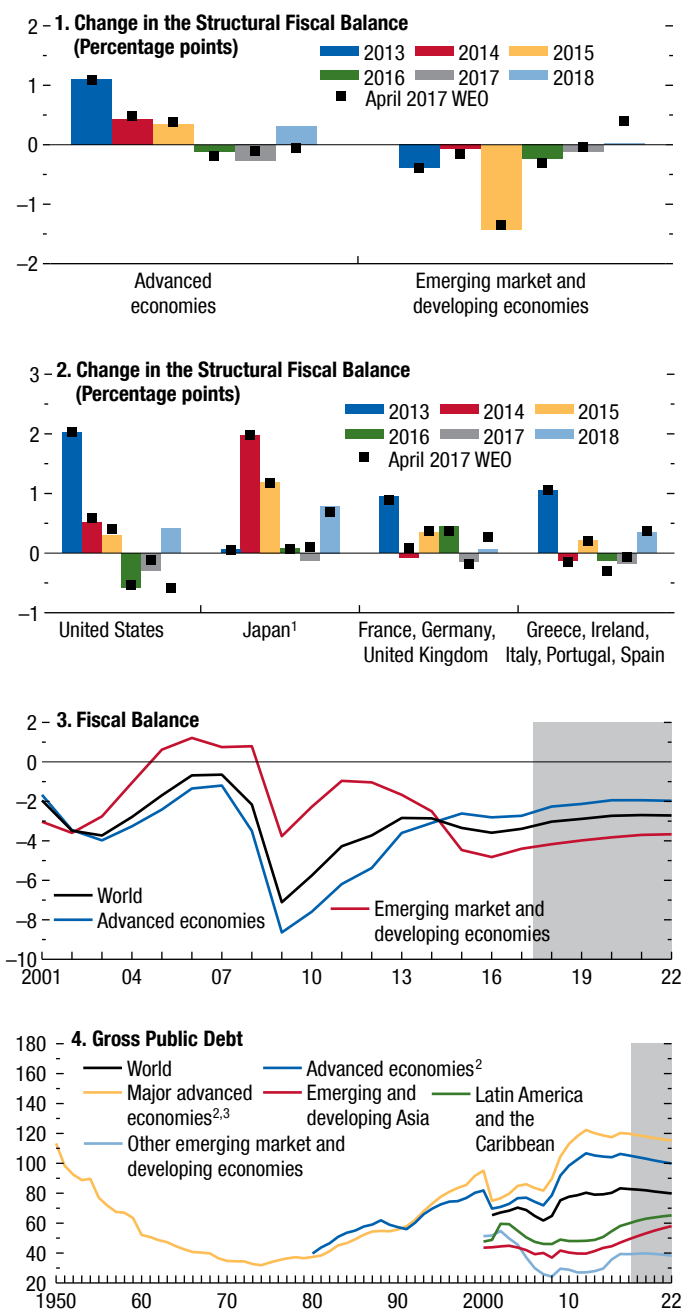1999 2001 03 05 07 09 11 13 15 17 19 22

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

Figure 1.13. Fiscal Indicators
(Percent of GDP, unless noted otherwise)

The projected overall neutral fiscal policy stance for 2017 and 2018 masks variation across countries.

1. Change in the Structural Fiscal Balance
(Percentage points)

2. Change in the Structural Fiscal Balance
(Percentage points)

3. Fiscal Balance

4. Gross Public Debt

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.

broadly neutral in 2017 and projected to tighten in 2018, monetary policy is projected to be moderately more accommodative than previously expected, given weaker projected demand and diminished inflation pressure. The US policy interest rate is projected to remain broadly unchanged at 100–125 basis points for the rest of 2017 and rise by about 75 basis points in 2018, reaching a long-term equilibrium rate of slightly less than 3 percent in 2020. 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 through 2018 and close to zero in Japan over the forecast horizon. The assumed monetary policy stances across emerging market economies vary, reflecting these economies' diverse cyclical positions. Given faster-than-expected declines in inflation rates in many larger economies, such as Brazil, India, and Russia, the projected level of monetary policy interest rates for the group is somewhat lower than in the April 2017 WEO.

Global financial conditions are assumed to remain accommodative, in line with the April projections. As discussed in Chapter 1 of the October 2017 GFSR, an easing of lending conditions in major economies 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 smoothly, without triggering large and protracted increases in financial market volatility. Except for several vulnerable economies, most emerging markets are expected to face generally accommodative financial conditions, with higher policy rates partially offset by a recovery in risk appetite, as reflected in generally contained sovereign bond spreads and the uptick in most equity markets.

Despite the recent decline in commodity prices, the IMF's commodity price index is expected to increase by 12.3 percent in 2017 from its average in 2016, and then fall slightly again in 2018, by 0.1 percent. After averaging $43 a barrel in 2016, oil prices are expected to average $50.3 a barrel in 2017 (down from $55.2 a barrel in the April 2017 WEO), and stay at about that level in 2018. Nonfuel commodity prices are expected to strengthen in 2017–18 from their 2016 averages because of stronger demand for metals from China, tight supply conditions for food, and a general pickup in global demand.

Looking further ahead, futures markets point toward a slight rise in commodity prices by 2022.

While energy prices are expected to increase modestly because of growing demand in emerging markets, food prices are expected to fall moderately as some supply disruptions wane.

Finally, against a backdrop of elevated policy uncertainty, the forecast rests on the assumption that major policy missteps are avoided. For instance, negotiations on the future economic relations between the United Kingdom and the European Union (EU) are assumed to proceed without raising excessive uncertainty, and the arrangements are expected to eventually settle in a manner that avoids a very large increase in economic barriers.

Global Outlook for 2017–18

World growth is projected to increase from 3.2 percent in 2016 to 3.6 percent in 2017 and 3.7 percent in 2018—an upward revision of 0.1 percentage point for both 2017 and 2018 relative to April. Economic activity is projected to pick up speed in all country groups except for the Middle East, and forecasts of the strength of the outlook by region have changed only modestly (Table 1.1).

In line with a stronger-than-expected rise in growth in advanced economies so far in 2017 (especially in the euro area), their projected growth rate has been revised upward to 2.2 percent for 2017 (from 2 percent projected in April)—a notable increase from 1.7 percent in 2016. The advanced economy forecast for 2018 is unchanged, with lower projected US growth (under the assumption that fiscal policy will not provide the previously envisaged boost to demand) offsetting higher projected growth in the euro area.

Growth is forecast to increase strongly in emerging market and developing economies, from an upwardly revised 4.3 percent in 2016 to 4.6 percent in 2017 and 4.9 percent in 2018, a 0.1 percentage point increase for 2017 and 2018 relative to the April forecast. The upward revisions to the growth forecast primarily reflect stronger projected activity in China and in emerging Europe for 2017 and 2018.

As discussed earlier, although commodity importers account for the lion's share of growth in emerging market and developing economies, the projected increase in growth from 2016 is driven primarily by stronger projected growth for commodity exporters, most notably Brazil and Russia, that experienced severe macroeconomic strains during 2015–16. As emphasized in previous WEO reports and in Box 1.3, prospects

across emerging market and developing economies remain heterogeneous, with emerging Asian countries generally growing at a fast pace, but many countries in Latin America, sub-Saharan Africa, and the Middle East struggling with subpar performance.

Growth Outlook for the Medium Term

Global growth is forecast to increase marginally beyond 2018, reaching 3.8 percent by 2021. With growth in advanced economies projected to gradually decline toward potential growth rates of about 1.7 percent once economic slack is eliminated, this further pickup in global activity is entirely driven by emerging market and developing economies. In these countries, growth is projected to increase to 5 percent by the end of the forecast period, with their impact on global activity boosted by their rising world economic weight. This forecast assumes some strengthening of growth in commodity exporters, though to rates much more modest than in 2000–15; a gradual increase in India's growth rate resulting from implementation of important structural reforms; continued strong growth in other commodity importers; and a lower but still high trend growth rate in China (Figure 1.12, panels 1–3).

Growth Outlook for Individual Countries and Regions
Advanced Economies

- The *US* economy is projected to expand at 2.2 percent in 2017 and 2.3 percent in 2018. The projection of a continuation of near-term growth that is moderately above potential reflects very supportive financial conditions and strong business and consumer confidence. The downward revision relative to the April WEO forecasts (of 2.3 and 2.5 percent for 2017 and 2018, respectively) reflects a major correction in US fiscal policy assumptions. Given the significant policy uncertainty, IMF staff's macroeconomic forecast now uses a baseline assumption of unchanged policies, whereas the April 2017 WEO built in a fiscal stimulus from anticipated tax cuts. Over a longer horizon, US growth is expected to moderate. Potential growth is estimated at 1.8 percent, reflecting the assumption of continued sluggish growth in total factor productivity and diminished growth of the workforce due to population aging.
- The *euro area* recovery is expected to gather strength this year, with growth projected to rise to 2.1 percent in 2017, before moderating to 1.9 percent in

Table 1.1. Overview of the *World Economic Outlook* Projections
(Percent change, unless noted otherwise)

		Projections		Difference from July 2017 *WEO Update*[1]		Difference from April 2017 *WEO*[1]	
	2016	2017	2018	2017	2018	2017	2018
World Output	**3.2**	**3.6**	**3.7**	**0.1**	**0.1**	**0.1**	**0.1**
Advanced Economies	**1.7**	**2.2**	**2.0**	**0.2**	**0.1**	**0.2**	**0.0**
United States	1.5	2.2	2.3	0.1	0.2	−0.1	−0.2
Euro Area	1.8	2.1	1.9	0.2	0.2	0.4	0.3
Germany	1.9	2.0	1.8	0.2	0.2	0.4	0.3
France	1.2	1.6	1.8	0.1	0.1	0.2	0.2
Italy	0.9	1.5	1.1	0.2	0.1	0.7	0.3
Spain	3.2	3.1	2.5	0.0	0.1	0.5	0.4
Japan[2]	1.0	1.5	0.7	0.2	0.1	0.3	0.1
United Kingdom	1.8	1.7	1.5	0.0	0.0	−0.3	0.0
Canada	1.5	3.0	2.1	0.5	0.2	1.1	0.1
Other Advanced Economies[3]	2.2	2.6	2.5	0.3	0.1	0.3	0.1
Emerging Market and Developing Economies	**4.3**	**4.6**	**4.9**	**0.0**	**0.1**	**0.1**	**0.1**
Commonwealth of Independent States	0.4	2.1	2.1	0.4	0.0	0.4	0.0
Russia	−0.2	1.8	1.6	0.4	0.2	0.4	0.2
Excluding Russia	1.9	2.9	3.3	0.4	−0.2	0.4	−0.2
Emerging and Developing Asia	6.4	6.5	6.5	0.0	0.0	0.1	0.1
China	6.7	6.8	6.5	0.1	0.1	0.2	0.3
India[4]	7.1	6.7	7.4	−0.5	−0.3	−0.5	−0.3
ASEAN-5[5]	4.9	5.2	5.2	0.1	0.0	0.2	0.0
Emerging and Developing Europe	3.1	4.5	3.5	1.0	0.3	1.5	0.2
Latin America and the Caribbean	−0.9	1.2	1.9	0.2	0.0	0.1	−0.1
Brazil	−3.6	0.7	1.5	0.4	0.2	0.5	−0.2
Mexico	2.3	2.1	1.9	0.2	−0.1	0.4	−0.1
Middle East, North Africa, Afghanistan, and Pakistan	5.0	2.6	3.5	0.0	0.2	0.0	0.1
Saudi Arabia	1.7	0.1	1.1	0.0	0.0	−0.3	−0.2
Sub-Saharan Africa	1.4	2.6	3.4	−0.1	−0.1	0.0	−0.1
Nigeria	−1.6	0.8	1.9	0.0	0.0	0.0	0.0
South Africa	0.3	0.7	1.1	−0.3	−0.1	−0.1	−0.5
Memorandum							
European Union	2.0	2.3	2.1	0.2	0.2	0.3	0.3
Low-Income Developing Countries	3.6	4.6	5.2	0.0	0.0	−0.1	−0.1
Middle East and North Africa	5.1	2.2	3.2	0.0	0.2	−0.1	0.0
World Growth Based on Market Exchange Rates	2.5	3.0	3.1	0.1	0.1	0.1	0.1
World Trade Volume (goods and services)	**2.4**	**4.2**	**4.0**	**0.2**	**0.1**	**0.4**	**0.1**
Imports							
Advanced Economies	2.7	4.0	3.8	0.0	0.2	0.0	−0.2
Emerging Market and Developing Economies	2.0	4.4	4.9	0.1	0.2	−0.1	0.6
Exports							
Advanced Economies	2.2	3.8	3.6	−0.1	0.2	0.3	0.4
Emerging Market and Developing Economies	2.5	4.8	4.5	1.0	0.0	1.2	0.2
Commodity Prices (US dollars)							
Oil[6]	−15.7	17.4	−0.2	−3.8	−0.3	−11.5	0.1
Nonfuel (average based on world commodity export weights)	−1.8	7.1	0.5	1.7	1.9	−1.4	1.8
Consumer Prices							
Advanced Economies	0.8	1.7	1.7	−0.2	−0.1	−0.3	−0.2
Emerging Market and Developing Economies[7]	4.3	4.2	4.4	−0.3	−0.2	−0.5	0.0
London Interbank Offered Rate (percent)							
On US Dollar Deposits (six month)	1.1	1.4	1.9	−0.2	−0.3	−0.3	−0.9
On Euro Deposits (three month)	−0.3	−0.3	−0.3	0.0	−0.1	0.0	−0.1
On Japanese Yen Deposits (six month)	0.0	0.1	0.2	0.1	0.1	0.1	0.2

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during July 20–August 17, 2017. 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, July 2017 *World Economic Outlook Update*, and April 2017 *World Economic Outlook* forecasts.

[2]Japan's historical national accounts figures reflect a comprehensive revision by the national authorities, released in December 2016. The main revisions are the switch from the System of National Accounts 1993 to the System of National Accounts 2008 and the updating of the benchmark year from 2005 to 2011.

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

[4]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.

Table 1.1 *(continued)*

	Year-over-Year				Q4-over-Q4[8]			
			Projections				Projections	
	2015	2016	2017	2018	2015	2016	2017	2018
World Output	**3.4**	**3.2**	**3.6**	**3.7**	**3.2**	**3.2**	**3.7**	**3.7**
Advanced Economies	**2.2**	**1.7**	**2.2**	**2.0**	**1.9**	**2.0**	**2.2**	**1.9**
United States	2.9	1.5	2.2	2.3	2.0	1.8	2.3	2.3
Euro Area	2.0	1.8	2.1	1.9	1.9	1.9	2.2	1.7
Germany	1.5	1.9	2.0	1.8	1.3	1.9	2.2	1.8
France	1.1	1.2	1.6	1.8	1.0	1.2	2.1	1.4
Italy	0.8	0.9	1.5	1.1	1.0	1.2	1.5	1.0
Spain	3.2	3.2	3.1	2.5	3.5	3.0	3.1	2.1
Japan[2]	1.1	1.0	1.5	0.7	1.1	1.7	1.4	0.5
United Kingdom	2.2	1.8	1.7	1.5	1.7	1.9	1.3	1.5
Canada	0.9	1.5	3.0	2.1	0.4	2.0	3.0	2.0
Other Advanced Economies[3]	2.1	2.2	2.6	2.5	2.0	2.5	2.5	2.6
Emerging Market and Developing Economies	**4.3**	**4.3**	**4.6**	**4.9**	**4.4**	**4.2**	**5.0**	**5.2**
Commonwealth of Independent States	−2.2	0.4	2.1	2.1	−2.8	0.6	1.9	2.2
Russia	−2.8	−0.2	1.8	1.6	−3.3	0.3	1.9	2.0
Excluding Russia	−0.6	1.9	2.9	3.3	. . .	. . .	. . .	. . .
Emerging and Developing Asia	6.8	6.4	6.5	6.5	6.9	6.2	6.6	6.5
China	6.9	6.7	6.8	6.5	6.8	6.8	6.5	6.5
India[4]	8.0	7.1	6.7	7.4	8.9	5.6	7.9	7.4
ASEAN-5[5]	4.9	4.9	5.2	5.2	4.9	4.8	5.3	5.2
Emerging and Developing Europe	4.7	3.1	4.5	3.5	4.8	3.8	2.6	4.7
Latin America and the Caribbean	0.1	−0.9	1.2	1.9	−1.3	−1.1	1.7	2.0
Brazil	−3.8	−3.6	0.7	1.5	−5.8	−2.5	1.9	1.8
Mexico	2.6	2.3	2.1	1.9	2.5	2.3	1.0	3.2
Middle East, North Africa, Afghanistan, and Pakistan	2.7	5.0	2.6	3.5	. . .	. . .	. . .	. . .
Saudi Arabia	4.1	1.7	0.1	1.1	4.3	2.2	0.6	1.4
Sub-Saharan Africa	3.4	1.4	2.6	3.4	. . .	. . .	. . .	. . .
Nigeria	2.7	−1.6	0.8	1.9	. . .	. . .	. . .	. . .
South Africa	1.3	0.3	0.7	1.1	0.3	0.4	1.1	0.8
Memorandum								
European Union	2.3	2.0	2.3	2.1	2.3	2.1	2.2	2.0
Low-Income Developing Countries	4.7	3.6	4.6	5.2	. . .	. . .	. . .	. . .
Middle East and North Africa	2.6	5.1	2.2	3.2	. . .	. . .	. . .	. . .
World Growth Based on Market Exchange Rates	2.7	2.5	3.0	3.1	2.4	2.6	3.1	3.0
World Trade Volume (goods and services)	**2.8**	**2.4**	**4.2**	**4.0**	**. . .**	**. . .**	**. . .**	**. . .**
Imports								
Advanced Economies	4.6	2.7	4.0	3.8	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	−0.9	2.0	4.4	4.9	. . .	. . .	. . .	. . .
Exports								
Advanced Economies	3.8	2.2	3.8	3.6	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	1.8	2.5	4.8	4.5	. . .	. . .	. . .	. . .
Commodity Prices (US dollars)								
Oil[6]	−47.2	−15.7	17.4	−0.2	−43.4	16.2	1.4	1.1
Nonfuel (average based on world commodity export weights)	−17.5	−1.8	7.1	0.5	−19.1	9.9	3.1	0.6
Consumer Prices								
Advanced Economies	0.3	0.8	1.7	1.7	0.4	1.2	1.5	1.9
Emerging Market and Developing Economies[7]	4.7	4.3	4.2	4.4	4.6	3.7	3.9	3.7
London Interbank Offered Rate (percent)								
On US Dollar Deposits (six month)	0.5	1.1	1.4	1.9	. . .	. . .	. . .	. . .
On Euro Deposits (three month)	0.0	−0.3	−0.3	−0.3	. . .	. . .	. . .	. . .
On Japanese Yen Deposits (six month)	0.1	0.0	0.1	0.2	. . .	. . .	. . .	. . .

[5]Indonesia, Malaysia, Philippines, Thailand, Vietnam.
[6]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 $42.84 in 2016; the assumed price based on futures markets is $50.28 in 2017 and $50.17 in 2018.
[7]Excludes Argentina and Venezuela. See country-specific notes for Argentina and Venezuela in the "Country Notes" section of the Statistical Appendix.
[8]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.

2018 (slightly stronger than the 1.8 percent growth estimated for 2016). The forecast is 0.4 percentage point and 0.3 percentage point higher for 2017 and 2018, respectively, relative to April. The increase in growth in 2017 mostly reflects an acceleration in exports in the context of the broader pickup in global trade and continued strength in domestic demand growth supported by accommodative financial conditions amid diminished political risk and policy uncertainty. Growth is forecast to pick up this year and moderate next year in *Germany* (2.0 percent in 2017 and 1.8 percent in 2018), hold steady this year and moderate next year in *Spain* (3.1 percent in 2017 and 2.5 percent in 2018), rise this year and next in *France* (1.6 percent in 2017 and 1.8 percent in 2018), and increase this year and soften next year in *Italy* (1.5 percent in 2017 and 1.1 percent in 2018). The medium-term outlook for the euro area remains subdued because projected potential growth is held back by weak productivity, adverse demographics and in some countries, a public and private debt overhang.

- Growth in the *United Kingdom* is projected to subside to 1.7 percent in 2017 and 1.5 percent in 2018. The 0.3 percentage point downward revision to the 2017 forecast relative to the April 2017 WEO is driven by weaker-than-expected growth outturns for the first two quarters of the year. The slowdown is driven by softer growth in private consumption as the pound's depreciation weighed on household real income. The medium-term growth outlook is highly uncertain and will depend in part on the new economic relationship with the EU and the extent of the increase in barriers to trade, migration, and cross-border financial activity.

- In *Japan*, momentum is driven by the strengthening of global demand and policy actions to sustain a supportive fiscal stance, and is expected to continue in 2017, with growth forecast at 1.5 percent. The pace of expansion is expected to weaken thereafter (to 0.7 percent in 2018), based on the assumption that fiscal support fades as currently scheduled, private consumption growth moderates, and the boost from 2020 Olympics-related private investment is offset by higher imports and slower projected growth in foreign demand. Over the medium term, a shrinking Japanese labor force will curtail GDP growth although, in per capita income terms, Japan's growth is projected to remain close to recent averages.

- In most other advanced economies, the pace of activity is expected to accelerate.
  - Growth in oil-exporting advanced economies is projected to recover. In 2017, it is forecast to rise to 1.4 percent in *Norway*, and increase (by about 1½ percentage points) to 3.0 percent in *Canada*. This growth pickup reflects reduced drag from the adjustment to lower oil and gas prices and accommodative fiscal and monetary policies. By contrast, growth is expected to soften temporarily to 2.2 percent in *Australia*, where housing investment and mining exports in the first half of the year were undermined by bad weather.
  - A pickup in growth for 2017 is projected in *Korea* (to 3.0 percent), *Hong Kong Special Administrative Region* (to 3.5 percent), *Taiwan Province of China* (to 2.0 percent), and *Singapore* (to 2.5 percent). A common driver behind this projected pickup (which is generally stronger than projected in the April 2017 WEO) is the recovery in global trade and China's import demand.

Emerging Market and Developing Economies

- In *China*, growth is projected to notch up to 6.8 percent in 2017, and to slow to 6.5 percent in 2018. The upward revision to the 2017 forecast—0.2 percentage point relative to the April 2017 WEO—reflects the stronger-than-expected outturn in the first half of the year underpinned by previous policy easing and supply-side reforms. For 2018, the upward revision of 0.3 percentage point mainly reflects an expectation that the authorities will maintain a sufficiently expansionary policy mix (especially through high public investment) to meet their target of doubling real GDP between 2010 and 2020. Growth rates for 2019–22 have similarly been revised upward by 0.2 percentage point, on average, reflecting the assumed delay in withdrawing stimulus. Delay comes at the cost of further large increases in debt, however, so downside risks around this baseline have also increased.

- In the rest of emerging market and developing Asia, growth is expected to be vigorous and marginally higher than in the April 2017 WEO. Strong government spending and data revisions in *India* led to an upward revision of 2016 growth to 7.1 percent (6.8 percent in April), with upward revisions of about 0.2 percentage point, on average, for 2014 and 2015. However, the growth projection for 2017 has been revised down to 6.7 percent (7.2 percent in

April), reflecting still lingering disruptions associated with the currency exchange initiative introduced in November 2016, as well as transition costs related to the launch of the national Goods and Services Tax in July 2017. The latter move, which promises the unification of India's vast domestic market, is among several key structural reforms under implementation that are expected to help push growth above 8 percent in the medium term. In the ASEAN-5 economies (*Indonesia, Malaysia, Philippines, Thailand, Vietnam*), growth is expected to strengthen in 2017 to 5.2 percent (from 5 percent in April), partly because of stronger-than-expected external demand from China and Europe. Specifically, economic activity in 2017 is projected to expand by 5.2 percent in *Indonesia*, 5.4 percent in *Malaysia*, 6.6 percent in the *Philippines*, 3.7 percent in *Thailand*, and 6.3 percent in *Vietnam*.

- In *Latin America and the Caribbean*, where GDP contracted by almost 1 percent in 2016, real GDP is projected to increase by 1.2 percent in 2017 and 1.9 percent in 2018—broadly as in the April 2017 WEO. Although growth is holding up well in Central America and strengthening, on average, in the Caribbean, domestic demand continues to underperform in much of the rest of the region, and some idiosyncratic factors are playing a key role in shaping substantially different outlooks across countries.
  - In *Mexico*, growth is expected to soften to 2.1 percent in 2017 and 1.9 percent in 2018. Despite the uncertainty related to renegotiation of the North American Free Trade Agreement and a downward revision to economic activity in the United States, growth for 2017 has been revised upward by 0.4 percent since the April 2017 WEO, reflecting better-than-expected growth outturns for the first two quarters of the year and a recovery in financial market confidence. In the medium term, the assumed full implementation of the structural reform agenda is projected to lift growth to 2.7 percent.
  - After entering positive territory in the first half of 2017, growth in *Brazil* is expected to reach 0.7 percent for the year and 1.5 percent in 2018. A bumper crop and a boost to consumption, including from allowing workers to draw on savings accumulated in their severance accounts, led to an upward revision of half a percentage point in 2017 relative to the April forecast, but ongoing weakness in investment and an increase in polit-

ical and policy uncertainty led to a downward revision of the 2018 forecast of 0.2 percentage point. A gradual restoration of confidence—as key reforms to ensure fiscal sustainability are implemented over time—is projected to raise growth to 2 percent in the medium term.
  - In *Argentina*, growth is projected to rebound to 2.5 percent in 2017 from last year's recession as higher real wages boost consumption; investment picks up, supported by public works; and exports benefit from stronger external demand. Growth is expected to remain about 2½ percent in 2018, as private domestic demand continues to improve gradually against the backdrop of tight macroeconomic policy settings (high real interest rates required by the disinflation process and the start of the fiscal consolidation). The intensification of the political crisis in *Venezuela* weighs heavily on economic activity, which is expected to contract by more than 10 percent in 2017 as oil production declines and uncertainty rises further. In *Chile*, growth is projected to be 1.4 percent in 2017 amid weakness in private fixed investment, mining output, and public consumption, and to recover to 2.5 percent in 2018 amid growing confidence, higher copper prices, and interest rate cuts implemented over the past few months. In *Colombia*, growth is projected to be 1.7 percent in 2017, amid continued adjustment to lower revenues. Higher infrastructure spending, investment-friendly tax reform, and the boost in confidence from the peace agreement are expected to raise growth to about 3.5 percent in the medium term.
- The outlook for the *Commonwealth of Independent States* continues to improve, following a deep recession in 2015 and very shallow growth in 2016, with growth projected at 2.1 percent in 2017 and 2018—an upward revision of 0.4 percentage point for 2017 relative to the April 2017 WEO. After two years of recession, economic activity in *Russia* is projected to expand by 1.8 percent in 2017, helped by stabilizing oil prices, easing financial conditions, and improved confidence. Over the medium term, however, growth is expected to remain about 1.5 percent, constrained by moderate oil prices, adverse demographics, and other structural impediments. Among other oil exporters, growth in *Kazakhstan* is projected to rise to 3.3 percent in 2017 on the back of strong oil production.

- In *emerging and developing Europe*, short-term growth has been revised upward to 4.5 percent (from 3.0 percent in the April 2017 WEO). This change is driven to an important extent by the revision to *Turkey*'s growth in 2017 to 5.1 percent (2.5 percent in April), reflecting a stronger-than-expected outturn in the first quarter of the year, driven in part by a recovery in exports after several quarters of contraction and a more expansionary fiscal stance. The outlook was also revised up for *Poland* (to 3.8 percent in 2017 and 3.3 percent in 2018), reflecting better-than-expected growth in the first half of 2017 and the expected pickup in EU-funded projects.

- Economic growth in *sub-Saharan Africa* is projected to reach 2.6 percent in 2017 and 3.4 percent in 2018 (broadly in line with the April forecast), with sizable differences across countries. Downside risks have risen because of idiosyncratic factors in the region's largest economies and delays in implementing policy adjustments. Beyond the near term, growth is expected to rise gradually, but barely above population growth, as large consolidation needs weigh on public spending. *Nigeria* is expected to emerge from the 2016 recession caused by low oil prices and the disruption of oil production. Growth in 2017 is projected at 0.8 percent, owing to recovering oil production and ongoing strength in the agricultural sector. However, concerns about policy implementation, market segmentation in a foreign exchange market that remains dependent on central bank interventions (despite initial steps to liberalize the foreign exchange market), and banking-system fragilities are expected to weigh on activity in the medium term. In *South Africa*, growth is projected to remain subdued at 0.7 percent in 2017 and 1.1 percent in 2018, despite more favorable commodity export prices and strong agricultural production, as heightened political uncertainty saps consumer and business confidence. In *Angola*, growth in 2017 has been revised upward to 1.5 percent (1.3 percent in April) because a downward revision to oil production in 2016 has raised the extent of the expected rebound. The outlook for fuel-importing countries is generally brighter, with an aggregate growth rate of 3.9 percent in 2017, rising to 4.4 percent in 2018.

- In the *Middle East, North Africa, Afghanistan, and Pakistan*, growth is projected to slow significantly in 2017 to 2.6 percent (from 5.0 percent in 2016)

on the back of a slowdown in the *Islamic Republic of Iran's* economy after very fast growth in 2016 and cuts in oil production in oil exporters through March 2018 under the extended OPEC agreement. In 2018, growth is expected to increase to 3.5 percent, mostly reflecting stronger domestic demand in oil importers and a rebound of oil production in oil exporters. However, regional insecurity and geopolitical risks still weigh on the outlook. In *Saudi Arabia*, although non-oil growth is expected to strengthen somewhat this year, overall output is expected to be broadly flat as real oil GDP declines as a result of the commitments under the extended OPEC agreement. In 2018, growth is projected to increase to 1.1 percent, reflecting an increase in oil output associated with the expiration of the OPEC agreement. Economic prospects in *Pakistan* have improved, with growth expected to reach 5.3 percent in 2017 and 5.6 percent in 2018, benefiting from investment in the China-Pakistan Economic Corridor and strong private sector credit. In *Egypt*, growth was 4.1 percent in fiscal year 2017 according to preliminary estimates, and is forecast to reach 4.5 percent in 2018, supported by reforms aimed at correcting fiscal and external imbalances, restoring competitiveness, and creating jobs.

Inflation Outlook for 2017–18

Headline inflation rates are projected to increase in both advanced and emerging market and developing economies, though somewhat less briskly than anticipated in the April 2017 WEO, partly reflecting weaker-than-expected oil prices. In advanced economies, inflation is forecast to pick up from 0.8 percent in 2016 to 1.7 percent in 2017, reflecting the continued cyclical recovery in demand and the increase in commodity prices in the second half of 2016. Headline inflation is expected to stay at 1.7 percent in 2018 before converging to 2 percent over the medium term. Inflation in emerging market and developing economies (excluding Argentina and Venezuela) is projected to remain roughly stable in 2017 and 2018 (at 4.2 percent and 4.4 percent, respectively—close to the 2016 estimate of 4.3 percent).

- Because of weaker fuel prices and negative shocks linked to cell phone prices and prescription drugs, headline inflation in the United States is expected to increase by less than envisioned in the April 2017 WEO, though it will still increase signifi-

cantly. Consumer price inflation is projected to reach 2.1 percent in 2017 (2.7 percent in the April WEO), up from 1.3 percent in 2016. Core personal consumer expenditure inflation remains subdued and is projected to rise more slowly, slightly exceeding 2 percent in 2019 before returning to the medium-term objective of 2 percent targeted by the Federal Reserve.

- Inflation is also projected to pick up in the euro area, from 0.2 percent in 2016 to 1.5 percent this year, mostly reflecting higher energy prices and the ongoing cyclical recovery in demand. But underlying inflation remains stubbornly low and wage growth subdued amid still-high unemployment in some countries. Headline inflation is projected to converge to core inflation as energy price effects dissipate and gradually approach the European Central Bank's objective of below but close to 2 percent over the next few years, reaching 1.9 percent only in 2021. In the United Kingdom, the headline inflation rate is projected to peak at 2.6 percent this year, up from 0.7 percent in 2016, before gradually declining to the Bank of England's target of 2 percent as the temporary effect of the pound's depreciation wanes and inflation expectations remain well anchored.

- Headline inflation rates are expected to return to positive territory in all advanced economies that experienced deflation in 2016. In particular, headline inflation in Japan, after being slightly negative in 2016, is expected to increase to 0.4 percent in 2017 on the back of higher energy prices on a year-over-year basis and a narrowing output gap. But inflation rates are projected to remain below the Bank of Japan's target throughout the forecast horizon.

- The modest increase in inflation rates projected for emerging market and developing economies as a group conceals sizable cross-country differences. Headline inflation in China is expected to remain tame at 1.8 percent in 2017, reflecting weakening food prices in recent months, and to pick up gradually to 2.6 percent over the medium term. Inflation rates in Brazil and Russia are forecast to decline faster than projected in the April 2017 WEO, reflecting stronger effects from negative output gaps, currency appreciations, and favorable supply shocks to food prices. In Mexico, headline inflation is expected to rise to 5.9 percent this year because of the liberalization of domestic fuel prices and
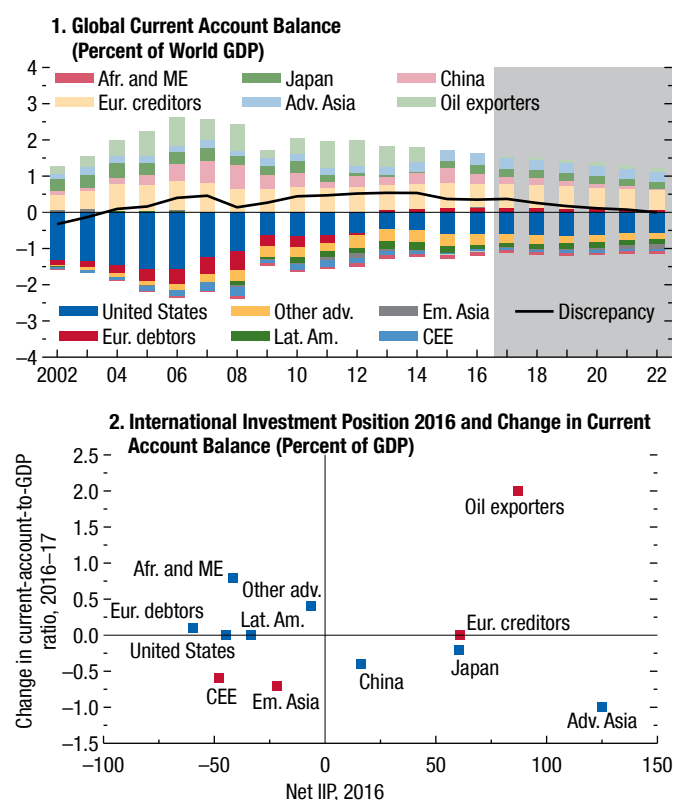
pass-through from the peso's depreciation through January 2017, and to fall within Banco de México's tolerance band of 2–4 percent in 2018. In Argentina, annual consumer price index inflation is projected to decline sharply during 2017 and 2018 as the impacts of the large exchange rate depreciation and tariff adjustment in 2016 fade, the central bank maintains a tight monetary policy stance, and wage negotiations become more forward looking. After rising to 6.3 percent in 2016, headline inflation in South Africa is forecast to decline to 5.4 percent in 2017, which is within the target band; slowing wage growth, a widening output gap, and the easing of drought conditions are expected to more than offset the effect of higher oil prices and an increase in excise taxes. The inflation rate in Turkey has spiked, following the lira's depreciation, and is expected to remain above the 5 percent target throughout the forecast horizon. Inflation in 2017–18 is expected to remain elevated at two-digit levels in Angola and Nigeria, reflecting the persistent effects of past inflationary shocks coming from sharp currency depreciations (including of the parallel exchange rate) as well as higher electricity and fuel prices and, in the case of Nigeria, reflecting the assumption that monetary policy will remain accommodative going forward.

External Sector Outlook

Global trade is estimated to have grown by 2.4 percent in 2016 in volume terms, the slowest pace since 2009, with weak growth in both advanced economies and emerging market and developing economies. In the former, weaker trade growth was related to an investment slowdown and inventory adjustment, especially during the first part of the year. In the latter, persistent weakness in trade growth was related to a protracted trade slowdown in China and a sharp import contraction in some commodity exporters facing macroeconomic strains, notably Latin America, sub-Saharan Africa, and the Commonwealth of Independent States. As discussed earlier, global trade growth picked up meaningfully in late 2016 and early 2017, reflecting a recovery in global demand and especially capital spending. Consequently, global trade growth is projected to rebound to about 4 percent in 2017 and into the medium term, about 1 percentage point higher than GDP growth at market exchange rates.

Figure 1.14. Global Current Account Balances

Global current account imbalances narrowed marginally in 2016 and are expected to further compress slightly in 2017.

1. Global Current Account Balance
(Percent of World GDP)

2. International Investment Position 2016 and Change in Current Account Balance (Percent of GDP)

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).

Global current account imbalances have been broadly unchanged since 2013, with a marginal narrowing in 2016 that is projected to continue in 2017 and the following few years (Figure 1.14, panel 1). Their composition has shifted, becoming more heavily concentrated in advanced economies. Among creditor countries, the current account balance is projected to show some improvement in oil-exporting countries, thanks to the increase in oil prices since their 2016 troughs, and to decline slightly

in China as imports recover. Among debtor countries, current account deficits are expected to moderate in countries in the "other advanced economies" group, including Australia and especially the United Kingdom.

Although there is no normative presumption that current account deficits and surpluses should be compressed, the IMF's 2017 *External Sector Report* highlights how in 2016 current account imbalances in some of the world's largest economies were too large in relation to country-specific norms consistent with underlying fundamentals and desirable policies. Current account balances are expected to move in a direction consistent with a narrowing of these excess imbalances, even under the assumption of constant real exchange rates underpinning the projections. The first panel of Figure 1.15 depicts on the horizontal axis the gap between the 2016 current account balance and its norm and, on the vertical axis, the projected change in the current account balance in 2017. The strong negative correlation (–0.6) implies that current account balances are expected to begin reducing gaps relative to the 2016 current account norm. The correlation is even stronger over a five-year horizon.
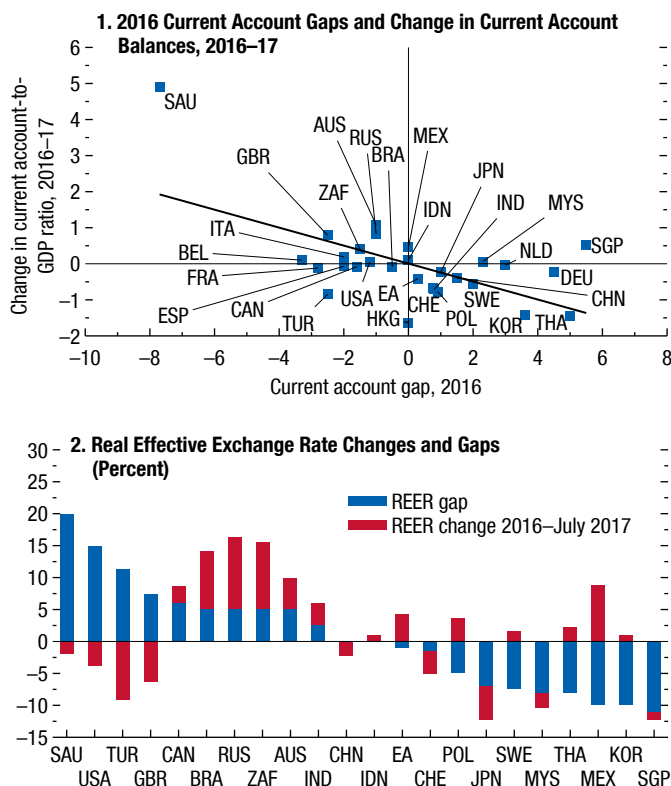
As panel 2 of Figure 1.15 illustrates, changes in real effective exchange rates between their 2016 average values and those in August 2017 are instead not systematically correlated with the exchange rate gaps for 2016 identified in the 2017 *External Sector Report*. One important factor reconciling these findings is the increase in commodity prices since their troughs in 2016, which has strengthened the real exchange rates of commodity exporters but is also expected to improve their current account balances.

Despite the minor narrowing of flow imbalances, creditor and debtor positions widened in 2016 and are projected to continue widening into the medium term relative to world GDP (Figure 1.16, panel 1). On the debtor side, the increase is explained entirely by an increase in net external liabilities in the United States, where the current account deficit is projected to remain about 2.5 percent of GDP over the next few years. In contrast, net external liabilities are projected to shrink further in euro area debtor countries. Among creditor countries, the increase in net external claims primarily reflects the projected continuation of large current account surpluses in European creditor countries (such as Germany, the Netherlands, and Switzerland) and advanced Asian economies.

Panel 2 of Figure 1.16 shows how creditor and debtor positions as a share of domestic GDP are projected to evolve over the next five years. It highlights further

Figure 1.15. Real Exchange Rates and Current Account Balances in Relation to Economic Fundamentals

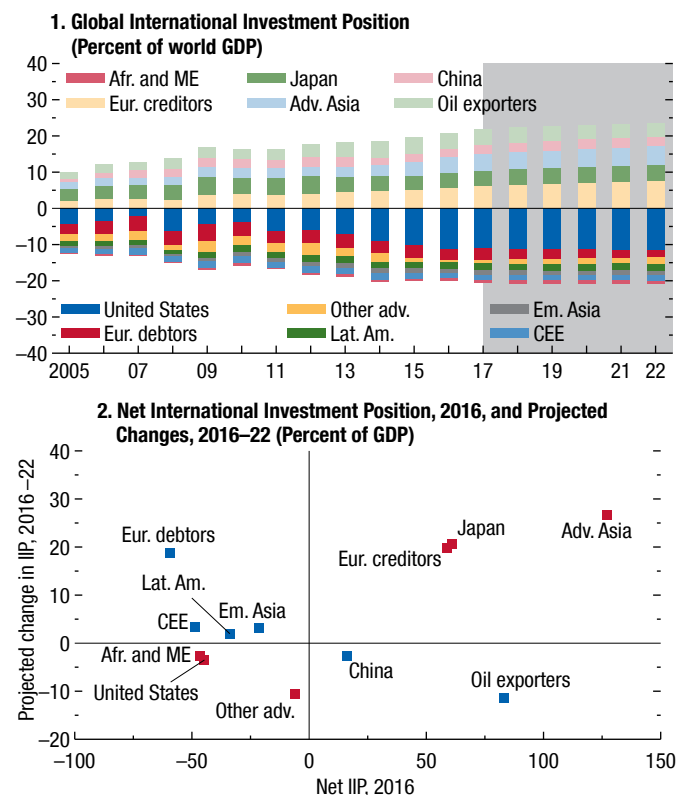Current account balances are expected to narrow their gaps relative to the 2016 current account norm.

1. 2016 Current Account Gaps and Change in Current Account Balances, 2016–17

2. Real Effective Exchange Rate Changes and Gaps (Percent)

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

Figure 1.16. Net International Investment Positions

Creditor and debtor international investment positions widened in 2016 and are projected to continue widening into the medium term.

1. Global International Investment Position (Percent of world GDP)

2. Net International Investment Position, 2016, and Projected Changes, 2016–22 (Percent of GDP)

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).

growth in creditor positions among European creditor countries and advanced economies in Asia in the range of 20–25 percentage points of GDP; among debtor countries the largest reduction in net liabilities (close to 20 percentage points of GDP) is projected for euro area debtor countries. A few debtor countries or country groups are projected to see a modest deterioration in their net international investment position, with the US net external position worsening by about 3.5 percentage points of GDP. It is important to note that future exchange rate changes will affect the evolution of these positions, not only through their effect on the current account balance, but also through valuation effects.[5] Most countries,

[5]For instance, valuation changes in 2016 were notable in the United Kingdom, where depreciation of the pound turned the country into a net creditor as of 2016 by boosting the domestic-currency value of foreign-currency assets. The depreciation of the US dollar so

especially advanced economies, are net creditors in foreign currency and net borrowers in domestic currency; consequently, an exchange rate depreciation implies improvement in the net external position through an increase in the domestic-currency value of net foreign-currency assets, with an appreciation having the opposite effect.

far in 2017, if not reversed, would similarly contribute to reducing the United States' net external liability position.

The shifting constellation of global macroeconomic policies and associated exchange rate movements could lead flow imbalances to widen again, further expanding stock imbalances. In the future, stronger reliance on domestic demand growth in some creditor countries, especially those with the policy space to support it, would help facilitate domestic and global rebalancing while sustaining world growth. In the United States, which already has close to full employment, fiscal policy measures designed to gradually enhance productive capacity along with demand, anchored in a medium-term fiscal consolidation plan to reverse the rising ratio of public debt to GDP, would result in more sustained growth and help contain external imbalances.

Risks

More Balanced, but Still to the Downside in the Medium Term

In the near term, risks to the global growth forecast appear two-sided and broadly balanced. On the upside, momentum could prove to be more durable than expected amid strong consumer and business confidence, for instance, in the euro area and in East Asia, and near-term growth could exceed the forecast. On the downside, policy uncertainty is more of a concern than usual, reflecting, for example, difficult-to-predict US regulatory and fiscal policies, the potential adoption of trade restrictions, negotiation of the United Kingdom's relationship with the EU post-Brexit, and geopolitical risks. A perceived likelihood of more inward-looking policies could trigger a correction in asset valuations and an increase in financial market volatility from its current very low levels. In turn, a correction in asset valuations and higher financial market volatility could knock down spending and confidence more generally, especially in countries with financial vulnerabilities. Finally, Hurricane Harvey creates uncertainties for the US economy in the near term; the net effect on GDP will depend on how quickly economic activity in the affected region recovers (including port activity and operations reliant on oil and gas infrastructure) and then, on the upside, how large and fast the rebuilding effort will be.

Beyond the immediate term, risks are skewed to the downside and stem from a host of financial tensions, a possible inward-looking policy shift and persistently low inflation in advanced economies, and a range of noneconomic factors.

Financial Tensions

Financial stability risks in China: The revised growth forecast for China embeds slower rebalancing of activity toward services and consumption, a higher debt trajectory, and diminished fiscal space available to respond in case of an abrupt adjustment. Unless the Chinese authorities counter the associated risks by accelerating their recent encouraging efforts to curb the expansion of credit, these factors imply a heightened probability of a sharp slowdown in China's growth. Such an adjustment could be triggered, for instance, by a funding shock (in the short-term interbank market or in the funding market for wealth-management products), the imposition of trade barriers by trading partners, or a return of capital outflow pressures because of a faster-than-expected normalization of US interest rates. A growth slowdown in China would have adverse repercussions for other economies through weaker trade, commodity prices, and confidence.

Tightening of global financial conditions: Continued easy monetary conditions in advanced economies can seed excesses and leave the financial system (and the economic recovery) vulnerable to an abrupt decompression of risk premiums. Chapter 1 of the October 2017 GFSR presents a downside scenario in which these risks materialize, entailing a sizable output cost. An eventual repricing of risk could be triggered by a multitude of shocks, including faster-than-expected normalization of US monetary policy or a rise in global risk aversion. As discussed in the October 2017 GFSR, the search for yield amid historically low interest rates has pushed investors to move beyond their traditional risk mandates and is already causing a buildup of credit and liquidity risks and increased vulnerability to market risks in some countries and market segments. For instance, in the United States, credit risks are rising, as suggested by rising leverage in parts of the non-energy corporate sector and evidence of an erosion of underwriting standards in the corporate bond market. Even as the strength and health of banking systems continue to improve, policies still have a vital role to play in managing risks in the non-bank financial sector.

Risks of capital flow reversals: Corporate leverage has increased substantially in several emerging market economies (in addition to China) since the global financial crisis, with high levels of foreign currency–denominated corporate debt issuance. As discussed in the April 2017 GFSR, corporate leverage has started to

decline from peak levels in some economies, reflecting, in part, a downturn in capital expenditure in extractive industries. Against this backdrop, net financial flows to emerging market and developing economies have picked up over the past year, as the current account balances of commodity exporters have shrunk and global risk appetite has recovered. Following a period of abundant credit supply, a sudden tightening of global financial conditions could expose financial fragilities, especially where buffers may be wearing thin after a period of macroeconomic strains and financial volatility. For instance, faster-than-expected monetary policy normalization in the United States could cause reversals in capital flows to emerging markets and an appreciation of the US dollar, imposing strains on economies with high leverage, balance sheet mismatches, or exchange rates pegged to the US dollar. At the same time, to the extent that such monetary policy tightening reflects a stronger outlook for the US economy, US trading partners would benefit from positive demand spillovers.

Challenges facing euro area banks: The euro area banking sector has made further progress with balance sheet cleanup since the spring, and bank credit growth to the nonfinancial private sector has been positive since mid-2015 (though below GDP growth). Nonetheless, nonperforming loan (NPL) ratios were still high in the first quarter of 2017, at about 5.7 percent for the euro area, and greater than 10 percent in six countries (including Italy, which accounts for about 30 percent of the euro area's NPL stock). Profitability also remains a challenge, with stubbornly high cost-to-asset ratios, especially for medium- and small-size banks. As discussed in Chapter 1 of the October 2017 GFSR, about one-third of global systemically important banks (mostly European banks) are not expected by analysts to generate sustainable returns, even by 2019. Low earnings hinder banks' ability to build cushions against unexpected losses and to raise capital in markets. Without a more concerted effort to clean up balance sheets and improve banks' cost efficiency, financial stability concerns and fears of adverse feedback loops among weak demand, prices, and balance sheets could be reignited in parts of the euro area. If political risks were to reemerge, for instance, an accompanying rise in long-term interest rates would worsen public debt dynamics, especially if inflation were to remain weak.

Financial deregulation: As discussed in Box 1.2 of the April 2017 GFSR, a broad rollback of the strength-ening of financial regulation and oversight achieved since the global financial crisis—both nationally and internationally—could lower capital and liquidity buffers or weaken supervisory effectiveness, with negative repercussions for global financial stability.

A Retreat from Cross-Border Economic Integration

Slow growth in median incomes since the global financial crisis and a longer-term trend of worsening income distributions have contributed to disillusionment with globalization in advanced economies—notably in the United States and parts of Europe. Over the longer term, a failure to lift potential growth and make growth more inclusive in advanced economies could exacerbate the risk of a retreat from cross-border integration and hinder the political consensus for necessary market-friendly reforms. Greater protectionism could disrupt global supply chains (Yi 2003; Bems, Johnson, and Yi 2010; Koopman, Wang, and Wei 2014), reduce global productivity, and make tradable consumer goods less affordable, harming low-income households disproportionately (Fajgelbaum and Khandelwal 2016). Similarly, indiscriminate curbs on immigration would hinder a channel for alleviating labor force constraints in aging societies and reduce opportunities for skills specialization and productivity growth over the long term.[6]

### Persistently Low Inflation in Advanced Economies

In many advanced economies, steady progress toward central bank inflation targets has been elusive, reflecting in part the slow reduction of spare capacity in labor markets. An environment of persistently subdued inflation (which could ensue if domestic demand were to falter) can carry significant risks by leading to a belief that central banks are willing to accept below-target inflation, thereby reducing medium-term inflation expectations.[7] Low inflation and interest rates would reduce central banks' capacity to lower real interest rates to restore full employment in an economic downturn. Real wages would also be less flexible, and when demand falters, firms would be more likely to resort to laying off workers to reduce costs, amplifying the recessionary impulse. In sum, prolonged below-target inflation deepens the

---

[6]Chapter 4 of the October 2016 WEO analyzes the impact of immigration flows on productivity growth in recipient countries.

[7]Chapter 3 of the October 2016 WEO provides a fuller discussion.

Figure 1.17. Geopolitical Risk Index
(Index)

Geopolitical risks have risen in recent months.
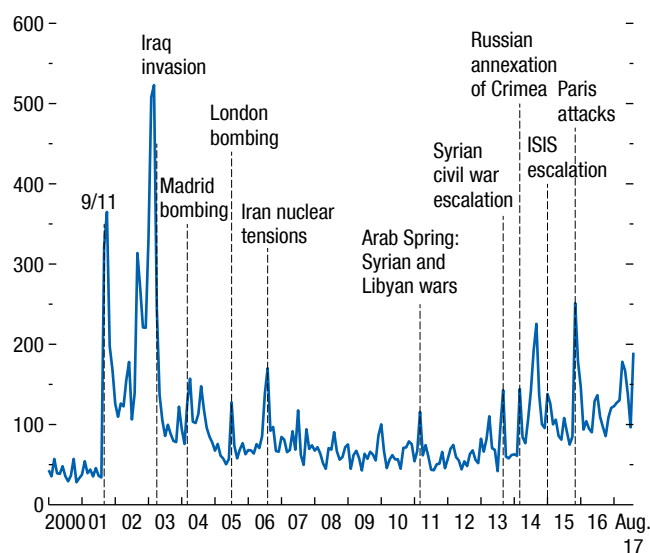
Source: Caldara and Iacoviello (2017).
Note: ISIS = Islamic State.

downside risks to advanced economies' medium-term growth prospects.

Noneconomic Factors

Rising geopolitical tensions and domestic political discord can hurt global market sentiment and confidence, burdening economic activity. For many countries severely affected by such factors, the baseline scenario assumes a gradual easing of tensions. However, these episodes may turn out to be more protracted, delaying recovery in these economies. Measures of geopolitical risk have risen in recent months (Figure 1.17), and recent research shows that higher geopolitical tensions can weigh on global activity.[8]

Weak governance and large-scale corruption can also undermine confidence and popular support, taking a heavy toll on domestic activity. Other noneconomic factors weighing on growth in certain regions include the damaging effect of weather-related disasters, including the persistent effects of drought in eastern

[8]Caldara and Iacoviello (2017) construct an index of geopolitical risk and document how increases in the index have historically been associated with negative effects on a broad set of economic activity indicators.

and southern Africa. If these factors intensify, the hardship in directly affected countries, especially smaller developing economies, would rise commensurately.

The risks discussed above are interdependent and can be mutually reinforcing. For example, a shift toward inward-looking policy approaches to cross-border trade, investment, and migration can increase geopolitical tensions and global risk aversion. In addition, noneconomic shocks can weigh directly on near-term economic activity and hurt longer-term confidence and market sentiment. Also, faster-than-anticipated tightening of global financial conditions or a shift toward protectionism in advanced economies could create capital outflow pressures from emerging markets.

Fan Chart

A fan chart analysis—based on equity and commodity market data as well as the dispersion of inflation and term spread projections of private sector forecasters—yields a balance of risks that remains slightly tilted to the downside for 2017 and 2018 (Figure 1.18). Despite the broadly unchanged balance of risks around the global growth forecast, the contributions of selected risk factors have changed. Relative to the estimates made in October 2016, the distribution of term premiums forecasts and the prices of S&P 500 Index options now imply more upside risk to growth in 2017 and less upside risk to growth in 2018, likely reflecting less upbeat views for US fiscal stimulus over the medium term and optimistic valuations in the US stock market—both of which leave less room for upward surprises. At the same time, the distribution of inflation forecasts and oil price options imply somewhat more downside risk than a year ago, suggesting that analysts see greater scope for inflation and oil prices to surprise on the upside and dampen growth (an upward surprise in inflation could lead central banks to tighten monetary policy earlier than markets currently predict, while higher-than-expected oil prices would subtract from consumer disposable income).

The probability of a recession over a four-quarter horizon has declined relative to the probability computed in March 2017 in the euro area, Japan, and the Latin America 5 group (Brazil, Chile, Colombia, Mexico, and Peru), consistent with higher projected growth rates. Recession probabilities are broadly unchanged for the United States and other regions (Figure 1.19). Deflation risks—as measured by the esti-

mated probability of a decline in the price level four quarters ahead—have declined for the euro area and Japan, reflecting stronger projected growth in domestic demand. Deflation probabilities have increased slightly from low levels in the East Asia region, where inflation has softened in several economies in recent months, and for the Latin America 5 group, where inflation is projected to decline further over the coming year (as pass-through from earlier currency depreciations fade and negative output gaps continue to exert downward pressure on inflation in some economies).

Policy Priorities

The main cross-cutting policy challenges are to boost potential output and ensure that its benefits are broadly shared, and to build resilience against downside risks. With countries now facing divergent cyclical conditions, varied monetary and fiscal policy stances remain appropriate—and completing the economic recovery and adopting strategies to ensure fiscal sustainability are still imperatives for many economies.

The urgency for structural reform is particularly high in advanced economies, where crisis legacies, demographic shifts, and continued weak productivity trends are restraining potential growth; but also in many emerging market and developing economies, many of which need to activate new sources of growth.

The cyclical upswing opens an ideal window of opportunity for making progress with reforms, especially those that have more powerful economic benefits when implemented in times of strong demand (such as reforms to job protection and unemployment benefits, as discussed in Chapter 2 of the April 2016 WEO). By the same token, where aggregate demand is still weak, macroeconomic policy needs to be supportive to foster reform implementation.

By acting together, policymakers could amplify the beneficial effects of reforms and help reduce downside risks to the outlook. The model simulations in Scenario Box 1 show that the IMF's macroeconomic policy advice for the Group of Twenty economies (in addition to what is already assumed in the WEO baseline) would have key global benefits, especially if implemented at the same time. The policy stimulus in countries with fiscal space would strengthen external demand for countries needing fiscal consolidation, buffering the near-term drag on activity; in advanced economies, tightening policy, the net effect on output of spillovers from abroad and domestic policy tight-

Figure 1.18. Risks to the Global Outlook

The balance of risks implied by the fan chart analysis is slightly tilted to the downside in 2017 and 2018.
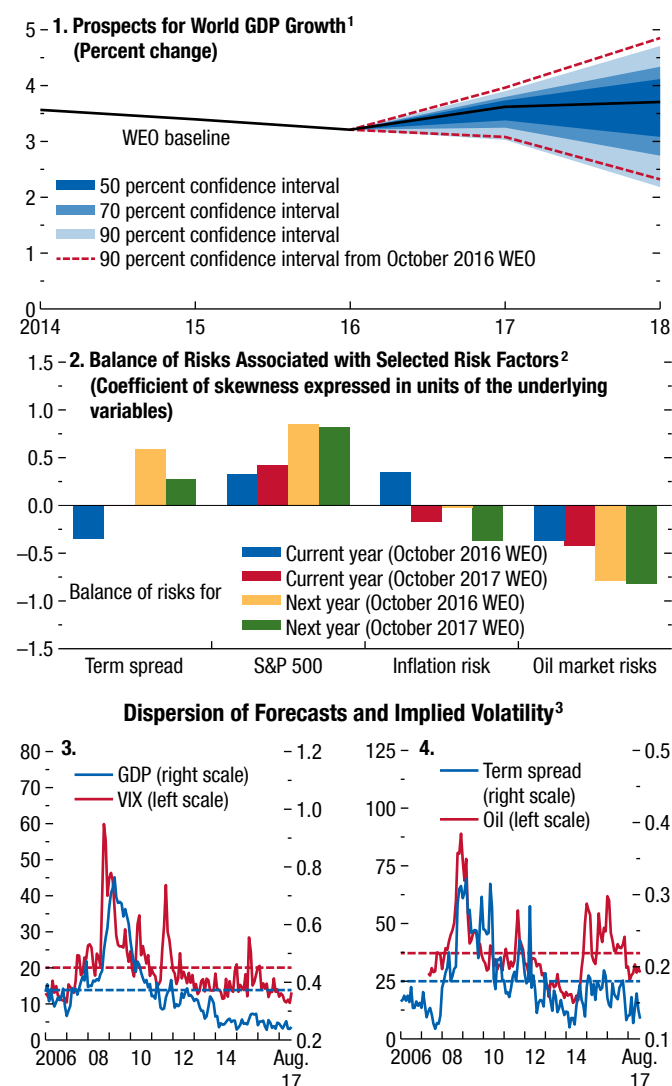
Sources: Bloomberg L.P.; Chicago Board Options Exchange (CBOE); Consensus Economics; Haver Analytics; and IMF staff estimates.
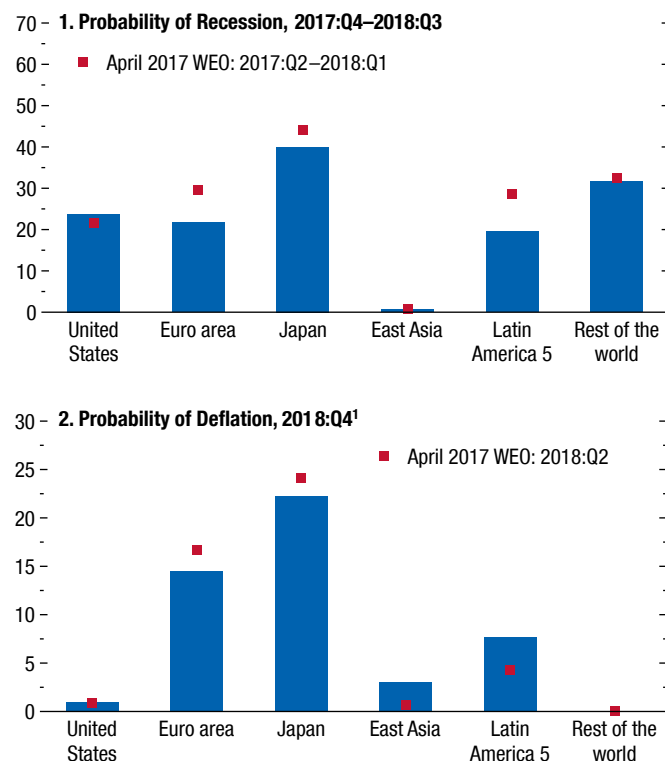[1]The fan chart shows the uncertainty around the October 2017 *World Economic Outlook* (WEO) central forecast with 50, 70, and 90 percent confidence intervals. As shown, the 70 percent confidence interval includes the 50 percent interval, and the 90 percent confidence interval includes the 50 and 70 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 October 2016 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.

Figure 1.19. Recession and Deflation Risks
(Percent)

Relative to the spring, recession probabilities have declined for the euro area, Japan, and the Latin America 5 group and are broadly unchanged for the United States and other regions. Deflation risks have declined for Japan and the euro area.

1. Probability of Recession, 2017:Q4–2018:Q3

■ April 2017 WEO: 2017:Q2–2018:Q1

2. Probability of Deflation, 2018:Q4[1]

■ April 2017 WEO: 2018:Q2

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. April 2017 WEO data refer to simulations run in March 2017. WEO = *World Economic Outlook*.
[1]Deflation is defined as a fall in the price level on a year-over-year basis in the quarter indicated in the figure.

ening would be positive. Overall, implementing the recommended policies would increase global fiscal sustainability and lead to permanently higher private investment and potential output. The boost to global demand would also magnify the effects of structural reforms on potential output.[9] Beyond these quantifiable macroeconomic benefits, the recommended policy measures would also help reduce downside risks to the global growth outlook.

[9]Based on IMF (2017d), which presents results for a similar scenario incorporating, in addition, the impact of structural reforms.

Policies—Advanced Economies

Although cyclical positions across advanced economies are varied, most of the larger economies are still estimated to be operating somewhat below potential and are experiencing inflation rates below central bank targets (Figure 1.20). Potential growth faces headwinds from population aging and a widespread slowdown in productivity growth.

Although income distribution has remained broadly stable in most advanced economies in recent years, ongoing advances in labor-saving technologies and cross-border competition—important drivers of higher income inequality during the past few decades—suggest that inclusiveness cannot be taken for granted. Deliberate policy efforts are needed in many countries to ensure that most people see their living standards improve as national income increases.

Safeguarding the Momentum and Addressing the Remaining Crisis Legacies

With a lack of steady progress toward bringing inflation closer to target and stabilizing long-term inflation expectations around those levels, monetary policy in advanced economies should chart an accommodative course. Although wage and price pressures are likely to pick up once the recovery firms further, a tendency for core inflation to repeatedly fall short of expectations calls for a cautious risk-management approach to reducing accommodation or progressing with normalization. A generalized perception that central banks will let inflation run below target for a prolonged period could lead to a downshift of long-term inflation expectations, which, in an environment of low equilibrium real interest rates, would be costlier and more difficult to reverse than a temporary overshoot in inflation.

The US Federal Reserve should stay on a data-dependent, well-communicated, and gradual path to normalization. The Bank of Japan should maintain a sustained accommodative stance, including its target for long-term interest rates. And the European Central Bank should wait for concrete evidence of a steady pickup in inflation before reducing the extent of accommodation. At the same time, stretched asset valuations and increasing leverage in some financial market segments bear close monitoring, and proactive micro- and macroprudential supervision, where necessary, remains important to ensure that appropriately easy monetary conditions do not fuel financial stability risks.

Fiscal policy should, in principle, also be calibrated with cyclical conditions but, in many advanced economies with remaining slack, it is constrained by the need to avoid potentially destabilizing public debt dynamics or to rebuild buffers. Given the need to secure the recovery and bolster inclusiveness, the composition of spending and revenues and any consolidation measures should be made as growth- and distribution-friendly as possible.

In the United States, where output is approaching potential, the consolidation should start in 2018. And in the short term, avoiding political brinkmanship over appropriations and promptly raising the debt ceiling are essential. In the euro area, countries with very low deficits and relatively low debt should use fiscal space to support structural reforms and boost public investment to raise potential growth. For instance, a more expansionary stance in Germany, where tax buoyancy amid an economic recovery is adding to fiscal space, would permit a much-needed increase in public investment while generating positive spillovers to countries with deficient demand. Avoiding a re-emergence of fiscal surpluses would also help correct the external imbalances of Germany. Indeed, as Chapter 4 emphasizes, higher public spending designed to boost potential output can have both domestic benefits as well as positive spillovers to other economies, especially those with economic slack and monetary accommodation. By contrast, gradual fiscal adjustment accompanied by growth-friendly measures is appropriate for Italy and France. In view of remaining economic slack and exceptionally weak core inflation, Japan should withdraw fiscal support very gradually, including through a gradual increase in the consumption tax rate over several years to bring the primary balance to a debt-stabilizing level, while prioritizing demand-friendly structural reforms. In the United Kingdom, where uncertainty about the outcome of negotiations with the EU weighs on sentiment and investment, a gradual consolidation path remains appropriate.

Strengthening resilience and securing the recovery in the euro area will also require accelerating the repair of bank balance sheets and durably improving banking system profitability. Only a comprehensive and proactive approach to reducing NPLs can lift the drag on credit growth and eliminate risks of an adverse feedback mechanism among weak inflation, balance sheets, investment, and productivity. Measures to accelerate the reduction of NPLs can include broadening European Central Bank guidance on NPL

Figure 1.20. Advanced Economy Output Gaps, 2017
(Percent of potential GDP)
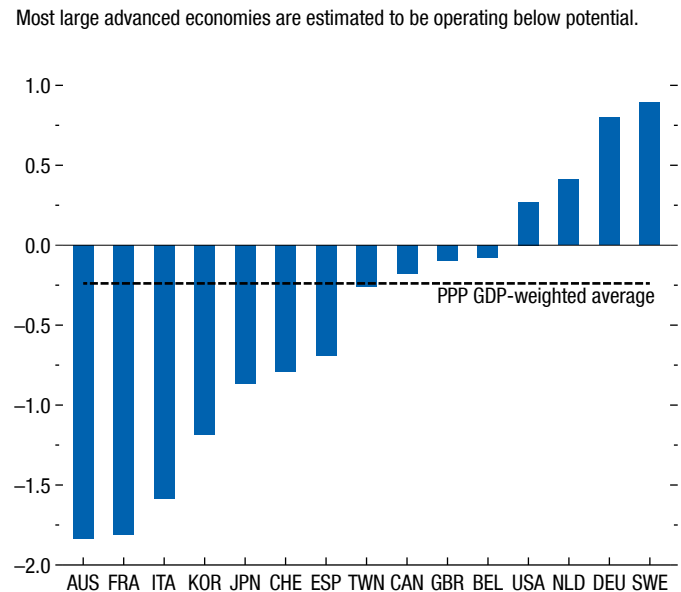
Most large advanced economies are estimated to be operating below potential.

Source: IMF staff estimates.
Note: Data labels in the figure use International Organization for Standardization (ISO) country codes. PPP = purchasing power parity.

management to smaller banks, faster modernization and harmonization of insolvency regimes, and stimulating distressed debt markets by facilitating national asset-management firms. To raise bank profitability sustainably, further business-model upgrading, cost rationalization, and consolidation remain critical; a proactive approach to bank resolution could help provide incentives for action in these areas. Faster progress is also needed for completing the Banking Union (with a common, effective deposit insurance scheme and common fiscal backstop) and advancing the Capital Markets Union plan.

Bolstering Medium-Term Potential Output and Inclusiveness

A cyclical upswing provides a golden opportunity for adopting structural reforms and will amplify and accelerate their beneficial effects. Policymakers can safeguard and improve prospects for potential output through measures to expand labor supply and create an environment conducive to stronger productivity growth. Many of these reforms would also help raise the inclusiveness of income gains, and some would broaden economic opportunities across the skills spectrum. Reform priorities vary across countries, depend-

ing on the key impediments to potential output, but generally fall into the following areas:

- *Distribution-friendly fiscal policies*: As discussed in depth in the October 2017 *Fiscal Monitor*, governments seeking to improve equity in incomes and opportunities can rely on fiscal policy as a powerful redistributive tool. For many advanced economies with high public debt, limited fiscal space, and high tax and spending levels, fiscal and redistributive objectives should be achieved through revenue-neutral increases in tax progressivity, spending reallocations, and improved spending efficiency. In advanced economies where tax progressivity has declined in the past few decades, raising the top marginal tax rates and reducing opportunities for tax avoidance and evasion, especially for high-income earners, could improve the distribution of income. Many advanced economies also have room to significantly increase the taxation of immobile capital and wealth.

- *Investment in human capital*: Ensuring broad-based access to high-quality education promotes productivity and a more equitable distribution of income over the long term. It also raises the adaptability of the workforce to structural transformation, including a persistent shift in work and employment relations (with a greater incidence of part-time work in many advanced economies and a greater share of workers on temporary contracts), as highlighted in Chapter 2. Short-term measures to help households through economic downturns or technology- and trade-related displacement include active labor market policies (that help workers find jobs in expanding sectors) and social safety nets (to smooth the effects of temporary income loss and keep workers attached to the labor force). In the longer term, attaining inclusive and sustainable growth amid continued structural change will require adequate education, skills building and retraining, and policies (such as credit access) to facilitate geographic mobility. In the United States, policy priorities include supporting early childhood education and science, technology, engineering, and mathematics programs, and rethinking the financing model for public schools and funding for tertiary education to improve outcomes for youth from lower- and middle-income households. Apprenticeship and vocational programs have worked well in some countries to offer attractive careers (for example, in Germany) and can be upgraded in many countries, for instance, in France and the United States.

- *Investment in physical infrastructure*: Empirical evidence from advanced economies suggests that, if done right, infrastructure investment brings both short- and long-term benefits: an increase in public investment of 1 percent of GDP can raise the level of output by 1½ percent over the medium term (Abiad, Furceri, and Topalova 2016). After three decades of almost continuous decline, public investment in infrastructure and the stock of public capital as a share of output are near historic lows in advanced economies. Many countries could take advantage of the favorable funding environment to improve the quality of the existing infrastructure stock and implement new projects (see Chapter 3 of the October 2014 WEO). Countries with deficits in infrastructure include Australia, Canada, Germany, the United Kingdom, and the United States. Priorities vary but, in most cases, include upgrading surface transportation and improving infrastructure technologies (in high-speed rail, ports, telecommunications, broadband), as well as green investments.

- *Fostering greater labor supply*: Population aging will exert downward pressure on labor force participation rates in most advanced economies in the coming years, with growth in the workforce projected to decline from about 0.8 percent a year in 1995–2015 to about half that rate by 2022 (based on October 2017 WEO forecasts). To counter this decline, policymakers could raise the statutory retirement age (where doing so would help close funding gaps in pension systems) and take measures to accelerate the narrowing of gender gaps in labor force participation. Gender gaps could be narrowed by eliminating tax provisions that discourage second earners in households (Italy, Japan, United States), ensuring the availability of affordable child care (Canada, Germany, Italy, Japan, United Kingdom, United States), fostering flexible work arrangements (Canada, Japan), and offering family-friendly benefits such as parental leave (Canada, United States). In aging societies, ensuring the affordability of elderly care is also crucial, given that, if care is too expensive, it would typically be the secondary earners in households—typically women—who shoulder the burden of unpaid work at home. Immigration reform could also help expand the labor force, limit the increase in dependency ratios, and raise productivity and labor force growth in some countries (through, for example, skills-based immigration reform in the United States, continued targeted

immigration policy in Canada, and allowing more use of foreign workers in Japan). In Europe, integration of refugees into the workforce should be facilitated through swift processing of asylum applications, language training, job search assistance, better recognition of migrants' skills through credential systems, and support for entrepreneurship.

- *Product and labor market reforms*: Persistently sluggish productivity in some countries has led to greater emphasis on product and labor market reforms, especially given the scarcity of fiscal space. These reforms have been found to raise productivity and employment and to improve resilience to shocks.[10] Priorities include lower barriers to entry into professional services, certain network industries, or retail trade (for example, Australia, Greece, Italy, Japan, Spain); employment protection legislation reforms to reduce labor market duality, such as easing hiring and dismissal regulations for regular workers (for example, France, Portugal, Spain); reform of unemployment insurance and strengthening of active labor market policies and professional training and apprenticeship systems (for example, France); cutting of labor tax wedges (France, Germany, Italy); and reform of wage bargaining frameworks to ease the realignment of wages with productivity (Italy, France). Some countries also have scope to improve the business climate and the quality of public administration (Italy, Portugal). At a central level, the EU has room to provide better incentives for reforms at the national level with targeted funds from the EU budget and outcome-based benchmarking of reforms. Efforts to deepen single market integration—especially in the digital services, transport, and energy sectors—would also help raise productivity in EU members.

Policies—Emerging Market Economies

A critical challenge facing many emerging market economies is to preserve and extend the improvements in living standards achieved in recent decades. Priorities vary greatly, reflecting heterogeneity in cyclical positions and in the main impediments or risks to attaining strong medium-term growth.

Navigating Cyclical Conditions

Cyclical conditions are even more diverse in emerging market and developing economies than in

[10]A review can be found in Banerji and others (2017).

Figure 1.21. Emerging Market and Developing Economy Output Gaps, 2017
(Percent of potential GDP)

Cyclical conditions are diverse in emerging market and developing economies.
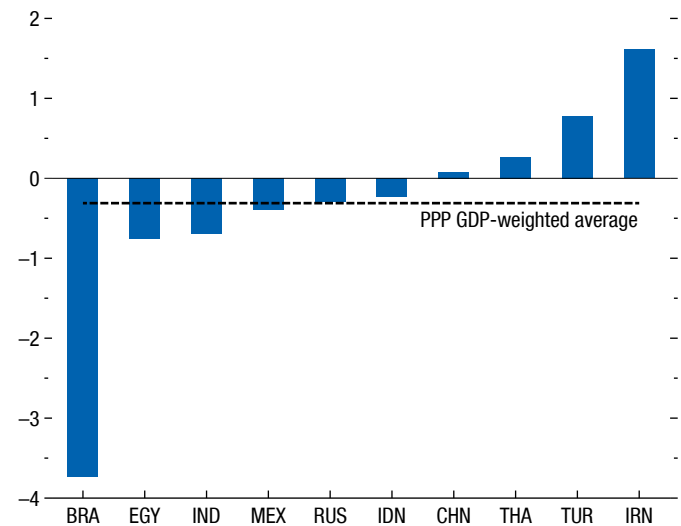
Source: IMF staff estimates.
Note: Data labels in the figure use International Organization for Standardization (ISO) country codes. PPP = purchasing power parity.

advanced economies, but output gaps are estimated to be negative in most of the larger countries in the group (Figure 1.21). The scope for easing fiscal policy to support economic activity is constrained, however, given that most countries have limited fiscal buffers and need to return their public finances to a sustainable footing. In several cases, the limited fiscal space reflects the incomplete withdrawal of the stimulus injected during the global recession, or a continued loosening in fiscal policy in recent years.

In Brazil, tackling the unsustainable expenditure mandates, including through reform of the pension system, is of first-order importance for restoring stronger confidence and fostering sustained growth in private investment. Should the economy recover faster than expected, a more front-loaded fiscal adjustment than envisaged in the budget would be warranted.

Mexico's gradual fiscal consolidation strategy remains appropriate, given the resilience of the economy and the desirability of setting public debt on a downward slope. Meanwhile, with its economy emerging from recession after an adjustment period, Argentina should accelerate its fiscal consolidation in 2018.

In China, the composition of fiscal policy should favor the rebalancing of the economy, and the augmented deficit should be gradually lowered to a debt-stabilizing level. The pace of deficit reduction planned in Russia would appropriately entail a steady adjustment to lower oil prices, but should be built on more permanent and better-targeted measures than currently envisaged.

In Saudi Arabia, a gradual but sustained fiscal consolidation to eliminate the budget deficit over several years would strike the right balance between safeguarding activity and preserving fiscal buffers.

As currencies have stabilized or gained against the US dollar since the spring, inflation has continued to decline in many emerging market economies, more recently helped by the decline in oil prices. Disinflation has been more rapid than expected in some countries, such as Brazil, India, and Russia, which has allowed monetary policy easing in recent months. Monetary policy will need to stay tight in countries where inflation rates remain well above central bank targets, such as in Argentina and Turkey. In China, where monetary accommodation should be gradually reduced, the monetary policy framework could be made more effective by phasing out monetary targets, resuming progress toward a more flexible exchange rate, and improving communications.

Exchange rate flexibility has served many emerging market and developing economies well in recent years. It has helped support capital inflows where domestic and external financial conditions have tightened, and helped safeguard growth and limit the drawdown of fiscal and reserve buffers following terms-of-trade declines in commodity exporters. Wherever possible, exchange rates should be used as the main buffer against external shocks.

Strengthening financial resilience is an overarching priority for emerging market and developing economies. In China, minimizing the risk of a sharp economic slowdown will require intensification of the authorities' current efforts to tighten supervision, rein in the expansion of credit, and tackle the underlying stock of bad assets.

Many other emerging market and developing economies with open capital accounts need to be mindful of a possible buildup of financial stability risks in an environment of easy global monetary conditions, and be aware of the risks from volatility as the US Federal Reserve gradually withdraws stimulus. Net capital inflow pressures for emerging market economies are likely to persist so long as monetary policy settings remain broadly accommodative and equilibrium real interest rates remain low in advanced economies. Countries receiving buoyant capital inflows may need to step up efforts in financial sector supervision and regulation to manage vulnerabilities, deter excessive borrowing, and help ensure that financing flows to projects that contribute to raising aggregate productivity.

Where an important share of external borrowing is undertaken directly by the corporate sector, curtailing any tax preferences for debt (over equity finance) could help keep the risk of overborrowing in check. Ensuring efficient corporate insolvency and restructuring frameworks would also help achieve faster and less costly resolution of problems should repayment difficulties arise as global financing conditions gradually become less accommodative.

Bolstering Medium-Term Potential Output and Inclusiveness

Safeguarding and furthering past gains in per capita incomes and living standards is imperative across emerging market and developing economies in light of the sizable development needs of most countries. Some countries that are projected to maintain strong growth rates in the baseline forecast will need to keep the main downside risks in check (for instance, in China, where it would be advisable to deemphasize near-term growth targets and focus on reforms that would enhance the sustainability of growth). Countries with modest medium-term growth prospects will urgently need to tackle the most binding structural impediments to growth. Priorities vary, but, in many countries, include improving the quality of infrastructure and education, strengthening governance, enhancing the business climate, and facilitating greater female labor market participation, as well as a host of product and labor market reforms and further trade integration.

- *Inclusiveness*: As discussed in the *Fiscal Monitor*, emerging market and developing economies generally have higher levels of inequality than advanced economies but, in many cases, their lower administrative capacity and limited fiscal space restrict the fiscal tools available for redistribution. For countries with low administrative capacity and larger informal sectors, setting a relatively high tax-exempt threshold for the personal income tax and gradually decreasing it as administrative capacity improves would help increase compliance as well as progressivity over time. Reducing opportunities for tax avoidance and evasion, especially

for high-income earners, is also important. Indirect taxation (such as a value-added tax or a consumption tax) has still the potential to be progressive, if revenues are used to finance progressive spending and if complemented by excise taxes on luxury goods. Improving access to quality education and health care for the disadvantaged is also crucial for improving equity. In education, efforts should be focused on eliminating enrollment gaps in primary and secondary education, especially for the disadvantaged, and expanding the role of private financing and student loans for higher education. In the area of health care, the priority is to achieve universal health coverage with a broad package of essential health services. Improving efficiency of social spending is also crucial.

- *Infrastructure:* In emerging market economies and low-income countries, infrastructure provision per capita is still a fraction of that in advanced economies. Inadequate infrastructure is widely judged a key barrier to growth and development, especially in Latin America and sub-Saharan Africa. Selecting public infrastructure projects with diffused productivity gains and raising the efficiency of public infrastructure spending are principal challenges for many economies. In Brazil, ongoing efforts to make the infrastructure concessions program more attractive to investors while improving the standards of governance and program design would help alleviate key supply-side bottlenecks and support near-term demand. In Colombia, implementation of the authorities' infrastructure agenda would help reduce a historical infrastructure gap, foster private investment, and help exporters access markets.

- *Institutions:* Many emerging market and developing economies have substantial scope to improve the climate for business and investment. Decisive actions to enhance governance and the rule of law would help rein in corruption, strengthening business confidence and providing a boost to investment in some countries (for example, Brazil, Mexico, Peru). Strengthening institutions can also help reduce country risk perceptions and act as a countervailing force against a possible tightening of global financial conditions. Many countries could simplify regulations and administrative procedures for starting a business, increase the efficiency of the legal system, and reduce regulatory uncertainty (for example, Turkey, South Africa).

- *Unleashing greater labor supply*: Labor force participation rates for women are much lower than those for men in emerging market and developing economies (the average gap is close to 30 percentage points for emerging market economies of the Group of Twenty). Gender gaps in labor force participation not only hold back potential output, but also limit women's economic and social opportunities, harming inclusiveness. Priority reforms include eliminating legal barriers that prevent women from working, improving infrastructure, and enhancing gender equality in accessing social services, finance, and education (for example, India).

- *Product and labor market regulations and trade policies*: Fostering greater competition in domestic product and service markets, simplifying labor market regulations, and removing barriers to trade are also important broad reform areas for many economies, and involve a varied set of priorities. In South Africa, for example, further progress is needed to facilitate entry by new firms into power generation, transportation, and telecommunications, which would reduce the cost of key business inputs and thereby foster growth and job creation. The recent agreement to introduce a national minimum wage, combined with a code of good practice for collective bargaining, has the potential to raise living standards for those below the poverty line. At the same time, its employment impact will need to be carefully monitored, with the government standing ready to introduce complementary measures for vulnerable sectors, such as small and medium-sized enterprises. Further labor market reforms are advisable to ensure that wages are determined by firm-specific conditions. In India, simplifying and easing labor market regulations and land acquisition procedures are long-standing requirements for improving the business climate. Expanding the role of market forces in the economy is a priority in China and will entail removing barriers to entry in the highly closed services sector and allowing state-owned enterprises to face harder budget constraints. Productivity could be fostered by reducing tariff and nontariff barriers to international trade (for instance, Brazil, China, and India).

Policies—Low-Income Developing Countries

As with the broader group of emerging market and developing economies, low-income developing countries dependent on commodity exports continue to face weaker economic prospects than those countries

Figure 1.22. Per Capita Real GDP Growth across Low-Income Developing Countries
(Percent)

Low-income developing economies dependent on commodity exports continue to face weaker economic prospects than those with more diversified export bases.
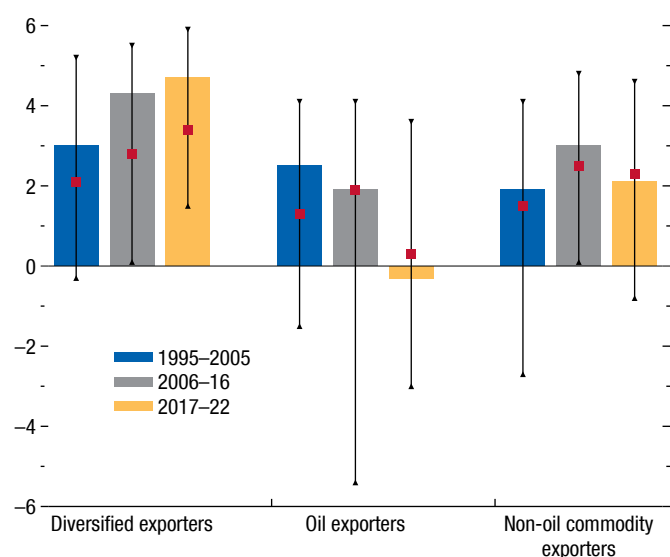
Source: IMF staff estimates.
Note: Bars denote PPP GDP weighted averages; red markers indicate the medians; and black markers denote the top and bottom deciles of per capita GDP growth in the country groups. Country groups are defined in IMF (2015).

with more diversified export bases (Figure 1.22).[11] With policy adjustments to lower oil revenues delayed, fiscal deficits in some commodity-exporting low-income countries remain large, external positions are weaker, and financial sector vulnerabilities are emerging. Although GDP is set to grow in most commodity-exporting low-income countries in 2017, fuel exporters are projected to do worse than nonfuel commodity exporters. By contrast, countries with more diversified export bases have recorded relatively strong growth, which is expected to continue at a rapid clip, in part, with the benefit of lower oil bills. Robust growth, however, has not always translated into improved fiscal and external current account positions, reflecting limited progress in adopting countercyclical policies and higher public sector spending.

Total public debt and debt service have therefore risen sharply across low-income developing countries, with about one-third at "high" risk of external debt

distress or already in debt distress, and one-third at "moderate" risk.[12] Many low-income developing countries continue to experience conflict and security disruptions (Afghanistan, Chad, Somalia, South Sudan, Yemen, a few parts of Nigeria), whereas parts of sub-Saharan Africa face food insecurity related to droughts (The Gambia, South Sudan, Somalia).

With divergent prospects, policy priorities continue to differ across low-income developing countries.

- Prospects for commodity exporters are heavily influenced by the process of adjustment to lower commodity prices. The adjustment needs to continue and, in some cases, accelerate, based on comprehensive and internally consistent sets of policies. Fiscal policy needs to be better calibrated to contain debt accumulation while protecting outlays key to growth prospects, such as priority capital expenditures and social spending. In many countries, improvements in domestic revenue mobilization and continued rationalization of spending needs, along with concessional financing, are necessary to underpin successful adjustment processes. Allowing greater exchange rate flexibility—where an option—could act as a shock absorber and facilitate adjustment, supported by monetary policy settings to contain the inflation pressures that may result from currency depreciations. Financial stability needs to be maintained through enhanced financial sector regulation and supervision and by addressing emerging financial sector vulnerabilities, including increased domestic arrears and NPLs. Countries in or at high risk of debt distress need to accelerate the adjustment and limit nonconcessional external borrowing.
- Policy priorities for diversified low-income developing countries vary. However, an overarching goal for these economies should be to strike a better balance between spending for development and social needs and improving public debt sustainability by rebuilding fiscal positions and foreign reserves holdings while growth is strong.

Across all low-income countries, better debt management would also help those exposed to global financial markets cope with volatility in capital inflows, balance sheet currency exposures, and the prospect of monetary policy normalization in the United States. Over the long term, the 2030 Agenda for Sustainable Develop-

---

[11]Classifications of low-income countries according to commodity dependence can be found in IMF (2015).

[12]Based on the Debt Sustainability Framework for Low-Income Countries, as described in IMF (2013b).

ment identifies a broad range of issues that will require action to deliver durable and inclusive growth. Within this framework, generating sustainable and resilient growth will require steps to promote diversification and structural transformation and bridge infrastructure gaps. In particular, efforts to boost domestic revenue mobilization, strengthen debt management, and ensure that public spending is efficient and well targeted would contribute to scaling up infrastructure investment without endangering public debt sustainability. To make growth more inclusive and resilient, policies should be oriented toward creating jobs and encouraging gender equality, promoting environmental sustainability, boosting access to financial services, and strengthening the redistributive role of fiscal policy to protect the most vulnerable.

Multilateral Policies

Strong, sustainable, balanced, and inclusive growth requires a well-functioning, cooperative, multilateral framework for international economic relations. Because national policies create spillovers across countries, all countries are better served when policymakers engage in regular dialogue and work within agreed mechanisms to resolve disagreements. At the same time, the international community continuously needs to adapt the multilateral system to the changing global economy. Active dialogue and cooperation will help improve and modernize rules while addressing individual countries' valid concerns. This process will ensure continued mutual benefits and evenhandedness and, together with strong domestic policies, help avoid a broad withdrawal from multilateralism, either through widespread protectionism or competitive races to the bottom in taxation and financial and regulatory oversight. Multilateral cooperation is also vital for addressing important longer-term challenges in the global economy, including providing support to low-income countries for meeting development goals and mitigating and adapting to climate change.

Maintaining Rules-Based, Open Multilateral Trade with Broadly Shared Gains

Cross-border economic integration through trade openness has been a critical source of productivity growth and resilience over the past several decades for countries at all income levels.[13] Hundreds of mil-

lions were lifted out of poverty in emerging market and developing economies during a period of rapid cross-border integration, helping reduce global income inequality. However, global trade has slowed dramatically in recent years, mostly reflecting weakness in aggregate demand, but also the slower pace of new trade reforms and an uptick in protectionist measures. And trade rules have not kept pace with the evolving global economy; for example, integrated global production structures require more coherent rules across several policy areas, such as goods trade, services trade, investment policy, and intellectual property.

Rolling back temporary barriers to trade introduced since the global financial crisis and reducing trade costs would support the nascent recovery in trade, reigniting an important driver of global productivity growth. To that end, pressing ahead with an ambitious trade agenda is crucial. A global trading system—with strong, well-enforced rules that continue to adjust to promote competition and a level playing field—remains critical (IMF, World Bank, and WTO 2017). Addressing tariff barriers in sectors where they remain high, such as agriculture, and implementing commitments under the Trade Facilitation Agreement, which came into effect in February 2017, can significantly reduce trade costs in traditional areas. Advancing trade reforms in services and in other areas, such as digital trade, and improving cooperation in investment policies can make positive contributions to cross-border trade flows and global growth; although progress is best made at the global level, ambitious, broad-based regional agreements that address these "frontier" areas of trade policy can also be helpful. As discussed in Chapter 1 of the April 2017 WEO, open trade policies should be complemented by comprehensive policy approaches at national levels to reduce adjustment pains and provide opportunities for all.

Cooperation for Maintaining Global Financial Stability

Maintaining robust national financial regulatory regimes, including in countries and regions with systemic financial systems, such as China, Europe, and the United States, and recapitalizing institutions and cleaning up balance sheets where necessary produces positive spillovers for global financial stability.

---

[13]A body of research has documented that economic integration together with technological progress has increased the efficient use

of global resources, boosted incomes, and expanded access to goods and services. For a recent summary, see Baldwin (2016). See also Wacziarg and Welch (2008); Costinot and Rodríguez-Clare (2013); and Fajgelbaum and Khandelwal (2016).

In addition, there is an urgent need to finalize the international financial regulatory reform agenda by tackling outstanding challenges, such as the regulation and oversight of financial institutions, including nonbanks; ensuring regulators can resolve globally systemic financial institutions effectively; and strengthening the resilience of central counterparty clearing for derivatives. Coordinated and collective action is needed to manage risks to financial stability from cyberattacks, money laundering, and terrorism financing. Closer cross-border regulatory cooperation is also needed to address the pressures that several countries have experienced in correspondent banking relationships, which play a key role in facilitating global trade, remittances, and economic activity. As shown in Box 1.5, remittances have grown in global importance and are a key mechanism for sustaining consumption in the face of income shocks.

Last, the high degree of international financial interconnectedness and vulnerability in some regions calls for a closely coordinated and adequately resourced global financial safety net as well as stronger frameworks for the prevention and resolution of debt crises.

Cooperation on International Taxation Issues

As increased capital mobility across borders has fueled international tax competition, governments have found it more challenging to finance their budgets without increasing taxes on labor income or imposing regressive consumption taxes. International corporate income tax evasion and avoidance through, for example, profit shifting to lower tax jurisdictions, could further erode popular support for international trade and investment integration. Policymakers can make more meaningful progress toward equitable tax systems (that prevent an increasing share of after-tax income from accruing to owners of capital) if their national efforts to safeguard revenues are backed by multilateral cooperation.

Noneconomic Challenges

Multilateral cooperation is also indispensable for addressing important medium-term global challenges, such as meeting the 2030 Sustainable Development Goals, and providing financial support to vulnerable economies and fragile states that face the greatest development needs and, in many cases, deep economic and security challenges. The international community will have a key role to play in fostering and coordinating financial and other types of support for countries most vulnerable to climate change. As discussed in Chapter 3, increases in temperature have vastly unequal effects across the world, with the brunt of adverse consequences borne by those who can least afford it and those who have contributed the least to the rising threat of climate change. Low-income countries will likely suffer disproportionately from further global warming, which is expected to trigger more severe droughts, storms, and epidemics. Coupled with rising sea levels, these effects could feed social unrest and refugee flows, with important cross-border implications. A concerted multilateral effort to help vulnerable economies cope with the consequences of climate change and stem the man-made causes of global warming is amply justified from both equity and efficiency perspectives.

Scenario Box 1. Impact of Recommended Policies in the Group of Twenty Economies
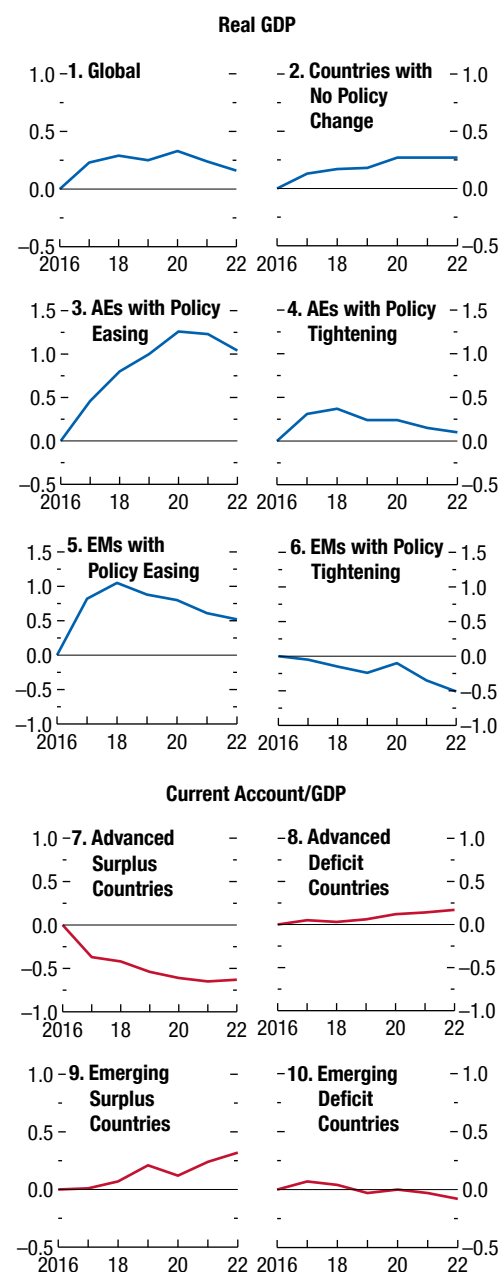
The IMF's G20 Model (G20MOD) is used here to estimate the global impact of implementing the IMF's Article IV monetary and fiscal policy advice to the Group of Twenty (G20) countries that is in addition to what is assumed in the *World Economic Outlook* (WEO) baseline.[1] A qualitative indicator of the recommended policy measures relative the WEO baseline is presented in Scenario Table 1. Less than half of G20 advanced and emerging market economies ease policy. For advanced economies, fiscal policy is eased in Germany, Japan, and Korea, and monetary policy accommodates that easing. In emerging market economies, fiscal policy is eased in the near term in Saudi Arabia, while additional monetary stimulus is provided in Mexico and Russia. Many remaining G20 countries tighten policy. Fiscal policy is tightened in France, Italy, Spain, the United States, Argentina, Brazil, China, India, Indonesia, and Turkey. Monetary policy is also tightened in China and Turkey. Several G20 countries—Australia, Canada, South Africa, and the United Kingdom—along with non-G20 countries have no discretionary changes in monetary or fiscal policy stances relative to the WEO baseline. However, recommendations for many G20 countries include budget-neutral increases in infrastructure spending that on balance act to stimulate activity owing to the resulting positive impact on productivity and thus private investment and real incomes.

The net impact over the WEO horizon is to raise global GDP (Scenario Figure 1). GDP is higher in all groups of countries except emerging market economies that are tightening policy. The positive spillovers from easing countries more than offset the own impacts in advanced economies that are tightening policy. However, the magnitude of the dampening impact of tighter policy in emerging market economies is too large to be offset by the policy easing elsewhere and largely reflects the relative importance of China and the magnitude of the policy tightening there.[2]

The mix of recommended policies has several benefits at the global level. The policy stimulus in countries with fiscal space strengthens external demand for those countries needing fiscal consolidations. This buffers the

---

[1]The quantification of the fiscal and monetary policy advice is based on IMF (2017d).

[2]Part of the tightening in fiscal policy in China is related to restructuring of state-owned enterprises to facilitate product market reforms, the benefits of which accrue over the medium term and are not included here, but can be found in IMF (2017d).

Scenario Figure 1. Group of Twenty Macro Scenario
(Percent difference from baseline)

Source: IMF staff estimates.
Note: AEs = advanced economies. EMs = Emerging market economies.

Scenario Box 1 *(continued)*

Scenario Table 1. Assumed Policy Actions Relative to the WEO Baseline

Color Key:
- Ease substantially
- Ease moderately
- Accommodate
- Tighten moderately
- Tighten substantially
- No change

	Monetary	Fiscal[1] Near term	Fiscal[1] Long term
Advanced Economies Easing Policy			
Germany	Accommodate	Ease moderately	Ease substantially
Japan	Accommodate	Ease moderately	Tighten moderately
Korea	Accommodate	Ease substantially	Ease substantially
Advanced Economies Tightening Policy			
France	Accommodate	No change	Tighten substantially
Italy	Accommodate	No change	Tighten substantially
Spain	Accommodate	Tighten moderately	Tighten substantially
United States	No change	Tighten moderately	Tighten substantially
Emerging Market Economies Easing Policy			
Mexico	Ease substantially	No change	No change
Russia	Ease moderately	No change	No change
Saudi Arabia	No change	Ease substantially	Tighten substantially
Emerging Market Economies Tightening Policy			
Argentina	No change	No change	Tighten substantially
Brazil	No change	Tighten substantially	Tighten substantially
China	Tighten moderately	Ease moderately	Tighten substantially
India	No change	Tighten moderately	Tighten moderately
Indonesia	No change	Tighten moderately	Tighten moderately
Turkey	Tighten substantially	Tighten substantially	Tighten substantially
No Policy Changes			
Australia	No change	No change	No change
Canada	No change	No change	No change
South Africa	No change	No change	No change
United Kingdom	No change	No change	No change
Other euro area	Accommodate	No change	No change
Non-Group of Twenty	No change	No change	No change

Source: IMF staff compilation.
[1]Defined as the difference between the projected and recommended level of the cyclically adjusted primary balance.

near-term negative impact on activity while increasing overall global fiscal sustainability. In the medium term, lower global public debt reduces global real interest rates, leading to permanently higher private investment and potential output. External imbalances also improve, but not everywhere. For advanced economies where external imbalances have recently widened, these policy measures yield an improvement, with current accounts falling in surplus countries and rising in deficit countries. For emerging market economies, however, external imbalances rise modestly. In large part, this reflects the scale of adjustment in China and its impact on domestic demand and thus imports.[3] In addition to these quantifiable macroeconomic benefits, the recommended policy measures also help to reduce risks to the outlook, lowering the probability of sharp adjustments down the road and raising medium-term sustainable growth.

[3]It is worth noting that IMF Article IV policy advice also includes structural and other reform measures that are not included here and those measures, particularly for China, will help to reduce external imbalances.

Box 1.1. Labor Force Participation Rates in Advanced Economies

In advanced economies, fewer people in the adult population (those 15 and older) have been working or actively looking for work since the turn of the century.[1] This mild downturn in the labor force participation rate began around 2000, appears to have picked up since 2007, and is generally projected to continue and eventually gather pace as populations age.

Population aging generally puts downward pressure on the overall participation rate. In advanced economies, the population shares of young (age 15–24) and prime-age workers (age 25–54) have been declining, while those of the 54–64 and 65+ age groups have been rising (Figure 1.1.1). Given that the 54–64 and especially the 65+ age groups have lower participation rates than the prime-age group, these shifts tend to lower the overall participation rate.

But beneath the headline figures, the variations in how participation rates within various age and gender groups have changed are striking, with remarkable gains in the participation rates of women in some countries. If such gains continue and broaden, the demographic transition may not immediately translate into a slowdown in the growth of the labor force. This heterogeneity (as well as some evidence of convergence in participation rates) also suggests that there is scope for policies to postpone the adverse effects of the demographic transition on the growth rate of the workforce.

Age Groups

For the adult population of advanced economies as a whole, labor force participation rates declined by 0.8 percentage point since 2007.[2] Participation rates declined for the young (age 15–24—the group with the largest cross-country dispersion in participation rates), in part because more people stay in school for

Prepared by Zsóka Kóczán, with research assistance from Ava Hong.

[1]Unless stated otherwise, the figures for advanced economies in this box refer to the combined workforces and working-age populations of 31 advanced economies, which account for about 95 percent of the total population of countries classified as advanced economies in the *World Economic Outlook* (WEO).

[2]The total labor force participation rate can be written as the population-share weighted average of the participation rates of different age groups:

$$LFPR_t = \sum_{i=1}^{4} LFPR_t^i \frac{pop_t^i}{pop_t}.$$

Here, *i* refers to the following age groups: 15–24, 25–54, 55–64, 65+. Results are robust to using a finer breakdown of age groups into five- or 10-year intervals.

Figure 1.1.1. Population Shares by Age Group and Gender
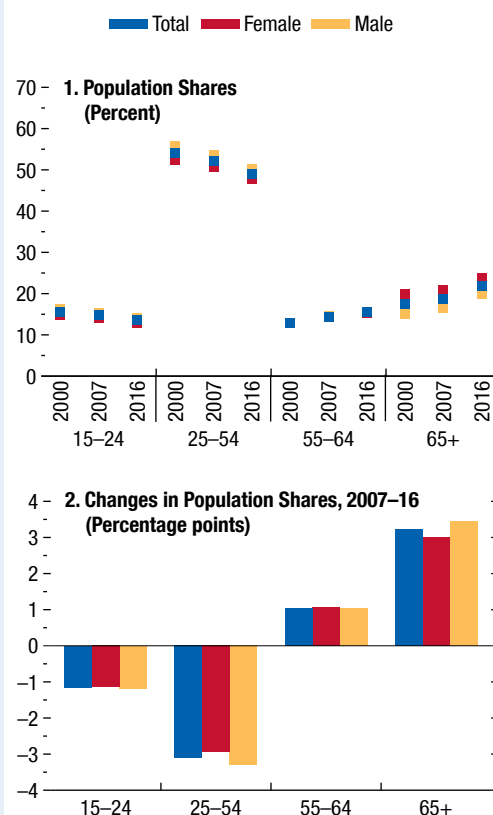
Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.
Note: The figure shows population-weighted averages across 31 advanced economies.

longer.[3] For the 25–54 age group, where participation remains the highest, rates have been mostly flat in total, though with starkly divergent paths for men and women, with men's participation rate declining and women's increasing. Participation rates of both men and women in the 55–64 age group showed a sharp rise, and the 65+ participation rates also rose for both genders, especially after 2007 (Figure 1.1.2).[4]

[3]As discussed, for instance, by Balleer, Gómez-Salvador, and Turunen (2009); Aaronson and others (2014); Council of Economic Advisors (2014); Canon, Kudlyak, and Liu (2015); and Dvorkin and Shell (2015).

[4]Declining participation rates of the young and prime-age men are highlighted by Balleer, Gómez-Salvador, and Turunen

Box 1.1 *(continued)*

Figure 1.1.2. Labor Force Participation Rates by Age Group and Gender

Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.
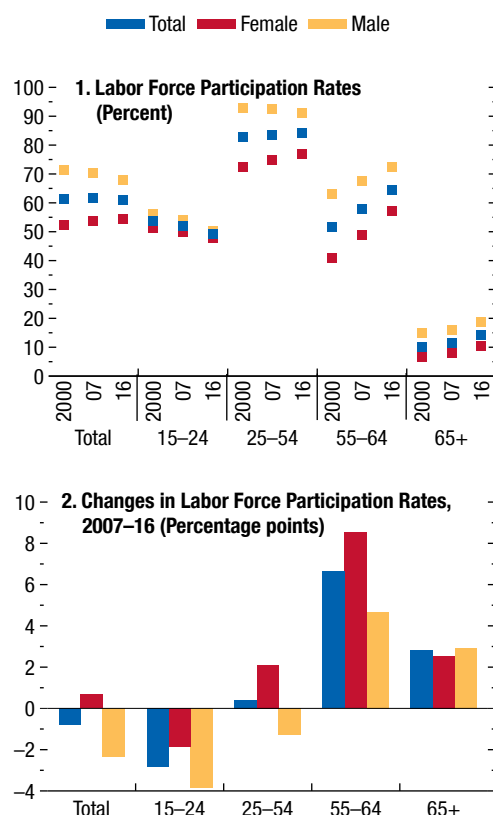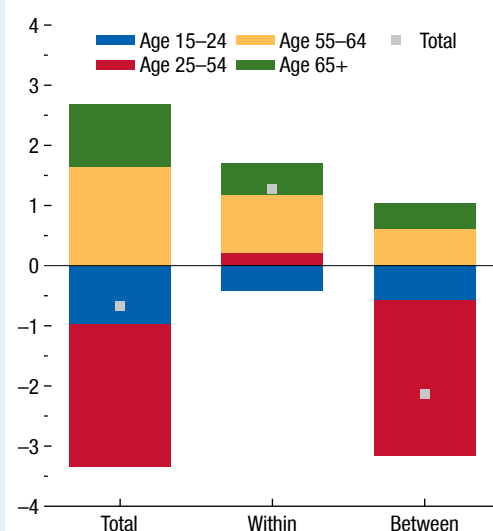Note: The figure shows population-weighted averages across 31 advanced economies.

Figure 1.1.3. Decomposition of Change in Labor Force Participation Rate, 2007–16

Source: IMF staff calculations.
Note: Total population across 31 economies normalized to 1. Within and between changes are based on, respectively, population and labor force participation rates held constant at 2007 levels. Between changes include the small interaction effect.

Shifting population shares have tended to push overall participation rates down, while rising participation rates within some age groups have tended to increase them. This effect can be documented using a shift-share decomposition, as illustrated in Figure 1.1.3. The figure decomposes changes in overall participation rates into changes in participation rates within each age group while holding their population shares fixed ("within changes"), a shift in the relative sizes of age groups while holding participation rates fixed ("between changes"), and an interaction term:

$$\Delta LFPR_t = \sum_{i=1}^{4} \left(\Delta LFPR_t^i PS_0^i \right.$$
$$\left. + LFPR_0^i \Delta PS_t^i - \Delta LFPR_t^i \Delta PS_t^i \right)$$

where $PS_t^i = \frac{pop_t^i}{pop_t}$ is the population share and $t = 0$ refers to year 2007, the initial year. The contribution of the interaction term (combining changes in participation rates and changes in group sizes) is typically very small and is included in the "between change" in Figure 1.1.3.

This decomposition suggests that the decline in overall participation rates was driven by aging—captured by "between changes"—while "within changes" would have acted to increase participation rates: the contribution of the decline in the participation rates of the young is more than offset by the increase in participation rates of the age 25 and

(2009), Dvorkin and Shell (2015), Council of Economic Advisors (2016), and Krause and Sawhill (2017). In European economies, this stands in contrast with rising female labor force participation, which has been declining in the United States (for example, Krause and Sawhill 2017). Balleer and others (2009) examine the drivers of the increase in labor force participation rates during the precrisis period in the euro area and predict a fall in participation rates over the following years based on an age and cohort analysis.

Box 1.1 *(continued)*

older groups.[5] This finding reflects a continuation of precrisis trends; at the same time, the drags from shifts toward the older age groups and from the decline in the participation rates of the young were more pronounced after 2007.

This broad pattern—aging weighing on participation rates, and rising participation of older workers more than offsetting the falling rates of younger workers—holds across most of the large European economies. Their net effect is positive in Germany, Italy, and the United Kingdom (Figure 1.1.4).[6] In the United States, the decline in the participation rate of prime-age workers (ages 25–54) has compounded the effects of aging. Because of the decline in the participation rate of US prime-age workers, the United States makes a sizable contribution to the decline in the overall sample of advanced economies. In fact, the overall labor force participation rate of the remaining 30 countries increased by 0.4 percentage point between 2007 and 2016.

Gender

The 0.8 percentage point decline in participation between 2007 and 2016 masks a striking divergence between men and women: men's participation rate fell by 2.3 percentage points during this period, while that of women increased 0.7 percentage point. A shift-share decomposition similar to that shown in Figure 1.1.3, but further splitting age groups by gender, confirms such differences for the 25–54 age group in particular, where participation rates of men have been falling but those of women have been rising.[7] This pattern became more pronounced after the global financial crisis (Figure 1.1.5): in the precrisis years male participation rates in this group still increased in Germany and Italy (and showed only a very small drop in France and the United Kingdom), so that the overall contribution of the 25–54 age group to participation rates was positive, while postcrisis the declining rates for men more

[5]This is in line with the findings of Aaronson and others (2014), who examine the causes of the decline in participation rates in the United States and highlight the role of structural forces, such as aging.

[6]As expected, the effects of aging are most pronounced in Japan. The increase in participation rates of the 55–64 group is largest in continental Europe.

[7]Changes in the participation rates of other age groups and the effects of aging act in the same direction for males and females.

Figure 1.1.4. Changes in Labor Force Participation, Select Advanced Economies, 2007–16
(Percentage points)
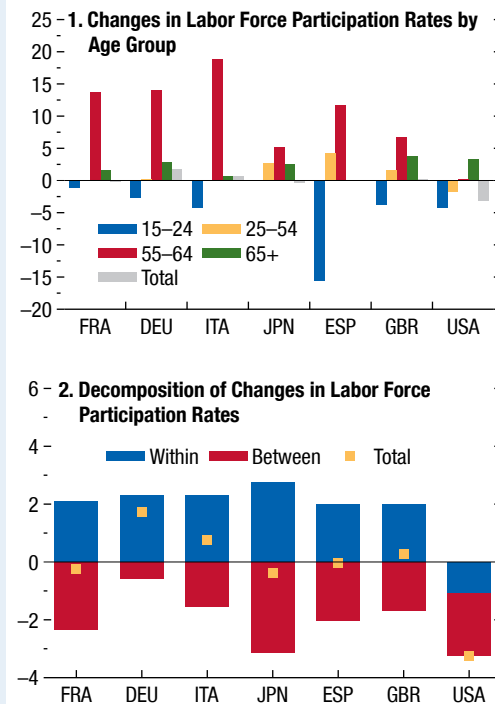
Sources: Organisation for Economic Co-operation and Development; and IMF staff calculations.
Note: Within and between changes are based on, respectively, population and labor force participation rates held constant at 2007 levels. Between changes include the small interaction effect. Labels in the figure use International Organization for Standardization (ISO) country codes.

than offset the effects of rising rates for women. The United States again stands out from other large advanced economies, with declining participation rates of prime-age women, and, to a greater extent, of men.[8] Over time, there has been some convergence of participation rates, especially of female participa-

[8]Council of Economic Advisors (2016) documents the trend of declining prime-age male labor force participation in the United States over the past half century and examines a number of potential explanations. The analysis suggests that reductions in the demand for labor, especially for lower-skilled men, appear to be an important component of the decline in prime-age male labor force participation.

Box 1.1 *(continued)*

Figure 1.1.5. Changes in Labor Force Participation Rates for the 25–54 Age Group by Gender, Select Advanced Economies
(Percentage points)
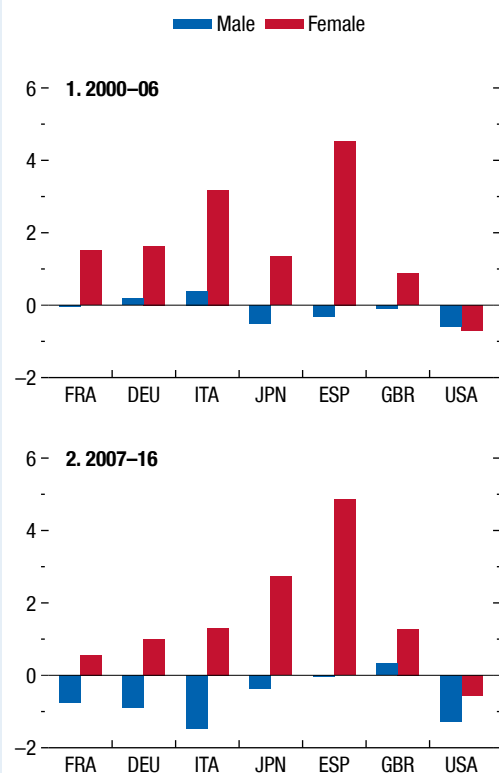
Source: Organisation for Economic Co-operation and Development.
Note: Labels in the figure use International Organization for Standardization (ISO) country codes.

Figure 1.1.6. Convergence in Female Labor Force Participation Rates

$$y = -0.18x + 13.04$$
$$R^2 = 0.21$$

Source: Organisation for Economic Co-operation and Development.
Note: Labels in the figure use International Organization for Standardization (ISO) country codes.

tion rates: countries where participation rates were lower in 2000 tended to see larger increases, while those with the highest rates saw smaller increases or outright declines (Figure 1.1.6).[9]

_____

[9]Blau and Kahn (2013) examine the drivers of this convergence and find that the expansion of family-friendly policies (including parental leave and part-time work entitlements) in other Organisation for Economic Co-operation and Development countries can explain close to 30 percent of the relative decrease in US women's labor force participation. However, they note that these policies also appear to encourage part-time work and employment in lower-level positions: in the United States, women are more likely than in other countries to have full-time jobs and to work as managers or professionals.

Outlook and Policy Implications

Looking ahead, demographics are likely to continue to play a prominent role in determining the path of the aggregate labor force participation rate. Over the longer term, the downward influence of aging on the aggregate labor force participation rate is likely to dominate. This will restrain growth in the "potential labor force" (affected by the size and age composition of the working-age population and the participation rates of the demographic groups) and hence potential output, as noted in Chapter 3 of the April 2015 WEO.

Policies to raise participation would help slow the decline in the labor force growth rate, in turn slowing the rise of the dependency ratio and thereby supporting fiscal sustainability. Eliminating policies that discourage second earners in households, ensuring the availability of affordable child care and elderly care, fostering flexible work arrangements, and offering family-friendly benefits, such as parental leave, would generally be beneficial.

Box 1.1 *(continued)*

However, given the divergent paths in participation rates across the countries highlighted above, policy priorities vary with country-specific circumstances. In the United States, where both male and female prime-age participation rates have been declining, more targeted measures may be needed (see IMF 2017a). Immigration reform would also raise the size of the labor force and boost participation rates and could largely offset further declines in participation caused by aging.

Box 1.2. Will the Revival in Capital Flows to Emerging Markets Be Sustained?

Capital flows to emerging markets slumped to a multidecade low in 2015, prompting concerns that outflow pressures could trigger a broader economic downturn and lead to crises in those economies (see Chapter 2 of the April 2016 *World Economic Outlook*). A useful measure for illustrating the unusual downturn is *nonresident capital inflows*, which are defined as the net acquisition of emerging market assets by foreign investors (also referred to as *gross inflows*). As a share of emerging market GDP, nonresident inflows fell to 1.6 percent in 2015, the lowest level since 1990 (Figure 1.2.1, panel 1). Another useful measure is *net capital flows*, which is defined as nonresident inflows less net outward investment by emerging market economy residents excluding official reserves accumulation. Net capital flows turned negative in 2015 for the first time in at least 35 years, reaching –1.0 percent of emerging market GDP, and remained negative the following year.

In recent quarters, however, capital inflows to emerging markets have revived. Total nonresident capital inflows to emerging markets are estimated to have averaged $200 billion in the first two quarters of 2017, up from a quarterly average of $120 billion in 2015–16 (Figure 1.2.1, panel 2). Net capital flows have also turned up in recent quarters, reaching $115 billion in the first half of 2017. The sharp downturn and the recent revival in both measures of capital flows can be attributed to two main developments—the evolution of China's financial account and a rollercoaster ride in portfolio flows to emerging markets.

Stabilization of External Pressures in China

China experienced a sharp decline in nonresident capital inflows between the third quarter of 2015 and the first quarter of 2016. During this period, concerns about the possibility of a sharp depreciation of the Chinese renminbi prompted the repayment of dollar debt by Chinese firms. In addition, foreign investors sought to reduce their exposures to renminbi assets, especially offshore bank deposits. Because those funds had been on-lent by Chinese banks' foreign affiliates to banks domiciled on the mainland, the mainland banks had to repay those loans, thus further reducing total external debt (see McCaulay and Shu 2016). External pressures prompted large reserves interventions by the

The author of this box is Robin Koepke, with research assistance from Gavin Asdorian.

Figure 1.2.1. Capital Flows to Emerging Market and Developing Economies
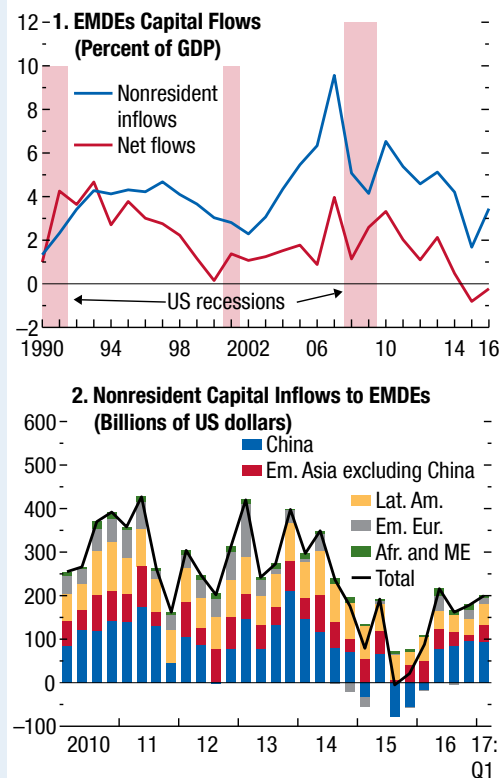
Sources: Haver Analytics; and IMF staff estimates.
Note: Afr. and ME = Africa and the Middle East; Em. Asia = emerging Asia; Em. Eur. = emerging Europe; EMDEs = emerging market and developing economies; Lat. Am. = Latin America.

central bank, which kept renminbi depreciation in check (Figure 1.2.2, panel 1).

Initially, the capital flows reversal was driven primarily by a reduction in Chinese liabilities to the rest of the world, while resident outward investment continued to grow broadly in line with previous trends (Figure 1.2.2, panel 2). Nonresident inflows recovered in the second quarter of 2016, but at that point domestic investors began to move more and more money out of the country by acquiring foreign assets. Since the beginning of 2017, resident outflow pressures have abated following tighter enforcement of capital flow management measures, weakening in the US dollar, and a pickup in growth momentum. Net capital outflows (including

Box 1.2 *(continued)*

Figure 1.2.2. China: Reserves and Capital Flows

1. China: Accumulation of Official Reserves
(Billions of US dollars)

2. China: Breakdown of Quarterly Capital Flows
(Billions of US dollars)

Nonresident inflows
Resident outflows
Net errors and omissions
Total

Sources: Haver Analytics; and IMF staff estimates.

Figure 1.2.3. Latest Capital Flows Trends and Prospects

1. Nonresident Portfolio Flows to EMDEs
(Billions of US dollars; three-month rolling sum)

Portfolio debt
Portfolio equity

Taper tantrum
RMB shock
US election

2. EMDEs Capital Flows and GDP Growth

Nonresident inflows (percent of GDP)
EMDEs growth (percent)

US recessions
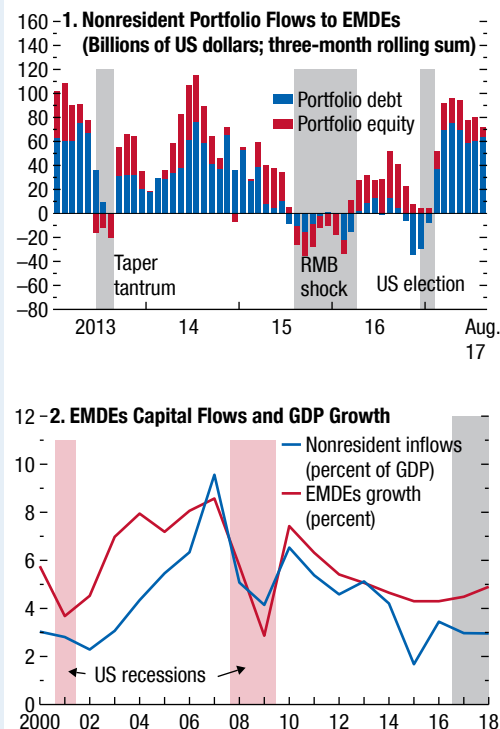
Sources: Haver Analytics; and IMF staff estimates.
Note: EMDEs = emerging market and developing economies; RMB = renminbi.

errors and omissions) eased to about $20 billion in the second quarter of 2017 (from a peak of $210 billion in the third quarter of 2016), which also marked the first quarter of central bank reserves accumulation in China since the second quarter of 2015.

A Rollercoaster Ride in Emerging Market Portfolio Flows

The second development behind the recent slump and revival of capital flows to emerging markets was a rollercoaster ride in portfolio inflows that began with the taper tantrum in mid-2013 (Figure 1.2.3, panel 1). During that episode, investors reacted strongly to signals from the US Federal Reserve that it would start tapering purchases of bonds sooner than previously expected. Rising US market interest rates weighed on emerging market asset prices as foreign investors began to pare their emerging market exposures.

In mid-2015, portfolio equity and debt inflows again came under significant pressure when concerns about possible renminbi devaluation intensified. From the third quarter of 2015 to the first quarter of 2016 global investors sold a net $52 billion in emerging market stocks and bonds, exceeding outflows of an estimated $32 billion during the taper tantrum. The episode was a stark illustration of China's growing importance for global financial markets and the world economy, and for other emerging market economies in particular.

After a modest recovery in 2016, portfolio flows were hit by renewed repricing of US bonds after the US election in November 2016. This time, the jump in US bond yields was driven by expectations of fiscal expansion and deregulation that would support growth and prompt faster monetary tightening. Similar to the taper tantrum episode, investors responded by

Box 1.2 *(continued)*

curtailing their emerging market positions, reflected in a reversal, albeit short-lived, of portfolio flows.

Starting in early 2017, portfolio flows to emerging markets recovered as investor sentiment about the global economy improved and financial conditions eased. Against the backdrop of a rally in global stock markets, foreign purchases of emerging market stocks and bonds rose to an estimated $205 billion year-to-date through August, more than twice the total for 2015–16.

Other Factors

Aside from these two explanatory factors, a number of other developments have shaped capital flow dynamics in recent years. An important idiosyncratic shock was Russia's sharp reversal of nonresident capital inflows beginning in 2014, when its conflict with Ukraine escalated. Since then, annual nonresident inflows to Russia have averaged $120 billion (0.4 percent of emerging market GDP) less than in 2011–13.

A mitigating factor for the slowdown in net capital flows to emerging market economies in 2015–16 was reduced resident outward investment from most emerging market economies (with the notable exception of China). Resident investment abroad by emerging market economies excluding China averaged $171 billion less annually in 2015–16 than in the three previous years, reflected in reduced outward direct investment ($72 billion), portfolio investment ($51 billion), and other investment ($48 billion). The decline in resident outward investment itself seems to have been driven primarily by reduced foreign inflows, reflecting the two-way nature of capital flows. In particular, an influx of foreign capital into local markets may, directly or indirectly, provide funding for domestic investors to acquire foreign assets. The fact that local investors in emerging markets did not seek to take more money abroad during this period may also indicate, with the benefit of hindsight, that rapid asset sales by foreign investors were exaggerated relative to changes in fundamentals of emerging market economies.

Capital Flows Outlook

Looking ahead, capital flows are expected to continue to recover at a moderate pace. Nonresident inflows to emerging market economies are projected at 3 percent of GDP in 2017, up from 2.6 percent in 2016 (Figure 1.2.3, panel 2). A robust economic outlook should help emerging market economies attract solid inflows, with aggregate real GDP growth projected to rise to 4.6 percent and 4.9 percent in 2017 and 2018, respectively, from 4.3 percent in 2015 and 2016.[1] Strong growth should benefit all components of capital flows, but would be expected to boost inflows of foreign direct investment particularly, given that such inflows are relatively more dependent on domestic factors (see Koepke 2015 for a literature survey).

However, the external environment could turn less favorable in the coming years, given the prospect of monetary policy normalization in the major advanced economies. Rising interest rates and a gradual unwinding of central bank asset purchases under the baseline forecast are likely to exert some drag on portfolio flows and bank-related inflows to emerging markets. Debt flows are generally most sensitive to changes in external interest rates, suggesting that foreign purchases of emerging market bonds and cross-border bank lending could see some retrenchment in the years ahead.

Moreover, downside risks to capital flows remain significant. For example, the major central banks could tighten monetary policy faster than currently expected, which could cause risk appetite toward emerging market assets to suffer a setback from the buoyant conditions that have prevailed during the past six months, triggering sizable outflows from emerging markets (see Chapter 1 of the October 2017 *Global Financial Stability Report*).

---

[1]The analysis in Chapter 2 of the April 2016 *World Economic Outlook* finds that slowing emerging market growth contributed to the deceleration in capital flows to emerging markets in recent years.

Box 1.3. Emerging Market and Developing Economy Growth: Heterogeneity and Income Convergence over the Forecast Horizon

Per capita real GDP growth in emerging market and developing economies is projected to pick up from 3.2 percent in 2017 to 3.6 percent in 2019 and stay at about 3.7 percent in 2020–22 (Figure 1.3.1). The growth differential relative to advanced economies, where real per capita growth is projected to average 1.4 percent between 2017 and 2022, suggests some catching up between the two groups. However, the headline growth figures for emerging market and developing economies are heavily influenced by the largest economies in the group and conceal substantial differences

across countries.[1] Zooming in on countries' growth prospects reveals that they are not as favorable for some economies in the group as the headline figures would suggest.

Heterogeneity

In general, there are sizable differences in emerging market and developing economy growth rates

[1] Per capita real income for each group is calculated by summing real GDP at purchasing power parities and dividing by total population for the group.

Figure 1.3.1. Per Capita Real GDP Growth across Country Groups
(Percent)
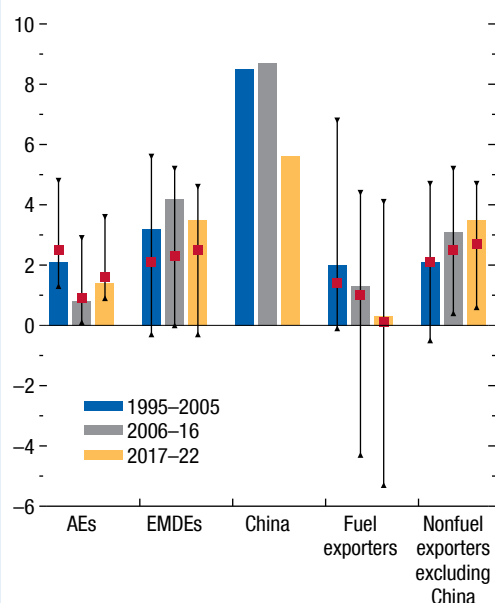
Source: IMF staff estimates.
Note: Bars denote PPP (purchasing power parity) GDP weighted averages; red markers indicate the medians; and black markers denote the top and bottom deciles of per capita GDP growth in the country groups. The fuel and nonfuel exporter subgroups are defined in Table D of the Statistical Appendix and cover EMDEs only. AEs = advanced economies; EMDEs = emerging market and developing economies.

Figure 1.3.2. Per Capita Real GDP Growth, Emerging Market and Developing Economies, by Region
(Percent)
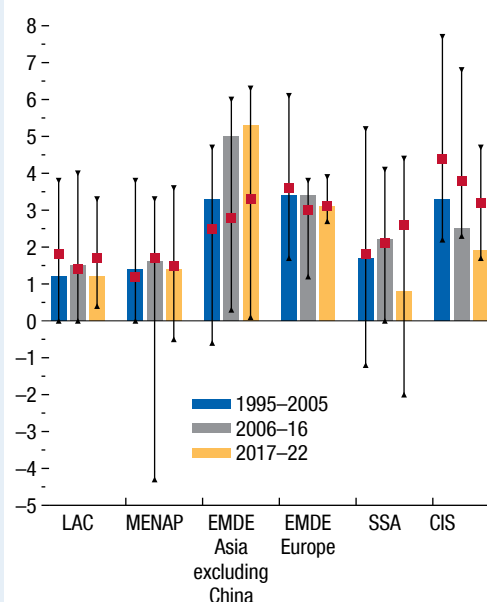
Source: IMF staff estimates.
Note: Bars denote PPP (purchasing power parity) GDP weighted averages; red markers indicate the medians; and black markers denote the top and bottom deciles of per capita GDP growth in the country groups. CIS = Commonwealth of Independent States; EMDE = emerging market and developing economies; LAC = Latin America and the Caribbean; MENAP = Middle East, North Africa, Afghanistan, and Pakistan; SSA = sub-Saharan Africa.

The author of this box is Francesco Grigoli.

Box 1.3 *(continued)*

Table 1.3.1. Correlates of Growth Projections, EMDEs, 2017–22[1]

Fuel Exporters	−1.977***
	(0.398)
Sub-Saharan Africa	0.116
	(0.522)
EMDE Asia	0.754
	(0.595)
EMDE Europe	0.562
	(0.433)
Latin America and the Caribbean	0.315
	(0.459)
Commonwealth of Independent States	0.826*
	(0.449)
Small Countries[2]	−1.210***
	(0.408)
Ln per Capita Real GDP in 2011 (PPP)	0.132
	(0.218)
Per Capita Real GDP Growth (2012–16)	0.376***
	(0.089)
Real GDP Growth in Trading Partners (2017–22)	0.019
	(0.178)
Constant	0.535
	(2.260)
Observations	147
R^2	0.495

Source: IMF staff estimates.
Note: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. EMDE = emerging market and developing economy; PPP = purchasing power parity.
[1] Dependent variable in the regression is projected growth in per capita real GDP averaged over 2017–22. The sample of EMDEs excludes Libya, Yemen, and Venezuela, whose forecasts are affected by idiosyncratic factors.
[2] Defined here as countries with a population of less than half a million.

across regions (Figure 1.3.2). Per capita growth in Asian emerging market and developing economies is significantly higher than in other regions. Likewise, the emerging market economies of Europe, followed by those in the Commonwealth of Independent States, are generally experiencing stronger per capita growth than those in sub-Saharan Africa, the Middle East and North Africa, and Latin America and the Caribbean. The fast pace of per capita income growth in Asia is driven to an important extent by China (as suggested by Figure 1.3.1) as well as India. Differences in *median* growth rates across regions are more modest.

An even starker difference in per capita growth rates exists between fuel-exporting and fuel-importing emerging market and developing economies. The

median growth rate for fuel exporters was lower than that for fuel importers in 1995–2005 and especially in 2006–16, and is forecast to diverge further in 2017–22 (as shown by the red markers in Figure 1.3.1). Regression analysis of the average projected growth rates over the 2017–22 period on a set of indicator variables and controls confirms dependence on fuel exports and population size as the most important factors underlying the diversity in countries' growth forecasts (Table 1.3.1). Fuel exporters' projected growth rates are almost 2 percentage points lower, on average, over the 2017–22 period, reflecting an ongoing adjustment to persistently lower oil prices, which, in some cases, involves reforms expected to deliver growth dividends only in the medium and long term.[2] The results also indicate that small countries (defined here as those with populations of less than half a million people) are projected to experience 1¼ percentage points lower growth, on average, than other countries, suggesting the importance of such factors as diseconomies of scale, lack of diversification, and vulnerability to natural disasters. Once dummy variables for fuel exporters and small countries are included in the regressions, the regional dummies are no longer significant.[3]

Even within the fuel-exporter and importer groups, however, there is significant heterogeneity. Among fuel importers, for example, China, India, Vietnam, and Bangladesh have grown, on average, by almost 6 percent annually from 1995 to 2016; their growth rates are projected to moderate slightly to 5.8 percent over 2017–22. For the median fuel importer, the annual per capita growth rates are 2.4 percent and 2.8 percent, respectively, over those periods. Among exporters, Angola, Azerbaijan, Kazakhstan, and Turkmenistan registered per capita growth rates, on average, of about 6 percent during 1995–2016, while the median fuel-exporter country grew by 1.7 percent a year over the same period.

[2]Substituting a commodity-exporter dummy for the fuel-exporter dummy returns insignificant results, suggesting that nonfuel commodity exporters are projected to perform relatively better than fuel exporters in per capita real GDP growth.
[3]The results are generally robust to including historical growth calculated over different periods (as opposed to 2012–16 as in the regression presented in Table 1.3.1), as well as to estimating the regressions by weighted least squares. Running the same regressions with October 2016 WEO data yields similar results for the fuel-exporter dummy, albeit with a smaller coefficient. Dropping large countries, such as China and India, does not affect the results.

Box 1.3 *(continued)*

Figure 1.3.3. EMDEs' per Capita Real GDP Growth Differentials vis-à-vis Advanced Economies: 1995–2016 versus 2017–22
(Percentage points)
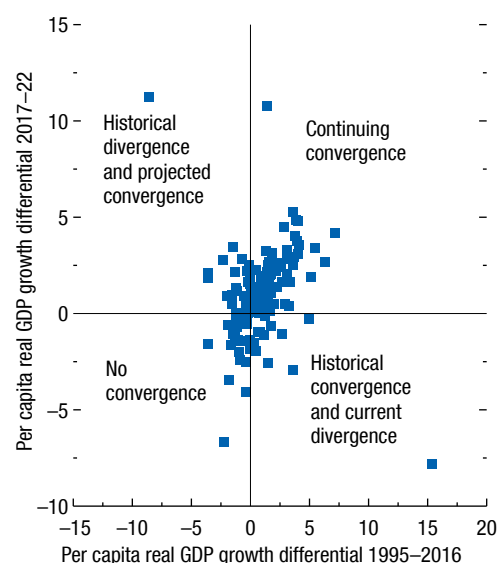
Source: IMF staff estimates.
Note: The figure depicts countries' per capita real GDP growth rates averaged over 1995–2016 (*x*-axis) against their projected growth rates averaged over 2017–22 (*y*-axis), in both cases expressed as a deviation from the per capita real GDP growth rate for advanced economies averaged over the same period. EMDEs = emerging market and developing economies.

Figure 1.3.4. Distribution of EMDE per Capita Real GDP Growth Differentials with Respect to Advanced Economies
(Number of countries)
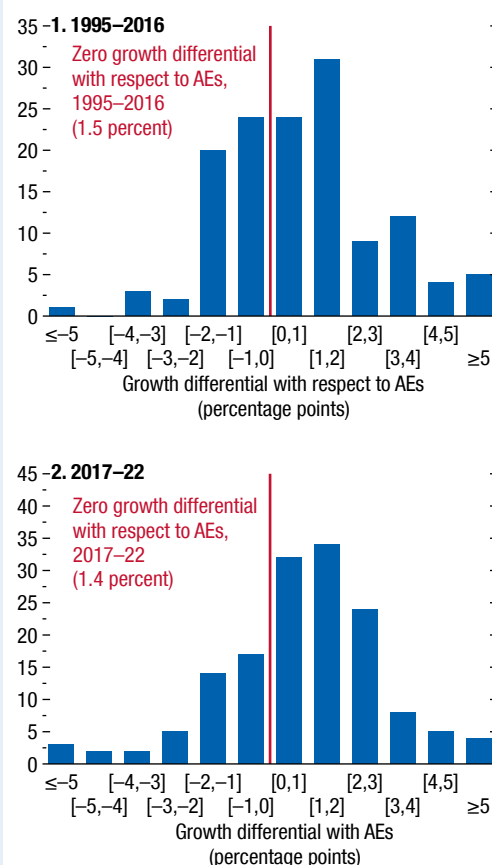
Source: IMF staff estimates.
Note: The figure depicts the number of countries with growth rates (in deviation from the advanced economy growth rate over the same period) in the intervals shown in the *x*-axis. AEs = advanced economies; EMDE = emerging market and developing economy.

Convergence toward Advanced Economy Income Levels

Even though the aggregated figures suggest some convergence toward advanced economy income levels over the forecast horizon, the picture is less bright for a sizable fraction of emerging market and developing economies.[4] Under current WEO projections, slightly less than three-quarters of the economies in the group are expected to experience per capita income growth rates higher than those of advanced economies over 2017–22. The rest—43 economies representing about 14 percent of the emerging market and developing

economy population—are projected to lag further behind advanced economies in terms of GDP per capita (Figure 1.3.4).[5]

In general, emerging market and developing economies with faster per capita income growth than

---

[4]For an analysis of emerging market and developing economies' growth performance compared with that of advanced economies over the past four decades, see Chapter 2 of the April 2017 WEO.

[5]The existence of convergence groups or clubs has been widely discussed and tested in the literature on income convergence (Durlauf and Johnson 1995; Desdoigts 1999; Durlauf and Quah 1999; Canova 2004).

Box 1.3 *(continued)*

Figure 1.3.5. Distribution of EMDE per Capita Real GDP Growth Differentials with Respect to Advanced Economies, by Type of Export Earnings and Region
(Number of countries)
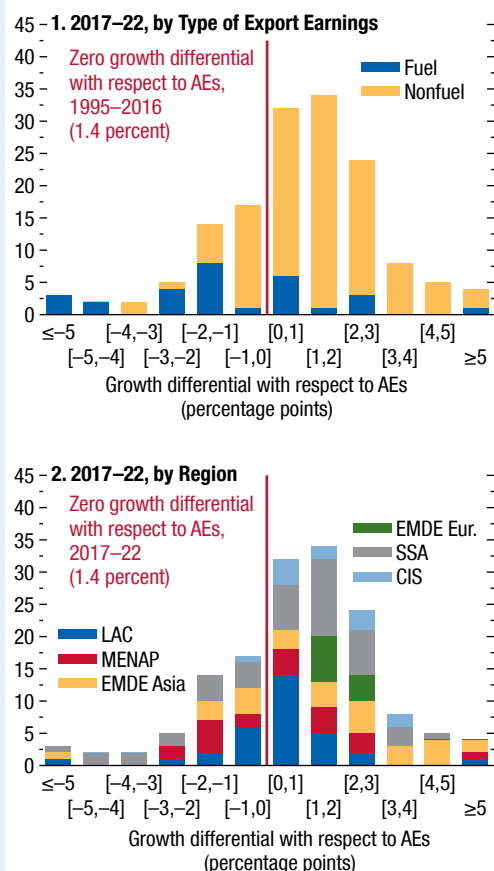
1. **2017–22, by Type of Export Earnings**

Zero growth differential with respect to AEs, 1995–2016 (1.4 percent)

2. **2017–22, by Region**

Zero growth differential with respect to AEs, 2017–22 (1.4 percent)

Growth differential with respect to AEs (percentage points)

Source: IMF staff estimates.
Note: The figure depicts the number of countries with growth rates (in deviation from the advanced economy growth rate over the same period) in the intervals shown in the *x*-axis. 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, and Pakistan; SSA = sub-Saharan Africa.

Figure 1.3.6. Distribution of EMDE Population by per Capita Real GDP Growth Rate
(Population shares)

1. **1995–2016**

Zero growth differential with respect to AEs, 1995–2016 (1.5 percent)

2. **2017–22**

Zero growth differential with respect to AEs, 2017–22 (1.4 percent)

Growth differential with respect to AEs (percentage points)
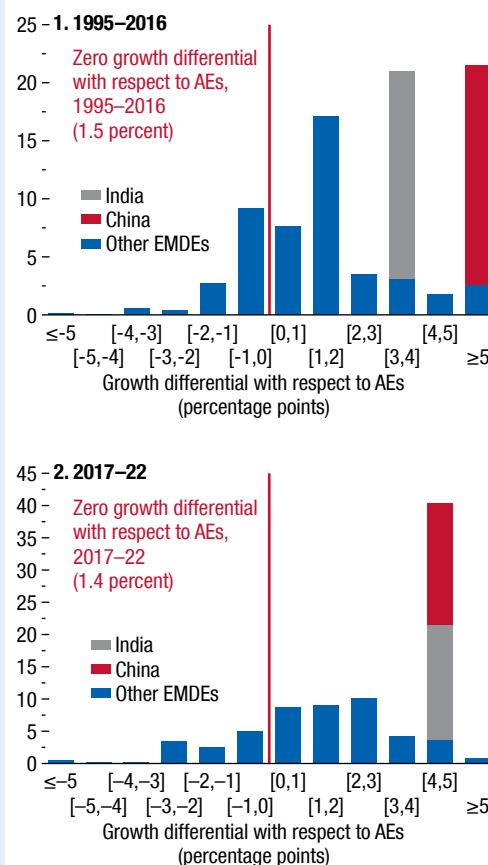
Source: IMF staff estimates.
Note: The figures depict the share of the total EMDE population in countries with growth rates in the intervals shown on the *x*-axis. AEs = advanced economies; EMDE = emerging market and developing economy.

advanced economies over the past two decades are projected to continue to grow faster, as shown by the strong overlap between those countries that exhibited convergence in 1995–2016 and those that are projected to converge over the forecast horizon (that is, with most of the countries falling into the upper right

quadrant in Figure 1.3.3). Convergence is expected to be led by fuel importers, especially those in emerging market and developing Asia and sub-Saharan Africa (Figure 1.3.5), and by countries with larger populations, that is, China and India (Figure 1.3.6). It is disappointing that almost 18 percent of emerging market and developing economies failed to converge toward advanced economy income levels in 1995–2016 and are not projected to do so in the next five years; and 9 percent of countries were converging in 1995–2016,

Box 1.3 *(continued)*

but are projected to increasingly fall behind advanced economy income levels over the projection period. On the brighter side, about 19 percent of emerging market and developing economies were not converging in 1995–2016, but are now projected to do so (Figure 1.3.3).

   Growth projections for emerging market and developing economies do not indicate income convergence *within* the group. Per capita real GDP growth rates among emerging market and developing economies in 2017–22 are not projected to be significantly higher (at 5 percent significance level) in countries with relatively low incomes (Figure 1.3.7).[6] By contrast, per capita real GDP growth forecasts for advanced economies display a negative and significant relationship (at 5 percent significance level) with income levels in 2011, indicating further income convergence within the advanced economy group over the forecast horizon, despite more homogeneous income levels.

   Finally, a country's growth rate does not always foretell matching gains in income for the majority of the population. In China and India, for example, where real per capita GDP grew by 9.6 percent and 4.9 percent a year, respectively, in 1993–2007, the median household income is estimated to have grown less—by 7.3 percent a year in China and only 1.5 percent a year in India.[7]

   [6]The lack of a significant correlation (at 5 percent significance level) between levels of 2011 per capita real GDP and projected growth rates holds even when countries growing more slowly than advanced economies are excluded from the sample.
   [7]Based on data from the World Panel Income Distribution database of Lakner and Milanovic (2015).

Figure 1.3.7. Projected per Capita Real GDP Growth Rates and 2011 Real Income Levels, AEs and EMDEs
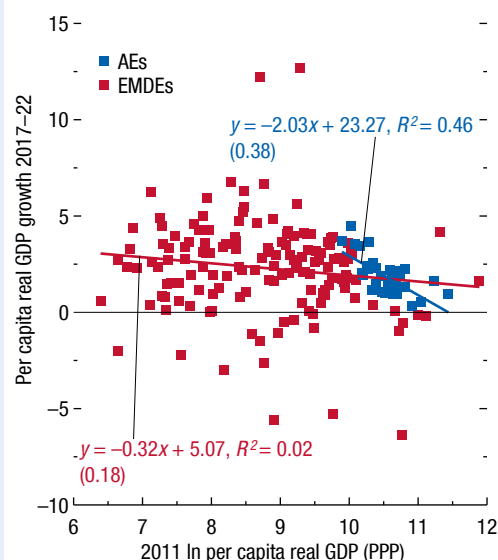
Source: IMF staff estimates.
Note: The blue and red lines are fitted based on regressions of projected growth rates (averaged over 2017–22) on real per capita real GDP levels in 2011 (at purchasing power parity) on AE and EMDE samples, respectively. The number in parentheses in the regression equation is the standard error of the estimated coefficient on real per capita real GDP levels in 2011. AEs = advanced economies; EMDEs = emerging market and developing economies; PPP = purchasing power parity.

Box 1.4. Macroeconomic Adjustment In Emerging Market Commodity Exporters

Commodity prices have fallen dramatically in recent years, with food and metal products losing about 20 percent in value since 2012–13, and oil prices halving over the past three years (Figure 1.4.1). Commodity prices have not rebounded in the past three years to their peak levels, and medium-term forecasts suggest that they are unlikely to do so. This box documents the significant macroeconomic adjustments under way in many commodity-exporting emerging market and developing economies in the wake of these price shocks.

The analysis is based on a sample of 48 commodity-exporting emerging market and developing economies, about half of which are low-income countries. The economies are grouped by their main commodity exports (fuel, metals, or food) and exchange rate regime during 2013–17.[1]

As shown in Figure 1.4.2, many commodity-exporting emerging market and developing economies maintain either currency pegs—predominantly relative to the US dollar, but in some cases to currencies such as the euro—or flexible exchange rate regimes. Nevertheless, almost half of the commodity exporters with pegs in 2013 have subsequently adjusted their exchange rate regimes ("regime adjustment" in the figure), typically moving to either a more flexible regime or devaluing the currency in response to a large commodity terms-of-trade decline. A significant number of fuel-exporting countries have abandoned pegs (Figure 1.4.2, panel 1). In general, terms-of-trade losses were largest for countries with pegs to the US dollar (Figure 1.4.3).

Figure 1.4.1. Commodity Prices
(Index; January 1, 2013 = 100)
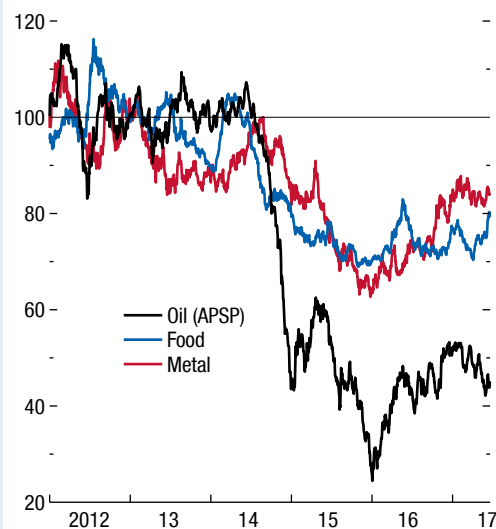
Sources: Bloomberg L.P.; and IMF staff calculations.
Note: APSP = average petroleum spot price.

The authors of this box are JaeBin Ahn, Eugenio Cerutti, and Ksenia Koloskova.

[1]As in Chapter 2 of the October 2015 *World Economic Outlook*, a country is defined as a commodity exporter if it meets the following two criteria: (1) commodities constituted at least 35 percent of the country's total exports, on average, between 1962 and 2014; and (2) net commodity exports accounted for at least 5 percent of its gross trade (exports plus imports), on average, between 1962 and 2014. From the sample of 52 countries, which satisfy these criteria, Libya, Syria, Venezuela, and Yemen are omitted due to data constraints. The classification by type of main export is derived using World Bank World Development Indicators data, based on the shares of different types of commodity exports in total merchandise exports for 1999–2015.

External Adjustment

Countries with flexible exchange rates have seen sizable nominal depreciations since 2013, which translated into real depreciations, making them the only group whose real effective exchange rates adjusted to the commodity-price shock (Figure 1.4.4). Countries with currencies fixed to the US dollar, by contrast, experienced appreciation in nominal and real effective terms (with the nominal appreciation reflecting the general strengthening of the US dollar vis-à-vis other currencies). Exchange rates fixed to other currencies—mostly the euro—saw a depreciation in nominal terms vis-à-vis the dollar, which induced some real effective exchange rate adjustment. Finally, the largest nominal depreciations were observed among the economies that adjusted their regimes but, in most cases, this nominal depreciation did not translate into sizable depreciations in real effective terms because inflation increased in tandem.[2]

[2]Analysis in this box does not consider parallel/black market exchange rates.

Box 1.4 *(continued)*

Figure 1.4.2. Exchange Rate Regimes of Commodity-Exporting Emerging Market and Developing Economies
(Number of countries)

1. Commodity Fuel Exporters
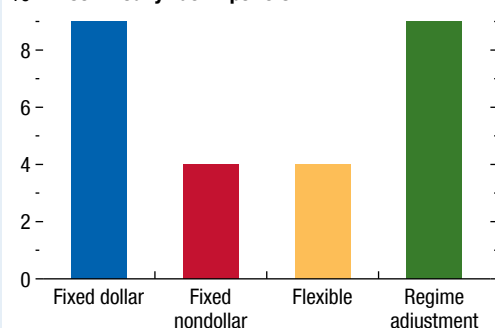
2. Commodity Metal Exporters
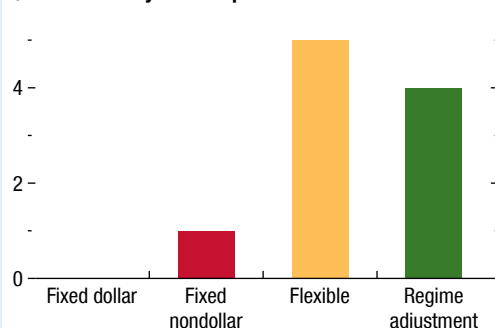
3. Commodity Food Exporters
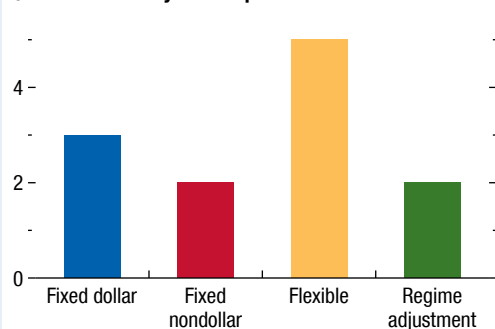
Source: IMF staff calculations.
Note: Regime adjustment covers fixed exchange rate regimes that devalued their parity or changed the exchange rate regime toward more flexibility during 2013–17.

Figure 1.4.3. Commodity Terms of Trade
(Index; June 2012 = 100; PPP weighted)

- Fixed dollar
- Fixed nondollar
- Flexible
- Regime adjustment
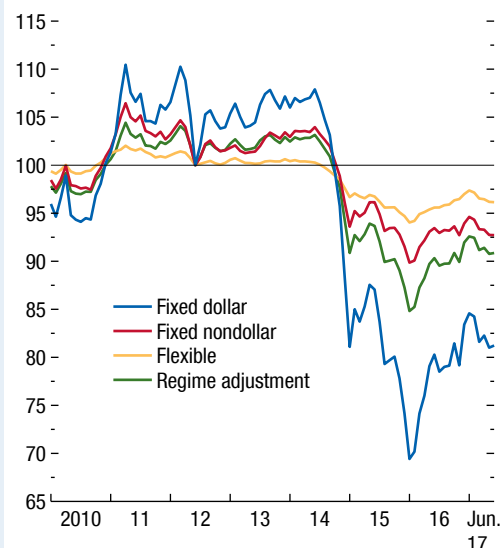
Source: Gruss 2014.
Note: PPP = purchasing power parity.

In response to terms-of-trade shocks that directly affect the external balance, net export volume could adjust, partly offsetting the initial impacts of the shocks. The change in real exchange rates in response to the terms-of-trade shock facilitates this external adjustment through the expenditure-switching channel. Such real effective exchange rate adjustment and the associated switch in expenditures are expected to be more pronounced in countries with a flexible exchange rate regime (Adler, Magud, and Werner 2017; IMF 2017b). Panel 1 of Figure 1.4.5 confirms this notion and shows that, despite facing bigger terms-of-trade shocks, countries with fixed exchange rates experienced the smallest adjustment in net exports, whereas those with flexible exchange rate regimes saw strong net export adjustments, which more than offset their terms-of-trade shocks. Export volumes did not react much, on average, across the different exchange rate regimes, likely reflecting the insensitivity of commodity exports to the exchange rate as well as these countries' limited export diver-

Box 1.4 *(continued)*

Figure 1.4.4. Evolution of Exchange Rates
(Index; 2010 = 100; PPP weighted)

— Fixed dollar   — Fixed nondollar
— Flexible   — Regime adjustment

1. Real Effective Exchange Rate

2. Nominal Effective Exchange Rate

3. US Dollar per National Currency
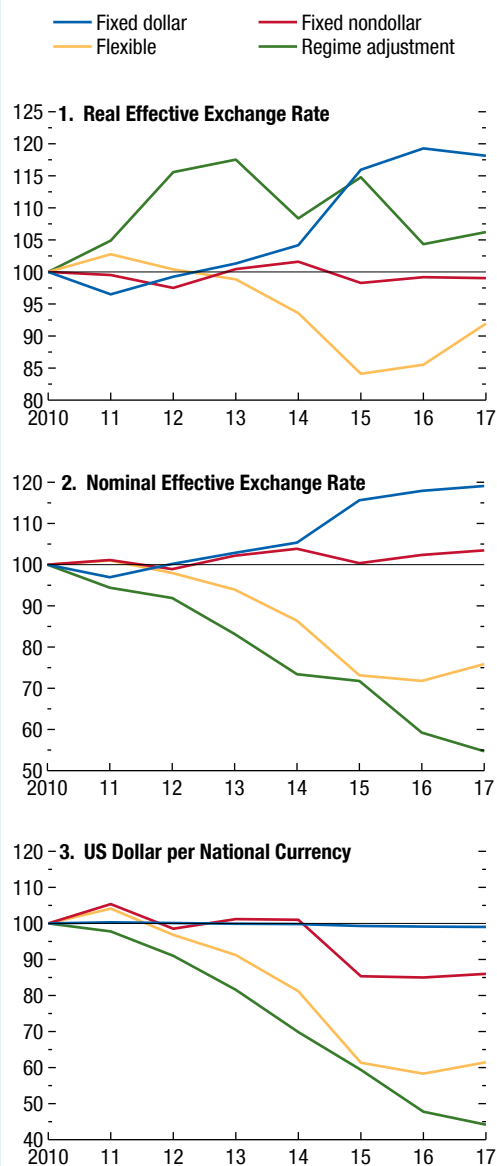
Sources: IMF, *Information Notice System;* and IMF staff calculations.
Note: Yearly average for 2010−16; as of June for 2017.
PPP = purchasing power parity.

Figure 1.4.5. Net Export Adjustment, 2013−16

1. Net Export Adjustment, 2013−16
(Percent of GDP)

■ Import volume compression
■ Export volume expansion
■ ToT income shock
■ Changes in trade balance

Fixed   Flexible   Regime adjustment

2. Export Response, 2013−16
(Percent of GDP)

Export volume expansion

■ Fixed
■ Flexible
■ Regime adjustment

REER appreciation
(percent)

3. Import Response, 2013−16
(Percent of GDP)

■ Fixed
■ Flexible
■ Regime adjustment

Import volume compression

REER appreciation
(percent)

Source: IMF staff calculations.
Note: REER = real effective exchange rate; ToT = terms of trade.

Box 1.4 *(continued)*

sification (Figure 1.4.5, panel 2). The stark contrast in the behavior of net exports stems mainly from the extent of import contraction. In turn, this could be attributed to expenditure-switching effects in flexible regime countries (and lack thereof in fixed regime countries) (Figure 1.4.5, panel 3) as well as the varying extent to which countries used their fiscal buffers, as discussed next.

Fiscal and Macroeconomic Adjustments

   In the aftermath of the shock, countries with fixed exchange rates used their fiscal and external buffers to a greater extent than did those with more flexible exchange rates. As shown in Figure 1.4.6, countries with currency pegs incurred large fiscal deficits in the aftermath of the commodity price decline, which were heavily financed with higher borrowing, decreasing reserves, and/or other past savings (such as deposits in sovereign wealth funds). Countries that have had a regime adjustment also increased their borrowing— but less than did countries that maintained pegs. They have also relied much less on reserves, likely due to their low initial levels (which may have contributed to the regime change in many cases). Those countries with flexible exchange rates managed to keep budgets balanced throughout 2013–16 and avoided the deple-tion of reserves.

   Assessing whether flexible exchange rates have helped safeguard GDP growth is more challeng-ing. Countries with pegs to the dollar had greater terms-of-trade losses than the others to begin with (Figure 1.4.3), so they would be expected to see weaker growth if they were not utilizing buffers. Zooming in on the subsample of fuel exporters (which experienced terms of trade losses at the same time), Figure 1.4.7, panel 1 shows that the decline in growth rates were generally comparable across countries with different types of exchange rate regimes (with the exception of those with pegs to currencies other than the US dollar, which is a small group). All in all, countries with dollar pegs shored up their GDP growth rate to keep it on par with growth in the countries with flexible exchange rates despite experi-encing larger terms-of-trade losses—but with a greater reliance on buffers.

Figure 1.4.6. Fiscal Indicators
(Percent of GDP; PPP weighted)
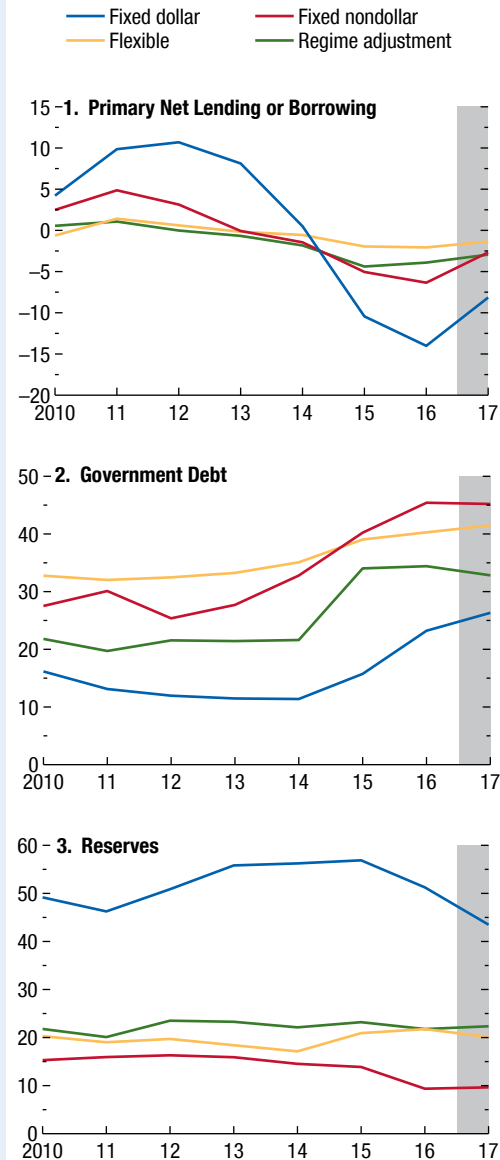
Source: IMF staff estimates.
Note: PPP = purchasing power parity.

Box 1.4 *(continued)*

Figure 1.4.7. Change in per Capita GDP Growth and Inflation in Fuel Exporters, Conditional on CToT

(Percent; average 2014–16 versus average 2011–13)

1. Change in per Capita GDP Growth

2. Change in CPI Inflation
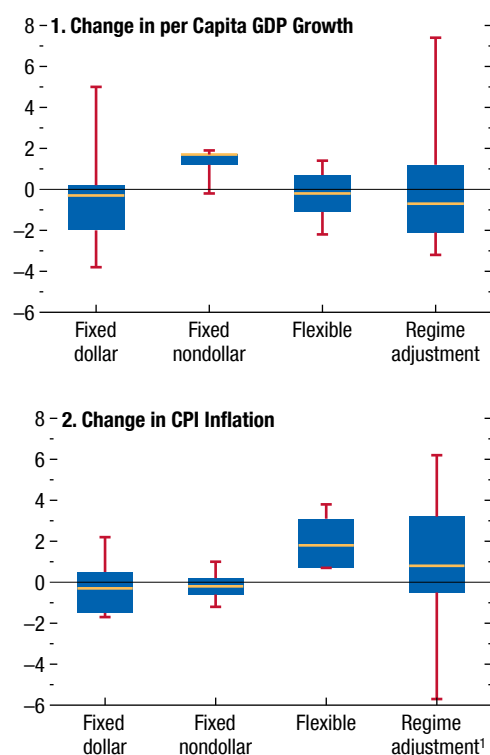
Source: IMF staff calculations.
Note: The horizontal line inside each box represents the median; the upper and lower edges of each box show the top and bottom quartiles; and the red markers denote the maximum and minimum. CPI = consumer price index; CToT = commodity terms of trade.
[1]Minimum value excludes outlier value for the Islamic Republic of Iran (–16.3).

Turning to inflation rates, countries that experienced large depreciations/devaluations—those with flexible exchange rates and those that have adjusted regimes—saw, on average, a larger increase in consumer price inflation because of exchange rate pass-through (although the increase was relatively contained—between 1 percent and 3 percent for most countries, conditional on their commodity terms-of-trade shocks) (Figure 1.4.7, panel 2).

Box 1.5. Remittances and Consumption Smoothing

The number of people living outside their country of birth increased by nearly 60 percent over 1990–2015 to about 250 million, or 3 percent of the world's population. Migrants typically maintain strong ties with their home countries, remitting part of their labor income earned in their destination country to their families staying behind.

The recorded US dollar value of remittances to emerging market and developing economies increased fivefold during 1990–2015, nearly three times the value of official development assistance. By 2015, 98 countries received remittance inflows greater than 1.5 percent of GDP, with nearly one-third receiving inflows exceeding 10 percent of GDP (Figure 1.5.1). While some significant "remittance corridors" are entirely between emerging market and developing economies, about 45 percent of remittances flow from advanced economies to emerging market and developing economies. As such, remittances have the potential to be an increasingly important mechanism for sharing income risks on a global scale.

Although remittances play a positive long-term role in economic and social development, this box focuses on an arguably no-less-critical role—that of mitigating cyclical risks to household consumption

The authors of this box are Kimberly Beaton, Luis Catão, and Zsóka Kóczán.

stemming from major macroeconomic shocks that often hit emerging market and developing economies, particularly the poorer ones.[1,2] In principle, deep integration into the global financial system can smooth the effects of such idiosyncratic income shocks on household consumption through borrowing and lending in capital markets.[3] However, poorer countries are known to face a host of fric-

[1]For instance, by promoting financial deepening, reducing poverty, and increasing fiscal resources—see Adams and Page (2005); Jongwanich (2007); and Giuliano and Ruiz-Arranz (2009). While other research has also pointed to possible negative effects of remittances on growth—for instance, associated with losses in external competitiveness due to exchange rate appreciations brought about by higher remittances, Rajan and Subramanian (2005) find that such Dutch Disease effects often associated with foreign aid do not appear to extend to private remittances.

[2]Ratha (2003); Hadzi-Vaskov (2006); Bugamelli and Paterno (2009); Chami, Hakura, and Montiel (2009); Combes and Ebeke (2011); De and others (2016); and Beaton and others (2017) consider the importance of remittances as a risk-sharing arrangement to smooth consumption in developing countries generally. Beaton, Cevik, and Yousefi (2017) explicitly consider the importance of remittances in smoothing consumption under fiscal shocks. Few studies have focused on the role of remittances in smoothing commodity price shocks.

[3]Kose, Prasad, and Terrones (2009) define consumption smoothing as delinking fluctuations in idiosyncratic consumption growth from fluctuations in income, to maintain a steady pace of household consumption over time.

Figure 1.5.1. Net Remittances as a Share of Output, 2015
(Percent)

Legend:
- Less than −1
- −1 to 0
- 0 to 5
- 5 to 10
- More than 10
- No data
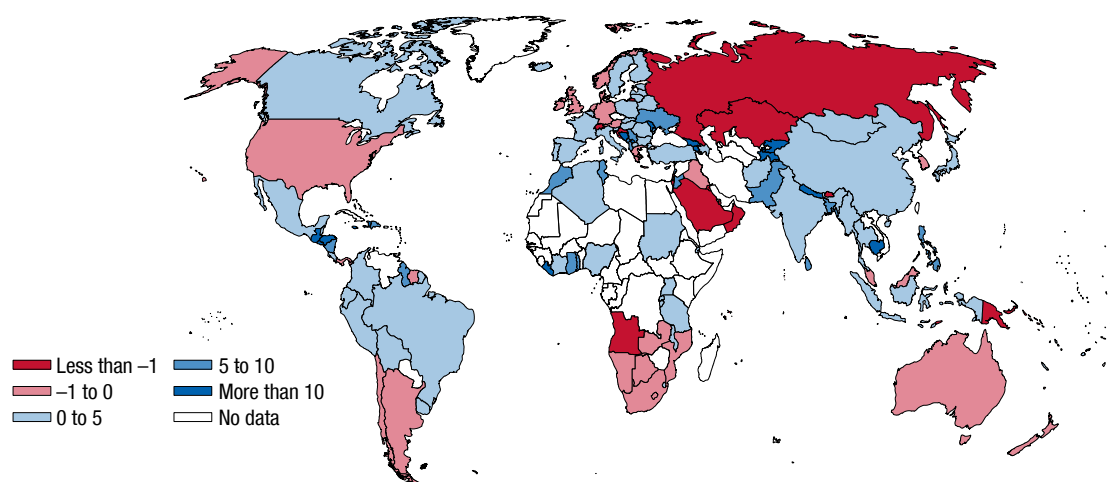
Sources: IMF, World Economic Outlook database; World Bank, Migration and Remittances database; and IMF staff calculations.

Box 1.5 *(continued)*

Figure 1.5.2. Financial Integration
(Percent of GDP)
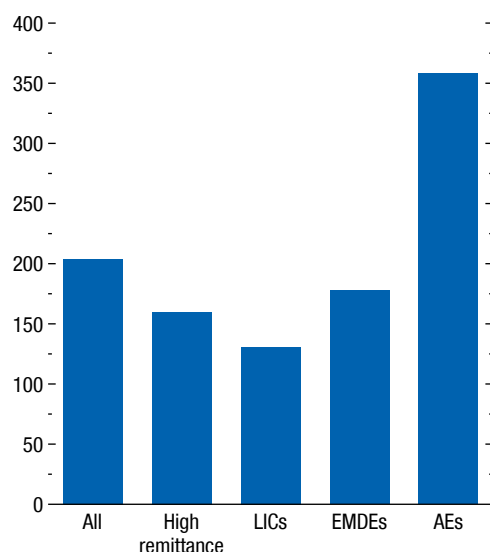
Source: IMF staff calculations.
Note: "High remittance" refers to those countries with remittance inflows greater than the median of 1.5 percent of GDP over 1990–2014. Financial integration refers to de facto financial integration measured by the sum of external assets and liabilities (as a share of GDP) from the data set by Lane and Milesi-Ferretti (2017) in 2014. AEs = advanced economies; EMDEs = emerging market and developing economies; LICs = low-income countries.

tions that limit international financial integration (Figure 1.5.2); these impediments can, in turn, greatly constrict the effectiveness of the textbook capital-market-based mechanism for smoothing consumption. The main questions addressed in this box, therefore, is the extent to which remittances help overcome this financial imperfection and whether their effectiveness varies across types of shocks and characteristics of sending and receiving countries.

A first stab at answering this question is to note that remittances are the least volatile component of balance of payments flows (Figure 1.5.3, panel 1). Their volatility is even lower than that of foreign direct investment flows, which are well known to be less volatile than equity and portfolio financial flows. Remittances are also significantly less positively correlated with GDP than foreign portfolio investment and foreign

direct investment flows.[4] The stabilizing role of remittances also stands out when comparing the volatility of the current account including remittances to that excluding remittances: if remittances had little effect on current account volatility, one would expect to see a cluster of points (one for each country) along a 45-degree line in the second panel of Figure 1.5.3. Instead, a far larger cluster of points is observed above the line, suggesting that remittances help stabilize the current account, particularly in countries where the value of remittances is sizable relative to GDP.

While remittances appear to help stabilize the current account and are typically less correlated with GDP than other external financing flows, what matters directly for societal welfare is the extent to which household consumption is stabilized following shocks to domestic income. Consumption growth tends to be far more volatile in many, if not all, emerging market and developing economies than in advanced economies. A much-touted benefit of international *financial* integration would be the elimination of this "imperfection" in international risk sharing; yet that goal remains elusive for most countries (see Prasad and others 2003; and Kose, Prasad, and Terrones 2009). The question is whether greater international labor market integration can help mitigate such financial market imperfections through remittance flows and, if so, under what circumstances and country characteristics.

This question can be examined in a standard econometric model of risk sharing. Defining country-specific (that is, idiosyncratic) household consumption and output growth in country i at time t as $\Delta \tilde{c}_{it} = \Delta c_{it} - \Delta \bar{c}_t$ and $\Delta \tilde{y}_{it} = \Delta y_{it} - \Delta \bar{y}_t$, where $\Delta \bar{c}_t$ is global household consumption growth and $\Delta \bar{y}_t$ is global GDP per capita growth, the relevant regression model can be written as:

$$\Delta \tilde{c}_{it} = \beta_1 \Delta \tilde{y}_{it} + \beta_2 R_{it} \Delta \tilde{y}_{it} + \beta_3 FI_{it} \Delta \tilde{y}_{it} + \phi REER_{it} + \lambda_t + \alpha_i + \varepsilon_{it}, \quad (1.5.1)$$

where λ_t and α_i denote time and country fixed effects and ε_{it} is the error term. R_{it} and FI_{it} are, respectively,

---

[4]This is true for both gross and net flows, as well as for correlations in levels and in first differences in a broad cross-country panel spanning 1990–2015. Looking at bilateral remittance flows, Frankel (2011) finds that remittances are mostly countercyclical for the recipient country. Yet, in some cases, remittances sent primarily for investment motives can be procyclical, even if to a lesser extent than portfolio or foreign direct investment flows.

Box 1.5 *(continued)*

the remittances-to-GDP ratio and the sum of gross foreign assets and liabilities as a share of GDP (the usual de facto measure of international financial integration; see Lane and Milesi-Ferretti 2017).[5]

If financial markets were perfect, consumption risk would be shared equally across countries and relative income growth would not matter for consumption, so $\beta_1 = \beta_2 R_{it} = \beta_3 FI_{it} = 0$. At the other extreme—absent all risk sharing through foreign borrowing and investment—$\beta_1 + \beta_2 R_{it} + \beta_3 FI_{it}$ should be equal to one. Given financial market imperfections, β_1 is never zero; yet greater financial and labor market integration should help reduce the overall correlation between idiosyncratic consumption and output growth, implying that the coefficients on the interaction terms, β_2 and β_3, are expected to be negative.

Results of the estimation of equation (1.5.1) confirm that remittances facilitate consumption smoothing. Estimates of equation (1.5.1) indicate that the expected negative signs on the coefficients are typically observed and, more crucially, that β_2 is statistically significant—that is, remittances reduce the dependence of consumption on the home country GDP and thus improve risk sharing.[6] On a broad cross-country basis (which includes countries receiving both high and low remittances as well as more and less financially integrated countries), about 27 percent

[5]Except for the second and third terms on the right-hand side of equation (1.5.1), this regression specification has been standard in the macro literature on international risk sharing (for example, Obstfeld 1993; Lewis 1996; Kalemli-Ozcan, Sorensen, and Yosha 2003; Kose, Prasad, and Terrones 2009). It was first expanded to consider the financial integration interaction term by Sorensen and others (2005) and then augmented to include the remittances interaction term by De and others (2016) and later by Beaton, Cevik, and Yousefi (2017) and Beaton and others (2017). Catão and Chang (2017) show how the micro foundations of the standard risk-sharing equation emanate from a model of costly financial transfers at the household level, implying that the coefficient on the relative income term is effectively a measure of financial frictions; and that under these circumstances, the coefficient φ on the real effective exchange rate (defined as appreciation, denoting a rise in the index) can take either a positive or a negative sign (as with frictionless financial markets). They also show that that coefficient is influenced by country-specific pricing structures in goods markets, and so is bound to display considerable cross-country heterogeneity and be less precisely estimated in pooled regressions. Underlying econometric work for this box supports that prior, so that coefficient is unimportant in the present context.

[6]This result is consistent with De and others (2016); Beaton and others (2017); and Beaton, Cevik, and Yousefi (2017).

Figure 1.5.3. Smoothing Effects of Remittances

1. Volatility of Inflows
(Standard deviation of flows as a percent of GDP)
- Remittances
- Foreign direct investment
- Total inflows
- Other inflows

2. Current Account Volatility with and without Remittances
(Percent of GDP)
- High remittance receivers
- Others
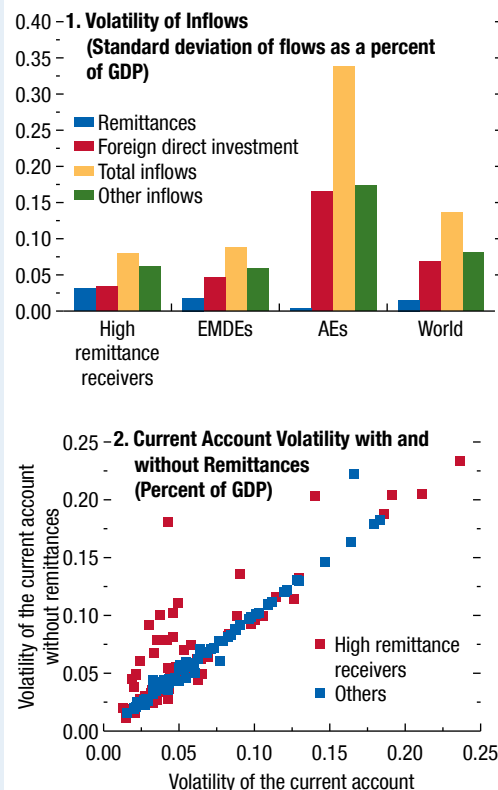
Sources: World Bank Remittances database; and IMF staff calculations.
Note: Total inflows refers to total capital inflows to a country; other inflows refers to flows other than foreign direct investment, portfolio, equity, derivatives, or reserves. Volatility refers to the standard deviation. AEs = advanced economies; EMDEs = emerging market and developing economies.

of variation in income that is smoothed is due to remittances (Figure 1.5.4, panel 1, first bar). In other words, for any extra dollar of income lost (for whatever reason) in the home country, consumption falls by only 63 cents, all else constant. The quantitative importance of remittances also far exceeds that yielded by the financial integration term (as measured by $\beta_3 FI_{it}$ in equation (1.5.1)). Subsequent bars in panel 1 of Figure 1.5.4 show that the effects can be somewhat larger (as a proportion of the total smoothed component) for high-remittance countries, during major country-specific financial shocks (financial crises),

Box 1.5 *(continued)*

Figure 1.5.4. Contribution of Remittances to Consumption Risk Sharing

1. Portion of Total Risks Shared

2. Portion of Total Risks Shared
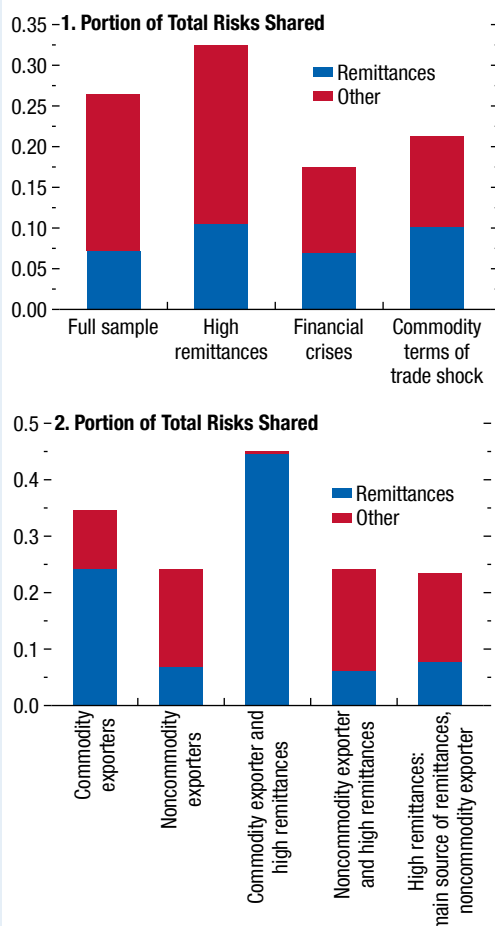
Source: IMF staff calculations.
Note: Estimates of the portion of total risks shared are based on coefficients from panel regressions of idiosyncratic consumption growth on idiosyncratic output growth and its interactions with indicators for remittances and financial integration (Lane and Milesi-Ferretti 2017). High remittance countries refers to those countries with remittance inflows greater than the median of 1.5 percent of GDP over 1990–2014. A financial crisis is defined as either a banking crisis as measured by the interval between the start and the end of a banking crisis from the banking crises database by Laeven and Valencia (2008, 2010, 2012) or an external crisis as defined by Catão and Milesi-Ferretti (2014). A negative commodity terms-of-trade shock is defined as a negative value of the detrended component of a country's commodity terms of trade based on Gruss (2014).

and during cyclical contractions in the commodity terms of trade.

Breaking the sample up by country characteristics reveals that, if the receiving country is a commodity exporter, the contribution of remittances to consumption smoothing is higher than that for noncommodity exporters (Figure 1.5.4, panel 2, first two bars). If the country is a high-remittance receiver and a commodity exporter (third bar), the contribution is overwhelming. Finally, the source country of remittances also matters: if the source country is a noncommodity exporter, the percentage contribution to total consumption smoothing is higher than if the host country is a commodity exporter (comparing the relative portions in the last bar of Figure 1.5.4, panel 2, to that of the second bar of panel 1).[7]

These findings indicate that remittances have played a significant role in consumption smoothing in less financially integrated emerging market and developing economies, particularly during periods of local financial crises and falling commodity prices. The results also indicate that the main destination country of the migrant pool matters: if the remittances-receiving country is a commodity exporter and the remittances-sending country is not, the risks to consumption are more effectively shared.

The overarching conclusion is that international labor market integration can help fill at least some of the consumption smoothing gap caused by the limited role of financial market integration, particularly in poorer countries. Considering such benefits, policy measures that help reduce the cost of remittances (such as those aimed at preserving correspondent banking relationships) and foster international labor market integration—so that remittances can play a fuller role in transferring resources during asymmetric shocks to receiving countries—can significantly enhance worldwide sharing of consumption risk.

---

[7]Through converse reasoning, the contribution of remittances to risk sharing should also be higher than average if the sending country is a commodity exporter and the receiving country is a net commodity importer: in this case, booming commodity prices should increase remittances out of the sending country, mitigating the negative effects of lower income in the receiving country caused by adverse terms of trade (and vice versa). Unfortunately, the remittances data sample for this subcase is small and estimates are bound to be less precise and are therefore not reported.

Special Feature: Commodity Market Developments and Forecasts

Commodity prices have decreased since the release of the April 2017 World Economic Outlook *(WEO). Despite the extension of the production agreement by the Organization of the Petroleum Exporting Countries (OPEC), oil prices declined amid stronger-than-expected shale production in the United States. After declining earlier this year, metal prices have bounced back since June, in line with the improvement in macroeconomic sentiment. Agricultural prices declined on account of large supplies, but weather contributed to volatility in grain markets.*

The IMF's Primary Commodities Price Index declined 5.0 percent between February 2017 and August 2017, the reference periods for the April 2017 and current WEO forecasts, respectively (Figure 1. SF.1, panel 1). While energy and food prices declined substantially, by 6.5 percent and 4.3 percent, respectively, metal prices increased modestly, by 0.8 percent. Oil prices declined amid strong crude oil production in the United States. Natural gas prices fell because of lower demand. Coal prices increased, and remained high.

Oil Market: Eyes on US Production

On May 25, 2017, OPEC agreed to extend to March 2018 the production agreement in place since January this year. The agreement entails a cut of 1.2 million barrels a day (mbd) from October 2016 production. Russia and other non-OPEC countries agreed to stick to current production, implying additional cuts of about 0.6 mbd from the October 2016 level (bringing the total cuts to 1.8 mbd).

Notwithstanding efforts by the oil exporters participating in the production agreement, oil prices had fallen to less than $44 a barrel by late June, the lowest since November 2016, right before the initial production cuts were announced. The main drivers were stronger-than-expected US shale production and stronger-than-expected production recovery in Libya and Nigeria, which are exempt from production cuts. In addition, exports from OPEC countries appeared to be sustained at relatively high levels, even with lower production.

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

Figure 1.SF.1. Commodity Market Developments

1. Commodity Price Indices (2005 = 100) — All commodities, Energy, Food, Metals

2. Brent Futures Curves[1] (US dollars a barrel; expiration dates on *x*-axis) — October 2017 WEO, April 2017 WEO, October 2016 WEO, April 2016 WEO

3. Brent Price Prospects[2] (US dollars a barrel) — Futures; 68 percent confidence interval; 86 percent confidence interval; 95 percent confidence interval

4. Metal Price Indices (Jan. 2, 2014 = 100) — Aluminum, Copper, Iron Ore, Nickel

Sources: Bloomberg L.P.; Thomson Reuters Datastream; IMF, Primary Commodity Price System; and IMF staff estimates.
Note: WEO = *World Economic Outlook.*
[1] WEO future prices are baseline assumptions for each WEO and derived from future prices. October 2017 WEO prices are based on August 15, 2017, closing.
[2] Derived from prices of futures options on August 15, 2017.

Since then, oil prices have rebounded, to about $50 a barrel as of late August, in response to signs of a slowdown in US production growth. US inventories increased dramatically in June 2017, but declined sharply in July and August. The US Energy Information Administration expects US crude production in 2018 to reach 9.9 mbd, exceeding the previous high of 9.6 mbd recorded in 1970. The International Energy Agency expects demand growth to increase from 1.3 mbd in 2016 to 1.6 mbd in 2017 and then to soften to 1.4 mbd in 2018. Hurricane Harvey impacted US refinery capacity in late August and spot gasoline prices increased sharply. However, crude oil prices and medium-term gasoline futures reacted much less, partially because crude inventories were large, and reduced production of refined oil translates into weaker demand for crude oil.

The natural gas price index—an average for Europe, Japan, and the United States—decreased by 9.6 percent between February 2017 and August 2017, reflecting seasonal factors and firm supply from the United States and Russia.[1] Lower oil prices add extra downward pressures in countries where oil-linked pricing is more common. Markets were relatively unfazed when Saudi Arabia and a coalition of countries severed diplomatic ties with Qatar, the world's largest LNG exporter, as exports from Qatar continue.

The coal price index—an average of Australian and South African prices—increased by 16.5 percent from February 2017 to August 2017. This increase follows an initial decline caused by the end of the disruption to coal transportation in Australia due to Cyclone Debbie on March 28, 2017. However, strong demand from China helped prices recover. In addition, sporadic labor disputes in Australian mines provided additional support, while import restrictions by China put downward pressure on prices, especially for lower-quality coals.

Oil futures contracts point to a gradual increase of prices to about $53 a barrel in 2022 (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 $50.3 a barrel in 2017—an increase of 17.4 percent from the 2016 average—and $50.2 a barrel in 2018 (Figure 1.SF.1, panel 3).

Uncertainty remains around the baseline assumptions for oil prices, although risks are balanced. Upside risks include unscheduled outages and geopolitical events, especially in the Middle East and Latin America as the United States put additional sanctions on Venezuela. Although these development could cause oil market disruptions, high inventories—including drilled but uncompleted wells—and the rapid response by shale producers should prevent sharp price rises in the near future. As oil markets focus on the US production/inventory figure, Hurricane Harvey may influence crude markets significantly if it turns out that physical damages to infrastructure or labor force dislocation are larger than initially assessed. Natural gas markets face additional uncertainty due to the Qatar crisis and renewed tensions between Russia and the United States after the United States approved new sanctions against Russia.

Metals: China in the Mix

Metal prices have increased by 0.8 percent between February and August 2017, with considerable variation across commodities. By June the metal price index had reached its lowest point in eight months due to slower demand growth in China and the United States. However, prices rebounded since and continued to do so into August with the improvement in macroeconomic sentiment, especially in China.

Iron ore prices dropped by 35 percent between February and June 2017, mainly driven by expansion of production by big producers in Australia and Brazil attempting to increase market share. Iron ore inventories at Chinese ports reached an all-time high of more than 140 million tons by late June, up 40 percent from the year before, according to data from Thomson Reuters Datastream. With steel prices in China soaring again, however, China's steel producers increased output to a record high of 74 million tons in July. This, in turn, drove up demand for the key ingredient in steelmaking, especially for higher-grade ores that increase the efficiency of steel mills and help lower air pollution. As a result, the price of iron ore rallied by 29 percent from its low in June, reaching an average of $74.6 per ton in August.

Copper prices tumbled between February and early May, after strikes at major mines in Chile and Peru

[1]The IMF's natural gas price index is a weighted average of US Henry Hub prices, Netherland's Title Transfer Facility prices, and Argus Northeast Asia liquefied natural gas (LNG) prices. Up to December 2016, the index is the average of US Henry Hub, German border prices from Russia (long-term contract), and Japanese LNG import prices from Indonesia (Japanese Custom-cleared Crude indexed). The update reflects the increased importance of spot markets.

ended, and the export ban in Indonesia was temporarily lifted. However, with supply from Chile again disrupted and larger-than-expected demand, copper prices rebounded since June. In August, further boosted by China's possible ban by the end of 2018 on imports of scrap metals, copper stood 9.2 percent higher than in February, reaching its highest level since November 2014. The partial resumption of ore exports from Indonesia had also put downward pressure on nickel prices in the first half of 2017. Then, buoyed by solid demand for stainless steel, particularly in China's construction sector, the price of nickel experienced a strong recovery through July and was up by 2.3 percent in August compared with February.

Aluminum prices increased by 9.1 percent from February 2017 to August 2017, supported by a global shortage outside of China that, according to data from the World Bureau of Metal Statistics, began in the fall of 2016. By mid-August 2017, London Metal Exchange warehouse inventories of aluminum were 44 percent lower than in mid-January, hitting their lowest point since 2008. On top of the increase so far, futures prices are pointing to a sharp rise in prices, likely fueled by expectations that China will cut its production capacity because of environmental concerns. Zinc rallied by 4.8 percent between February and August to a near 10-year high, following stock reductions, tight supplies and strong demand for steel galvanization, especially from Chinese infrastructure development.

The IMF metal price index is projected to rise briefly in the second half of 2017, followed by a gentle decline. The annual index for 2017 is expected to increase by 20.6 percent from its 2016 level, reflecting the earlier surge this year, while futures are pointing to a slight decline throughout 2018, with the current projection for the fourth quarter of 2018 0.4 percent below the level for the third quarter of 2017.

Downside risks to the outlook for metal prices include credit tightening and a slowing down of China's property market, which consumes more than half of the world's metal production. However, the Caixin Manufacturing Purchasing Managers' Index increased to 51.6 in August, indicating further expansion of the world's biggest manufacturing sector in the near term. Upside risks also include vigorous capacity cuts in China and the possibility of greater restrictions on international trade, such as those potentially arising from the US Section 232 investigations for steel and aluminum.

Price Swings in Agricultural Markets

The IMF's agricultural price index decreased by 4.9 percent from February 2017 to August 2017, with the sub-indices of food, beverages, and agricultural raw materials decreasing by 4.3 percent, 4.3 percent, and 6.9 percent, respectively. The decline has been fairly uniform across different food groups as well; the indices for cereals lost 4.0 percent, sugar 27.5 percent, vegetable oils 6.5 percent, and beverages 4.3 percent, with only the index for meat seeing gains, of 6.3 percent.

Wheat prices decreased by 5.6 percent from February 2017 to August 2017. As hot, dry weather on the US Great Plains and in France raised doubts about yields in the Northern Hemisphere, prices increased sharply in June. The price rally was followed, however, by a 20.3 percent decline, month-on-month, in August, after the United States Department of Agriculture unexpectedly raised its forecast of grain stocks at the end of the 2017–18 season for reasons that include prospects of a record upcoming Black Sea harvest of wheat.

Maize prices declined too, by 8.8 percent. Weather in the corn-growing regions of the United States did not affect prices much, and corn supplies, including from other major producing countries in South America, remain abundant. Soybean prices trended downward from February because supply from South America remains plentiful following a record harvest in Brazil, even though a stronger *real* discourages farmers from selling their produce. Prospects of a relatively large upcoming US soybean crop increased on good weather conditions in the critical growing month of August, also putting downward pressure on prices.

Palm oil prices fell by 12.0 percent from February 2017 to August 2017, as production in Malaysia and Indonesia continued to rebound from the 2015–16 El Niño, and are expected to increase further, partly because of seasonal factors. Indeed, palm oil future curves remain in "backwardation," indicating that supply is expected to be relatively more abundant in the future. With China continuing to sell off its reserves, and the upcoming US crop not severely affected by Hurricane Harvey, cotton prices declined by 6.8 percent between February 2017 and August 2017. Furthermore, output in the 2017–18 season is expected to be buoyant in major producers, including China, India, Pakistan, and the United States.

Pork prices increased substantially up to July amid stronger demand and tighter supplies. Following increases in global supplies, prices have slumped,

although they still stood 10.1 percent higher in August compared to February this year (based on monthly averages). While supplies are expected to increase further in the second half of 2017, strong global demand implies that markets are expected to clear at higher year-over-year prices. Similarly, the price of beef climbed steadily, by 2.4 percent, because export demand for red meat was stronger than expected and leaner cattle contributed to weaker US supply growth. As the number of cattle on US feedlots has increased unexpectedly during summer, prices are expected to soften in the second half of this year.

Projections for grain prices have been revised substantially downward because concerns over hot, dry weather that sparked a rally in grain markets in June this year have waned, and forecasts for grain stocks at the end of the 2017–18 season increased in August. Annual food prices are now expected to increase by 3.6 percent in 2017 and an additional 1.1 percent in 2018. Food prices are expected to decline slightly again for the years thereafter for reasons that include potentially better supply conditions for some commodities.

Weather disruptions and variability are an upside risk to the forecast for agricultural prices. As of September 2017, there is an increasing chance (about 55 percent to 60 percent) of a La Niña onset during the Northern Hemisphere fall and winter of 2017–18. The increased use by governments of agricultural support policies is another upside risk. Downside risks may arise if China sells more than anticipated from its large reserves of grains, sugar, and cotton.

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	
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Europe	**2.1**	**2.5**	**2.2**	**0.9**	**2.5**	**2.4**	**2.2**	**2.4**	**2.3**	. . .	. . .	. . .
Advanced Europe	**1.8**	**2.1**	**1.9**	**0.4**	**1.6**	**1.6**	**2.7**	**2.9**	**2.9**	**8.7**	**7.9**	**7.6**
Euro Area[4],[5]	1.8	2.1	1.9	0.2	1.5	1.4	3.5	3.1	3.0	10.0	9.2	8.7
Germany	1.9	2.0	1.8	0.4	1.6	1.5	8.3	8.1	7.7	4.2	3.8	3.7
France	1.2	1.6	1.8	0.3	1.2	1.3	−1.0	−1.1	−0.8	10.0	9.5	9.0
Italy	0.9	1.5	1.1	−0.1	1.4	1.2	2.6	2.7	2.3	11.7	11.4	11.0
Spain	3.2	3.1	2.5	−0.2	2.0	1.5	1.9	1.9	2.0	19.6	17.1	15.6
Netherlands	2.2	3.1	2.6	0.1	1.3	1.4	8.5	10.0	10.0	5.9	5.1	4.9
Belgium	1.2	1.6	1.6	1.8	2.2	1.5	−0.4	−0.3	0.0	7.9	7.5	7.3
Austria	1.5	2.3	1.9	1.0	1.6	1.8	1.7	2.1	2.2	6.0	5.4	5.3
Greece	0.0	1.8	2.6	0.0	1.2	1.3	−0.6	−0.2	−0.1	23.6	22.3	20.7
Portugal	1.4	2.5	2.0	0.6	1.6	2.0	0.7	0.4	0.3	11.1	9.7	9.0
Ireland	5.1	4.1	3.4	−0.2	0.4	1.5	3.3	3.4	3.5	7.9	6.4	5.9
Finland	1.9	2.8	2.3	0.4	0.8	1.2	−1.1	0.4	0.4	8.8	8.7	8.1
Slovak Republic	3.3	3.3	3.7	−0.5	1.2	1.4	−0.7	0.3	0.2	9.6	8.1	7.5
Lithuania	2.3	3.5	3.5	0.7	3.5	2.0	−0.9	−1.6	−1.4	7.9	7.0	6.5
Slovenia	3.1	4.0	2.5	−0.1	1.6	1.8	5.2	5.0	4.9	8.0	6.8	6.4
Luxembourg	4.2	3.9	3.6	0.0	1.2	1.3	4.7	4.7	4.9	6.4	5.9	5.5
Latvia	2.0	3.8	3.9	0.1	3.0	3.0	1.5	−0.3	−1.5	9.6	9.0	8.7
Estonia	2.1	4.0	3.7	0.8	3.8	3.4	1.9	1.8	1.4	6.8	8.4	9.0
Cyprus	2.8	3.4	2.6	−1.2	0.8	0.7	−5.3	−3.8	−2.7	13.0	11.8	10.7
Malta	5.5	5.1	4.4	0.9	1.3	1.6	7.9	8.9	8.8	4.7	4.4	4.5
United Kingdom[5]	1.8	1.7	1.5	0.7	2.6	2.6	−4.4	−3.6	−3.3	4.9	4.4	4.4
Switzerland	1.4	1.0	1.3	−0.4	0.5	0.6	10.5	9.9	9.4	3.3	3.0	3.0
Sweden	3.2	3.1	2.4	1.1	1.6	1.6	4.5	3.9	3.7	7.0	6.6	6.3
Norway	1.1	1.4	1.6	3.6	2.1	2.0	5.0	5.5	5.7	4.7	4.0	3.8
Czech Republic	2.6	3.5	2.6	0.7	2.3	1.8	1.1	0.6	0.1	4.0	2.8	3.0
Denmark	1.7	1.9	1.8	0.3	1.0	1.4	7.9	7.3	7.0	6.2	5.8	5.8
Iceland	7.2	5.5	3.3	1.7	1.8	2.6	7.9	6.2	6.1	3.0	2.8	3.2
San Marino	1.0	1.2	1.3	0.6	0.9	1.0	. . .	. . .	. . .	8.6	8.0	7.4
Emerging and Developing Europe[6]	**3.1**	**4.5**	**3.5**	**3.3**	**6.0**	**5.7**	**−1.8**	**−2.4**	**−2.5**	. . .	. . .	. . .
Turkey	3.2	5.1	3.5	7.8	10.9	9.3	−3.8	−4.6	−4.6	10.9	11.2	10.7
Poland	2.6	3.8	3.3	−0.6	1.9	2.3	−0.2	−1.0	−1.2	6.2	4.8	4.0
Romania	4.8	5.5	4.4	−1.6	1.1	3.3	−2.3	−3.0	−2.9	5.9	5.3	5.2
Hungary	2.0	3.2	3.4	0.4	2.5	3.2	5.5	4.8	4.2	5.1	4.4	4.3
Bulgaria[5]	3.4	3.6	3.2	−1.3	1.1	1.4	4.2	2.5	1.9	7.7	6.6	6.4
Serbia	2.8	3.0	3.5	1.1	3.4	3.0	−4.0	−4.0	−3.9	15.9	16.0	15.6
Croatia	3.0	2.9	2.7	−1.1	1.1	1.2	2.6	3.8	3.0	15.0	13.9	13.5

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]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	
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Asia	**5.4**	**5.6**	**5.5**	**2.3**	**2.3**	**2.8**	**2.5**	**2.1**	**1.9**	. . .	. . .	. . .
Advanced Asia	**1.7**	**2.2**	**1.7**	**0.5**	**1.0**	**1.2**	**4.5**	**4.3**	**4.2**	**3.6**	**3.4**	**3.4**
Japan	1.0	1.5	0.7	−0.1	0.4	0.5	3.8	3.6	3.8	3.1	2.9	2.9
Korea	2.8	3.0	3.0	1.0	1.9	1.9	7.0	5.6	5.4	3.7	3.8	3.6
Australia	2.5	2.2	2.9	1.3	2.0	2.2	−2.6	−1.6	−2.4	5.7	5.6	5.4
Taiwan Province of China	1.5	2.0	1.9	1.4	1.0	1.4	14.0	13.8	13.9	3.9	3.8	3.8
Singapore	2.0	2.5	2.6	−0.5	0.9	1.3	19.0	19.6	19.5	2.1	2.2	2.1
Hong Kong SAR	2.0	3.5	2.7	2.6	2.0	2.2	4.6	3.0	3.1	2.7	2.6	2.6
New Zealand	3.6	3.5	3.0	0.6	2.2	2.0	−2.8	−3.6	−3.8	5.1	4.9	4.6
Macao SAR	−2.1	13.4	7.0	2.4	1.5	2.2	27.4	33.0	34.5	1.9	2.0	2.0
Emerging and Developing Asia	**6.4**	**6.5**	**6.5**	**2.8**	**2.6**	**3.2**	**1.4**	**0.9**	**0.7**	. . .	. . .	. . .
China	6.7	6.8	6.5	2.0	1.8	2.4	1.7	1.4	1.2	4.0	4.0	4.0
India[4]	7.1	6.7	7.4	4.5	3.8	4.9	−0.7	−1.4	−1.5	. . .	. . .	. . .
ASEAN-5	**4.9**	**5.2**	**5.2**	**2.4**	**3.3**	**3.1**	**2.1**	**1.6**	**1.1**	. . .	. . .	. . .
Indonesia	5.0	5.2	5.3	3.5	4.0	3.9	−1.8	−1.7	−1.8	5.6	5.4	5.2
Thailand	3.2	3.7	3.5	0.2	0.6	1.0	11.5	10.1	8.1	0.8	0.7	0.7
Malaysia	4.2	5.4	4.8	2.1	3.8	2.9	2.4	2.4	2.2	3.5	3.4	3.2
Philippines	6.9	6.6	6.7	1.8	3.1	3.0	0.2	−0.1	−0.3	5.5	6.0	5.5
Vietnam	6.2	6.3	6.3	2.7	4.4	4.0	4.1	1.3	1.4	2.3	2.3	2.3
Other Emerging and Developing Asia[5]	**5.6**	**6.3**	**6.3**	**5.2**	**5.5**	**5.4**	**−0.9**	**−1.9**	**−2.5**	. . .	. . .	. . .
Memorandum												
Emerging Asia[6]	**6.5**	**6.5**	**6.5**	**2.7**	**2.5**	**3.1**	**1.5**	**1.0**	**0.8**	. . .	. . .	. . .

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	
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
North America	**1.5**	**2.2**	**2.2**	**1.4**	**2.4**	**2.3**	**−2.5**	**−2.4**	**−2.6**	. . .	. . .	. . .
United States	1.5	2.2	2.3	1.3	2.1	2.1	−2.4	−2.4	−2.6	4.9	4.4	4.1
Canada	1.5	3.0	2.1	1.4	1.6	1.8	−3.3	−3.4	−2.9	7.0	6.5	6.3
Mexico	2.3	2.1	1.9	2.8	5.9	3.8	−2.2	−1.7	−2.0	3.9	3.6	3.7
Puerto Rico[4]	−2.6	−2.8	−2.5	−0.3	1.1	0.9	. . .	. . .	. . .	11.8	11.5	11.6
South America[5]	**−2.6**	**0.6**	**1.6**	. . .	. . .	. . .	**−1.8**	**−1.9**	**−2.3**	. . .	. . .	. . .
Brazil	−3.6	0.7	1.5	8.7	3.7	4.0	−1.3	−1.4	−1.8	11.3	13.1	11.8
Argentina	−2.2	2.5	2.5	. . .	26.9	17.8	−2.7	−3.6	−3.7	8.5	8.1	7.7
Colombia	2.0	1.7	2.8	7.5	4.3	3.3	−4.3	−3.8	−3.6	9.2	9.3	9.2
Venezuela	−16.5	−12.0	−6.0	254.4	652.7	2,349.3	−1.6	−0.4	−1.3	20.6	26.4	29.8
Chile	1.6	1.4	2.5	3.8	2.3	2.7	−1.4	−2.3	−2.8	6.5	7.0	6.8
Peru	4.0	2.7	3.8	3.6	3.2	2.3	−2.7	−1.5	−1.6	6.7	6.7	6.7
Ecuador	−1.5	0.2	0.6	1.7	0.7	0.7	1.4	−0.7	−1.6	5.2	5.1	5.3
Bolivia	4.3	4.2	4.0	3.6	3.2	5.1	−5.7	−4.7	−4.8	4.0	4.0	4.0
Uruguay	1.5	3.5	3.1	9.6	6.1	6.3	−0.1	−0.4	−0.8	7.9	7.3	7.3
Paraguay	4.1	3.9	4.0	4.1	3.5	4.0	1.7	1.1	0.4	6.0	6.5	6.2
Central America[6]	**3.7**	**3.8**	**3.9**	**2.1**	**2.8**	**3.2**	**−2.9**	**−2.9**	**−2.8**	. . .	. . .	. . .
Caribbean[7]	**3.4**	**2.8**	**4.4**	**2.6**	**3.8**	**3.8**	**−4.1**	**−4.1**	**−4.3**	. . .	. . .	. . .
Memorandum												
Latin America and the Caribbean[8]	−0.9	1.2	1.9	5.6	4.2	3.6	−2.0	−2.0	−2.3	. . .	. . .	. . .
East Caribbean Currency Union[9]	2.6	2.6	2.8	−0.7	1.3	1.4	−5.4	−6.6	−7.4	. . .	. . .	. . .

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	
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Commonwealth of Independent States[4]	**0.4**	**2.1**	**2.1**	**8.3**	**5.8**	**5.2**	**0.0**	**0.9**	**1.3**	. . .	. . .	. . .
Net Energy Exporters	**0.3**	**2.1**	**2.0**	**7.9**	**5.2**	**4.7**	**0.5**	**1.6**	**2.0**	. . .	. . .	. . .
Russia	−0.2	1.8	1.6	7.0	4.2	3.9	2.0	2.8	3.2	5.5	5.5	5.5
Kazakhstan	1.1	3.3	2.8	14.6	7.3	6.5	−6.4	−5.3	−3.8	5.0	5.0	5.0
Uzbekistan	7.8	6.0	6.0	8.0	13.0	12.7	0.7	0.9	0.3	. . .	. . .	. . .
Azerbaijan	−3.1	−1.0	1.3	12.4	12.0	8.0	−3.6	1.9	2.5	6.0	6.0	6.0
Turkmenistan	6.2	6.5	6.3	3.6	6.0	6.2	−21.0	−15.4	−14.3	. . .	. . .	. . .
Net Energy Importers	**1.2**	**2.1**	**2.7**	**11.0**	**10.0**	**8.3**	**−4.7**	**−4.9**	**−4.5**	. . .	. . .	. . .
Ukraine	2.3	2.0	3.2	13.9	12.8	10.0	−4.1	−3.3	−3.0	9.3	9.5	9.3
Belarus	−2.6	0.7	0.7	11.8	8.0	7.5	−3.6	−5.3	−4.6	1.0	1.0	1.0
Georgia	2.7	4.0	4.2	2.1	6.0	3.0	−13.3	−11.9	−10.7	11.8	. . .	. . .
Armenia	0.2	3.5	2.9	−1.4	1.9	3.5	−2.3	−3.6	−3.2	18.8	18.9	18.9
Tajikistan	6.9	4.5	4.0	5.9	8.9	8.0	−3.8	−6.3	−6.2	. . .	. . .	. . .
Kyrgyz Republic	3.8	3.5	3.8	0.4	3.8	5.1	−9.7	−11.6	−12.0	7.5	7.4	7.3
Moldova	4.3	4.0	3.7	6.4	6.5	5.3	−3.8	−4.0	−4.0	4.2	4.3	4.2
Memorandum												
Caucasus and Central Asia[5]	2.5	3.6	3.7	10.4	8.8	7.8	−6.4	−4.9	−4.2	. . .	. . .	. . .
Low-Income CIS Countries[6]	6.1	5.2	5.2	5.8	10.0	9.6	−2.5	−2.7	−3.1	. . .	. . .	. . .
Net Energy Exporters Excluding Russia	2.4	3.5	3.7	11.6	9.3	8.2	−6.2	−4.4	−3.6	. . .	. . .	. . .

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 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	
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Middle East, North Africa, Afghanistan, and Pakistan	**5.0**	**2.6**	**3.5**	**5.1**	**6.8**	**7.7**	**−4.1**	**−1.9**	**−1.6**	. . .	. . .	. . .
Oil Exporters[4]	**5.6**	**1.7**	**3.0**	**4.6**	**4.3**	**6.0**	**−3.6**	**−0.4**	**−0.2**	. . .	. . .	. . .
Saudi Arabia	1.7	0.1	1.1	3.5	−0.2	5.0	−4.3	0.6	0.4	5.6	. . .	. . .
Iran	12.5	3.5	3.8	9.0	10.5	10.1	4.1	5.1	5.9	12.5	12.4	12.4
United Arab Emirates	3.0	1.3	3.4	1.8	2.1	2.9	2.4	2.1	2.1	. . .	. . .	. . .
Algeria	3.3	1.5	0.8	6.4	5.5	4.4	−16.5	−13.0	−10.8	10.5	11.7	13.2
Iraq	11.0	−0.4	2.9	0.4	2.0	2.0	−8.7	−6.3	−6.7	. . .	. . .	. . .
Qatar	2.2	2.5	3.1	2.7	0.9	4.8	−4.9	2.3	1.0	. . .	. . .	. . .
Kuwait	2.5	−2.1	4.1	3.5	2.5	2.7	−4.5	−0.6	−1.4	2.1	2.1	2.1
Oil Importers[5]	**3.6**	**4.3**	**4.4**	**6.2**	**12.1**	**11.2**	**−5.3**	**−5.3**	**−4.8**	. . .	. . .	. . .
Egypt	4.3	4.1	4.5	10.2	23.5	21.3	−6.0	−5.9	−3.8	12.7	12.2	11.5
Pakistan	4.5	5.3	5.6	2.9	4.1	4.8	−1.7	−4.0	−4.9	6.0	6.0	6.1
Morocco	1.2	4.8	3.0	1.6	0.9	1.6	−4.4	−4.0	−2.9	9.4	9.3	9.5
Sudan	3.0	3.7	3.6	17.8	26.9	19.0	−5.6	−1.9	−2.0	20.6	19.6	18.6
Tunisia	1.0	2.3	3.0	3.7	4.5	4.4	−9.0	−8.7	−8.4	14.0	13.0	12.0
Lebanon	1.0	1.5	2.0	−0.8	3.1	2.5	−18.6	−18.0	−16.8	. . .	. . .	. . .
Jordan	2.0	2.3	2.5	−0.8	3.3	1.5	−9.3	−8.4	−8.3	15.3	. . .	. . .
Memorandum												
Middle East and North Africa	5.1	2.2	3.2	5.4	7.1	8.1	−4.4	−1.7	−1.3	. . .	. . .	. . .
Israel[6]	4.0	3.1	3.4	−0.5	0.2	0.5	3.6	4.1	3.1	4.8	4.3	4.5
Maghreb[7]	2.2	5.4	3.8	5.4	5.4	5.4	−12.1	−8.5	−5.6	. . .	. . .	. . .
Mashreq[8]	3.9	3.8	4.2	8.7	20.7	18.7	−7.8	−8.2	−6.4	. . .	. . .	. . .

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	
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Sub-Saharan Africa	**1.4**	**2.6**	**3.4**	**11.3**	**11.0**	**9.5**	**−4.2**	**−3.4**	**−3.6**	. . .	. . .	. . .
Oil Exporters[4]	**−1.9**	**0.6**	**1.6**	**18.8**	**18.1**	**14.7**	**−2.0**	**−0.3**	**−0.6**	. . .	. . .	. . .
Nigeria	−1.6	0.8	1.9	15.7	16.3	14.8	0.7	1.9	1.0	13.4	. . .	. . .
Angola	−0.7	1.5	1.6	32.4	30.9	20.6	−5.1	−4.8	−4.5	. . .	. . .	. . .
Gabon	2.1	1.0	2.7	2.1	2.5	2.5	−10.2	−9.3	−6.7	. . .	. . .	. . .
Chad	−6.4	0.6	2.4	−1.1	0.2	1.9	−9.2	−2.0	−2.8	. . .	. . .	. . .
Republic of Congo	−2.8	−3.6	2.8	3.6	−0.4	−1.1	−70.1	−15.9	2.5	. . .	. . .	. . .
Middle-Income Countries[5]	**2.0**	**2.5**	**3.2**	**6.8**	**5.3**	**5.1**	**−3.4**	**−3.2**	**−3.5**	. . .	. . .	. . .
South Africa	0.3	0.7	1.1	6.3	5.4	5.3	−3.3	−2.9	−3.3	26.7	27.6	28.3
Ghana	3.5	5.9	8.9	17.5	11.8	9.0	−6.7	−5.8	−5.4	. . .	. . .	. . .
Côte d'Ivoire	7.7	7.6	7.3	0.7	1.0	2.0	−1.1	−2.9	−2.8	. . .	. . .	. . .
Cameroon	4.7	4.0	4.6	0.9	0.7	1.1	−3.6	−3.6	−3.5	. . .	. . .	. . .
Zambia	3.4	4.0	4.5	17.9	6.8	7.4	−4.4	−3.6	−2.8	. . .	. . .	. . .
Senegal	6.7	6.8	7.0	0.9	2.1	2.2	−5.3	−5.1	−5.2	. . .	. . .	. . .
Low-Income Countries[6]	**5.3**	**5.6**	**5.9**	**6.6**	**8.8**	**8.2**	**−8.3**	**−7.9**	**−8.3**	. . .	. . .	. . .
Ethiopia	8.0	8.5	8.5	7.3	8.1	8.0	−9.9	−8.3	−7.4	. . .	. . .	. . .
Kenya	5.8	5.0	5.5	6.3	8.0	5.2	−5.2	−6.1	−7.0	. . .	. . .	. . .
Tanzania	7.0	6.5	6.8	5.2	5.4	5.0	−5.6	−5.6	−6.5	. . .	. . .	. . .
Uganda	2.3	4.4	5.2	5.5	5.8	5.6	−4.3	−5.6	−7.2	. . .	. . .	. . .
Madagascar	4.2	4.3	5.3	6.7	7.8	6.8	0.8	−4.7	−5.3	. . .	. . .	. . .
Democratic Republic of the Congo	2.4	2.8	3.0	18.2	41.7	44.0	−3.4	−4.6	−2.1	. . .	. . .	. . .
Memorandum												
Sub-Saharan Africa Excluding South Sudan	1.5	2.7	3.4	10.4	10.5	9.3	−4.2	−3.4	−3.6	. . .	. . .	. . .

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 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; purchasing power parity)

	Average 1999–2008	2009	2010	2011	2012	2013	2014	2015	2016	Projections 2017	2018	2022
World Output	**2.7**	**−1.6**	**4.0**	**3.0**	**2.0**	**2.2**	**2.3**	**2.1**	**1.9**	**2.3**	**2.5**	**2.5**
Advanced Economies	**1.8**	**−4.0**	**2.5**	**1.1**	**0.7**	**0.8**	**1.6**	**1.7**	**1.1**	**1.7**	**1.6**	**1.3**
United States	1.5	−3.6	1.7	0.9	1.5	1.0	1.8	2.1	0.8	1.5	1.7	1.1
Euro Area[1]	1.7	−4.9	1.8	1.3	−1.1	−0.5	1.1	1.6	1.4	2.0	1.8	1.4
Germany	1.7	−5.2	4.2	3.7	0.5	0.3	1.5	0.6	0.9	1.9	1.7	1.3
France	1.4	−3.5	1.5	1.6	−0.3	0.1	0.4	0.6	0.8	1.1	1.3	1.4
Italy	0.9	−6.1	1.2	0.2	−3.2	−2.3	−0.3	0.8	1.1	1.3	1.1	0.9
Spain	2.1	−4.4	−0.4	−1.4	−3.0	−1.3	1.7	3.3	3.3	3.2	2.7	1.8
Japan	0.9	−5.3	4.2	−0.3	1.7	2.2	0.5	1.2	1.0	1.7	0.9	1.0
United Kingdom	2.0	−5.0	1.1	0.7	0.6	1.3	2.3	1.4	1.0	1.1	0.8	1.1
Canada	1.9	−4.1	1.9	2.1	0.6	1.3	1.4	0.0	0.3	1.9	1.1	0.7
Other Advanced Economies[2]	3.3	−1.9	5.0	2.5	1.2	1.6	2.1	1.2	1.4	1.7	1.7	1.7
Emerging Market and Developing Economies	**4.5**	**1.1**	**5.9**	**4.9**	**3.7**	**3.7**	**3.2**	**2.8**	**2.8**	**3.2**	**3.5**	**3.6**
Commonwealth of Independent States	7.2	−6.9	4.3	4.9	3.2	2.0	1.5	−2.6	0.0	1.8	1.8	2.1
Russia	7.2	−7.8	4.5	5.0	3.6	1.7	0.7	−2.8	−0.2	1.8	1.7	1.7
Excluding Russia	7.6	−3.9	4.4	5.1	2.6	3.4	2.7	−1.6	1.2	2.2	2.6	3.6
Emerging and Developing Asia	6.7	6.4	8.5	6.7	5.9	5.9	5.8	5.7	5.4	5.4	5.4	5.2
China	9.4	8.7	10.1	9.0	7.4	7.3	6.7	6.4	6.1	6.1	5.9	5.1
India[3]	5.2	6.9	8.7	5.2	4.1	5.0	6.1	6.6	5.7	5.3	6.0	6.8
ASEAN-5[4]	3.6	1.0	5.5	3.2	4.7	3.7	3.2	3.5	3.6	3.9	3.9	4.0
Emerging and Developing Europe	3.8	−3.5	4.0	6.0	2.0	4.3	3.4	4.2	2.7	4.1	3.1	2.8
Latin America and the Caribbean	1.9	−3.1	4.7	3.4	1.8	1.8	0.1	−1.1	−2.1	0.1	0.8	1.7
Brazil	2.1	−1.2	6.5	3.0	1.0	2.1	−0.4	−4.6	−4.4	0.0	0.7	1.4
Mexico	1.4	−6.0	3.8	2.8	2.8	0.2	1.1	1.6	1.2	1.1	0.9	1.8
Middle East, North Africa, Afghanistan, and Pakistan	1.9	−1.2	2.4	4.0	1.0	0.3	0.1	0.5	2.7	0.0	1.5	1.9
Saudi Arabia	0.4	−5.3	1.3	7.1	2.5	−0.1	1.1	3.3	−0.6	−1.8	−0.9	0.0
Sub-Saharan Africa	2.6	1.1	4.2	2.5	1.2	2.6	2.4	0.7	−1.3	0.0	0.7	1.2
Nigeria	4.6	5.5	8.3	2.1	1.5	2.6	3.5	−0.1	−4.2	−1.9	−0.8	−1.0
South Africa	2.7	−2.9	1.6	1.8	0.7	1.0	0.2	−0.3	−1.3	−0.9	−0.5	0.6
Memorandum												
European Union	2.1	−4.6	1.9	1.5	−0.6	0.1	1.5	1.9	1.6	2.1	1.9	1.5
Low-Income Developing Countries	3.4	3.5	5.2	3.7	2.4	3.8	3.7	2.2	1.2	2.2	3.0	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]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.

References

Aaronson, Stephanie, Tomaz Cajner, Bruce Fallick, Felix Galbis-Reig, Christopher Smith, and William Wascher. 2014. "Labor Force Participation: Recent Developments and Future Prospects." *Brookings Papers on Economic Activity*, Fall.

Abiad, Abdul D., Davide Furceri, and Petia Topalova. 2016. "The Macroeconomic Effects of Public Investment: Evidence from Advanced Economies." *Journal of Macroeconomics* 50 (C): 224–40.

Adams, Richard, and John Page. 2005. "Do International Migration and Remittances Reduce Poverty in Developing Countries?" *World Development* 33 (10): 1645–69.

Adler, Gustavo, Romain Duval, Davide Furceri, Sinem Kılıç Çelik, Ksenia Koloskova, and Marcos Poplawski-Ribeiro. 2017. "Gone with the Headwinds: Global Productivity." IMF Staff Discussion Note 17/04, International Monetary Fund, Washington, DC.

Adler, Gustavo, Nicolas Magud, and Alejandro Werner. 2017. "Terms-of-Trade Cycles and External Adjustment." IMF Working Paper 17/29, International Monetary Fund, Washington, DC.

Aiyar, Shekhar, Christian Ebeke, and Xiaobo Shao. 2016. "The Impact of Workforce Aging on European Productivity." IMF Working Paper 16/238, International Monetary Fund, Washington, DC.

Baldwin, Richard. 2016. "The Great Convergence: Information Technology and the New Globalization." Cambridge, MA, Belknap Press.

Balleer, Almut, Ramón Gómez-Salvador, and Jarkko Turunen. 2009. "Labor Force Participation in the Euro Area: A Cohort Based Analysis." European Central Bank Working Paper 1049, European Central Bank, Frankfurt.

Banerji, Angana, Valerio Crispolti, Era Dabla-Norris, Romain A. Duval, Christian H. Ebeke, Davide Furceri, Takuji Komatsuzaki, and Tigran Poghosyan. 2017. "Labor and Product Market Reforms in Advanced Economies: Fiscal Costs, Gains, and Support." IMF Staff Discussion Note 17/03, International Monetary Fund, Washington, DC.

Beaton, Kimberly, Serhan Cevik, and Reza Yousefi. 2017. "Smooth Operator: Remittances and Fiscal Shocks." IMF Working Paper 17/165, International Monetary Fund, Washington, DC.

Beaton, Kimberly, Svetlana Cerovic, Misael Galdamez, Metodij Hadzi-Vaskov, Franz Loyola, Zsoka Koczan, Bogdan Lissovolik, Jan Martijn, Yulia Ustyugova, and Joyce Wong. 2017. "Migration and Remittances in Latin America and the Caribbean: Engines of Growth and Macroeconomic Stabilizers?" IMF Working Paper 17/144, International Monetary Fund, Washington, DC.

Bems, Rudolfs, Robert C. Johnson, and Kei-Mu Yi. 2010. "Demand Spillovers and the Collapse of Trade in the Global Recession." *IMF Economic Review* 58 (2): 295–326.

Blau, Francine D., and Lawrence M. Kahn. 2013. "Female Labor Supply: Why is the US Falling Behind?" Institute of Labor Economics, Discussion Paper 7140.

Bugamelli, Matteo, and Francesco Paterno. 2009. "Output Growth Volatility and Remittances," *Economica*, (78) 480–500.

Caldara, Dario, and Matteo Iacoviello. 2017. "Measuring Geopolitical Risk." Working Paper, Board of Governors of the Federal Reserve Board, Washington, DC.

Canon, Maria, Marianna Kudlyak, and Yang Liu. 2015. "Youth Labor Force Participation Continues to Fall, but It Might Be for a Good Reason." Federal Reserve Bank of St. Louis Regional Economist, January.

Canova, Fabio. 2004. "Testing for Convergence Clubs in Income Per Capita: A Predictive Density Approach." *International Economic Review* 45 (1): 49–77.

Catão, Luis, and Gian M. Milesi-Ferretti. 2014. "External Liabilities and Crises." *Journal of International Economics* (94) 18–32.

Catão, Luis, and Roberto Chang. 2017. "Financial Frictions and Risk Sharing in Small Open Economies." Unpublished.

Chami, Ralph, Dalia S. Hakura, and Peter Montiel. 2009. "Remittances: An Automatic Output Stabilizer?" IMF Working Paper 09/91, International Monetary Fund, Washington, DC.

Combes, Jean-Louis, and Christian Ebeke. 2011. "Remittances and Household Consumption Instability in Developing Countries." *World Development* 39 (7): 1076–89.

Costinot, Arnaud, and Andrés Rodríguez-Clare. 2013. "Trade Theory with Numbers: Quantifying the Consequences of Globalization." NBER Working Paper 18896, National Bureau of Economic Research, Cambridge, MA.

Council of Economic Advisors. 2014. "The Labor Force Participation Rate since 2007: Causes and Policy Implications." Council of Economic Advisors, Washington, DC.

———. 2016. "The Long-Term Decline in Prime-Age Male Labor Force Participation." Council of Economic Advisors, Washington, DC.

Daly, Mary C., Bart Hobijn, and Joseph Pedtke, 2017. "The Good News on Wage Growth." San Francisco Fed Blog, Federal Reserve Bank of San Francisco.

De, Supriyo, Ergys Islamaj, Ayhan Kose, and S. Reza Yousefi. 2016. "Remittances over the Business Cycle: Theory and Evidence." World Bank KNOMAD Working Paper 11, World Bank, Washington, DC.

Desdoigts, Alain. 1999. "Patterns of Economic Development and the Formation of Clubs." *Journal of Economic Growth* 4 (3): 305–30.

Durlauf, Steven N., and Paul Johnson. 1995. "Multiple Regimes and Cross-Country Growth Behavior." *Journal of Applied Econometrics* 10 (4): 365–84.

Durlauf, Steven N., and Danny T. Quah. 1999. "The New Empirics of Economic Growth." In *Handbook of Macroeconomics* (1A) edited by John Taylor and Michael Woodford. Amsterdam, North-Holland.

Dvorkin, Maximiliano, and Hannah Shell. 2015. "A Cross-Country Comparison of Labor Force Participation." *Economic Synopses* 17 (3–4).

Fajgelbaum, Pablo, and Amit Khandelwal. 2016. "Measuring the Unequal Gains from Trade." *Quarterly Journal of Economics* 131 (3): 1113–80.

Feyrer, James. 2007. "Demographics and Productivity." *Review of Economics and Statistics* 89 (1): 100–09.

Frankel, Jeffrey. 2011. "Are Bilateral Remittances Countercyclical?" *Open Economies Review* 22 (1):1–16.

Giuliano, Paola, and Marta Ruiz-Arranz. 2009. "Remittances, Financial Development, and Growth." *Journal of Development Economics* 90 (1): 144–52.

Gruss, Bertrand. 2014. "After the Boom—Commodity Prices and Economic Growth in Latin America and the Caribbean." IMF Working Paper 14/154, International Monetary Fund, Washington, DC.

Hadzi-Vaskov, Metodij. 2006. "Workers' Remittances and International Risk-Sharing." Tjalling C. Koopmans Research Institute Discussion Paper 06–19, University of Utrecht.

International Monetary Fund (IMF). 2013a. "Macroeconomic Issues in Small States: Implications for Fund Engagement." Washington, DC.

———. 2013b. "Staff Guidance Note on the Application of the Joint Bank-Fund Debt Sustainability Framework for Low-Income Countries." Washington, DC.

———. 2014. "Is It Time for an Infrastructure Push? The Macroeconomic Effects of Public Investment." Chapter 3 of the October *World Economic Outlook*, Washington, DC.

———. 2014. "Macroeconomic Developments in Low-Income Developing Countries." IMF Policy Paper, Washington, DC.

———. 2016a. "External Sector Report." Washington, DC.

———. 2016b. "Small States' Resilience to Natural Disasters and Climate Change—Role of the IMF." IMF Policy Paper, Washington, DC.

———. 2017a. "Article IV Consultation with the United States of America." Concluding Statement of the IMF Mission, Washington, DC.

———. 2017b. "External Adjustment to Terms-of-Trade Shifts." Chapter 3 of the *Western Hemisphere Regional Economic Outlook*. April, Washington, DC.

———. 2017c. "External Sector Report." Washington, DC.

———. 2017d. Forthcoming. "G20 Report on Strong, Sustainable, and Balanced Growth." Washington, DC.

———, World Bank, and World Trade Organization. 2017. "Making Trade an Engine of Growth for All." Policy Papers, Washington, DC.

Jongwanich, Juthathip. 2007. "Workers' Remittances, Economic Growth and Poverty in Developing Asia and the Pacific Countries." UNESCAP Working Paper 07/01, United Nations Economic and Social Commission for Asia and the Pacific, Bangkok.

Kalemli-Ozcan, Sebnem, Bent E. Sorensen, and Oved Yosha. 2003. "Risk Sharing and Industrial Specialization: Regional and International Evidence." *American Economic Review* 93 (3): 903–18.

Koepke, Robin. 2015. "What Drives Capital Flows to Emerging Markets? A Survey of the Empirical Literature."

IIF Working Paper, Institute of International Finance, Washington, DC.

Koopman, Robert, Zhi Wang, and Shang-Jin Wei. 2014. "Tracing Value-Added and Double Counting in Gross Exports." *American Economic Review* 104 (2): 459–94.

Kose, M. Ayhan, Eswar S. Prasad, and Marco E. Terrones. 2009. "Does Financial Globalization Promote Risk Sharing?" *Journal of Development Economics* 89 (2): 258–70.

Krause, Eleanor, and Isabel Sawhill. 2017. "What We Know and Don't Know about Declining Labor Force Participation: A Review." Center on Children and Families at Brookings, The Brookings Institution, Washington, DC.

Laeven, Luc, and Fabian Valencia. 2008. "Systemic Banking Crises: A New Database." IMF Working Paper 08/224, International Monetary Fund, Washington, DC.

———. 2010. "Resolution of Banking Crises: The Good, the Bad, and the Ugly." IMF Working Paper 10/44, International Monetary Fund, Washington, DC.

———. 2012. "Systemic Banking Crises Database: An Update." IMF Working Paper 12/163, International Monetary Fund, Washington, DC.

Lakner, Christoph, and Branko Milanovic. 2015. "Global Income Distribution: From the Fall of the Berlin Wall to the Great Recession." *World Bank Economic Review* 30 (2): 203–32.

Lane, Philip R., and Gian Maria Milesi-Ferretti. 2017. "International Financial Integration in the Aftermath of the Global Financial Crisis." IMF Working Paper 17/115, International Monetary Fund, Washington, DC.

Lewis, Karen. 1996. "What Can Explain the Apparent Lack of International Consumption Risk Sharing?" *Journal of Political Economy* 104 (2): 267–97.

McCauley, Robert N., and Chang Shu. 2016. "Dollars and Renminbi Flowed out of China." *Bank for International Settlements Quarterly Review*, March 2016.

Obstfeld, Maurice. 1993. "Are Industrial-Country Consumption Risks Globally Diversified?" NBER Working Paper 4308, National Bureau of Economic Research, Cambridge, MA.

Prasad, Eswar, Kenneth Rogoff, Shang-Jin Wei, and M. Ayhan Kose. 2003. "Effects of Financial Globalization on Developing Countries: Some Empirical Evidence." IMF Occasional Paper 220, International Monetary Fund, Washington, DC.

Rajan, Raghuram, and Arvind Subramanian. 2005. "What Undermines Aid's Impact on Growth?" IMF Working Paper 05/126, International Monetary Fund, Washington, DC.

Ratha, Dilip. 2003. "Workers' Remittances: An Important and Stable Source of External Development Finance." In *Global Development Finance 2003: Striving for Stability in Development Finance*. Washington, DC: World Bank.

Sorensen, Bent, Yi-Tsung Wu, Oved Yosha, and Yu Zhu. 2005. "Home Bias and International Risk Sharing: Twin Puzzles Separated at Birth." CEPR Discussion Paper 5113, Centre for Economic Policy Research, London.

Wacziarg, Romain, and Karen Horn Welch. 2008. "Trade Liberalization and Growth: New Evidence." NBER Working Paper 10152, National Bureau of Economic Research, Cambridge, MA.

Yi, Kei-Mu. 2003. "Can Vertical Specialization Explain the Growth in World Trade?" *Journal of Political Economy* 111 (1): 52–102.
———. 2010. "Can Multistage Production Explain the Home Bias in Trade?" *American Economic Review* 100 (1): 364–93.