CHAPTER 1

GLOBAL PROSPECTS AND POLICIES

Recent Developments: Global Expansion Loses Steam

Following a broad-based upswing in cyclical growth that lasted nearly two years, the global economic expansion decelerated in the second half of 2018. Activity softened amid an increase in trade tensions and tariff hikes between the United States and China, a decline in business confidence, a tightening of financial conditions, and higher policy uncertainty across many economies. Against this global backdrop, a combination of country- and sector-specific factors further reduced momentum. After peaking at close to 4 percent in 2017, global growth remained strong, at 3.8 percent in the first half of 2018, but dropped to 3.2 percent in the second half of the year.

Emerging Market and Developing Economies

In China, necessary domestic regulatory tightening to rein in debt, constrain shadow financial intermediation, and place growth on a sustainable footing contributed to slower domestic investment, particularly in infrastructure. Spending on durable consumption goods also softened, with automobile sales declining in 2018 following the expiration of incentive programs for car purchases. These developments contributed to slower momentum over the year, with further pressure from diminishing export orders as US tariff actions began to take hold in the second half of the year. As a result, China's growth declined from 6.8 percent in the first half of 2018 to 6.0 percent in the second half of the year. The resulting weakening in import demand appeared to have impacts on trading partner exports in Asia and Europe.

Elsewhere across emerging market economies, activity moderated as worsening global financial market sentiment in the second half of 2018 compounded country-specific factors. Needed policy tightening to reduce financial and macroeconomic imbalances took effect in Argentina and Turkey; sentiment weakened and sovereign spreads rose in Mexico, following the incoming administration's cancellation of a planned airport for the capital and backtracking on energy and education reforms; and geopolitical tensions contributed to weaker activity in the Middle East.

Advanced Economies

The euro area slowed more than expected as a combination of factors weighed on activity across countries, including (1) weakening consumer and business sentiment; (2) delays associated with the introduction of new fuel emission standards for diesel-powered vehicles in Germany; (3) fiscal policy uncertainty, elevated sovereign spreads, and softening investment in Italy; and (4) street protests that disrupted retail sales and weighed on consumption spending in France. Growing concerns about a no-deal Brexit also likely weighed on investment spending within the euro area. Following a notable uptick in 2017, euro area economies' exports softened considerably, in part because of weak intra-euro-area trade, which exacerbated poor sentiment across the currency area.

Elsewhere in advanced economies, activity weakened in Japan, largely due to natural disasters in the third quarter. One exception to the broader pattern was that momentum in the United States remained robust amid a tight labor market and strong consumption growth, but investment appeared to soften in the second half of the year.

A common influence on sentiment across advanced and emerging market and developing economies has been high policy uncertainty in the wake of policy actions and difficulties in reaching agreement on contentious issues. The extended truce in the US–China trade dispute has provided a welcome respite in an otherwise turbulent policy backdrop that included Brexit negotiations, discussions over the Italian budget, changes in Mexican policy direction under the new administration, the US federal government shutdown, and US policy on Iran.

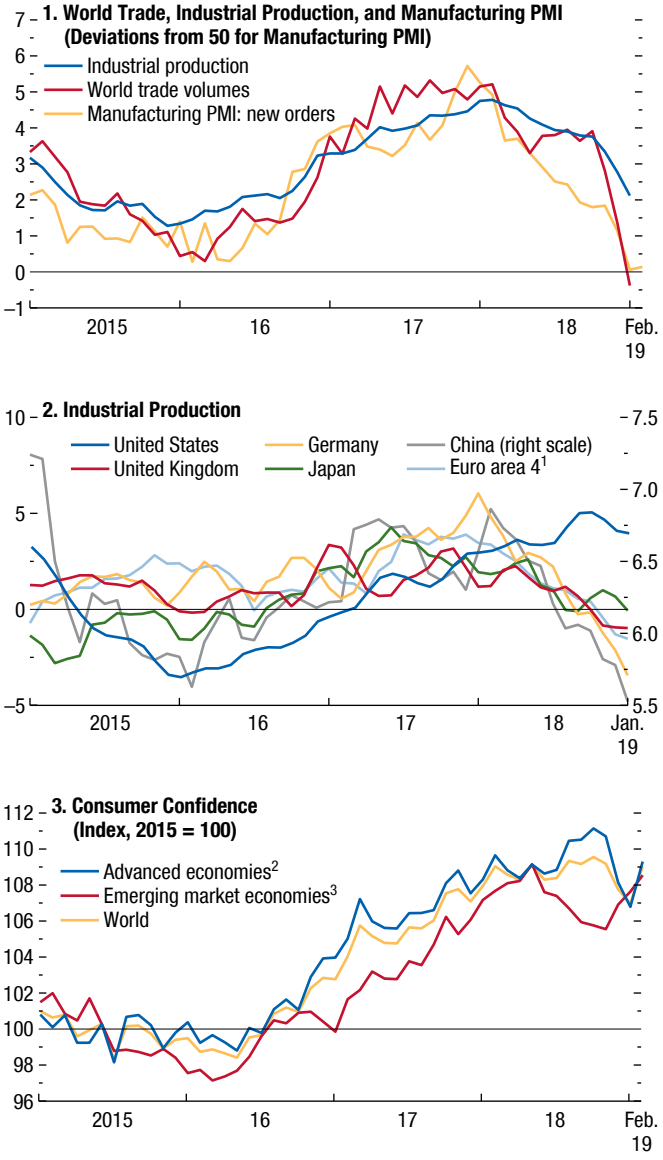
Softening Industrial Production, Slower Trade

Amid high policy uncertainty and weakening prospects for global demand, industrial production decelerated (Figure 1.1), particularly for capital goods. The slowdown was broad based, notably across advanced economies, except the United States. While a cyclical slowdown in countries thought to be operating above potential was to be expected, the downturn was larger and appeared related to a souring of market sentiment, in part because of trade tensions. Global trade growth has slowed sharply from its peak in late 2017, with US imports from China

Figure 1.1. Global Activity Indicators

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

Indicators of global activity have generally softened since the second half of 2018.

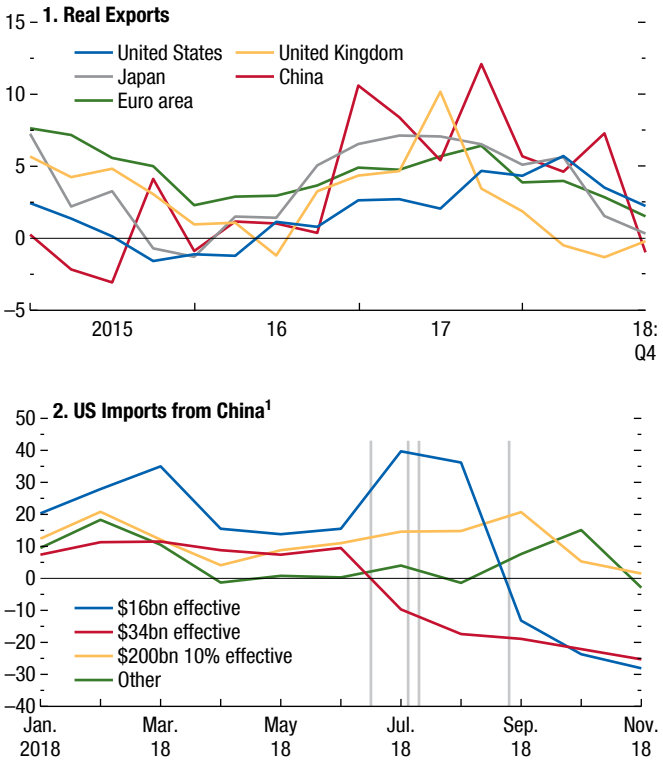


Sources: CPB Netherlands Bureau for Economic Policy Analysis; Haver Analytics; Markit Economics; and IMF staff calculations.
Note: CC = consumer confidence; PMI = purchasing managers' index.
[1]Euro area 4 comprises France, Italy, the Netherlands, and Spain.
[2]Australia, Canada (PMI only), Czech Republic, 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.
[3]Argentina (CC only), Brazil, China, Colombia (CC only), Hungary, India (PMI only), Indonesia, Latvia (CC only), Malaysia (PMI only), Mexico (PMI only), Philippines (CC only), Poland, Russia, South Africa, Thailand (CC only), Turkey, Ukraine (CC only).

Figure 1.2. Trade Indicators

(Year-over-year percent change)

Global trade growth has slowed sharply from its peak in late 2017. Following some front-loading, US imports from China subject to new US tariffs declined or stalled toward the end of the year.



Source: IMF staff calculations.
[1]The vertical bars correspond to the timing of tariff increases: $50bn list announced June 15, 2018; $34bn effective (of $50bn list) July 6, 2018, and $16bn effective (of $50bn list) August 23, 2018; $200bn list announced July 10, 2018, with 10 percent tariff on $200bn effective September 24, 2018. The series show the evolution of US imports of goods in the various tariff lists. bn = billion.

subject to new US tariffs declining or stalling toward the end of the year (following some front-loading ahead of tariff hikes; Figure 1.2). Weak expectations of future activity seen in purchasing managers' indexes point to a continuation of the slow momentum this year.

Lower Commodity Prices, Subdued Inflation Pressure

Global energy prices declined by 17 percent between the reference periods for the October 2018 and current *World Economic Outlook* (WEO) as oil prices dropped from a four-year peak of $81 a barrel in October to $61 in February (Figure 1.3). While supply influences dominated initially—notably a temporary waiver in US sanctions on Iranian oil exports to certain countries and record-high US crude oil production—weakening global growth added downward pressure on prices

toward the end of 2018. Since the beginning of this year, oil prices have recovered somewhat thanks to production cuts by oil-exporting countries. Prices of base metals have increased by 7.6 percent since August as a result of supply disruption in some metal markets more than offsetting subdued global demand.

Consumer price inflation remained muted across advanced economies, given the drop in commodity prices (Figure 1.4). For most countries in this group, core inflation is well below central bank targets despite the pickup in domestic demand in the past two years; in the United States and United Kingdom, it is close to 2 percent. Although wage growth has been picking up across most advanced economies, notably in the United States and United Kingdom, it is still sluggish despite lower unemployment rates and diminished labor market slack. With wage growth broadly in line with labor productivity growth, unit labor costs continue to be restrained (Box 1.1). Consistent with subdued overall price and wage pressures, and possibly reinforced by the slowing growth momentum, inflation expectations remain contained across advanced economies, and, in many cases, have softened recently.

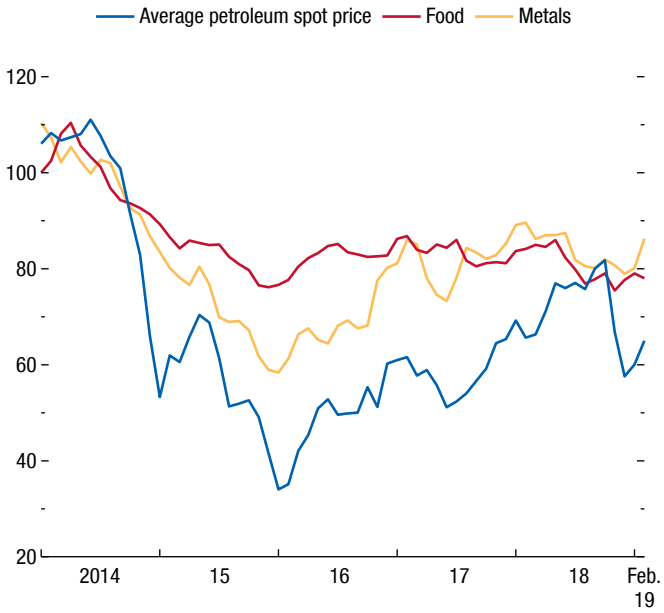
Among emerging market economies, core inflation has remained below 2 percent in China as activity has moderated. In other cases, inflation pressure has eased toward the lower bound of the central bank's target range with the drop in commodity prices (Indonesia) and slowdown in food inflation (India). For some economies, currency depreciations have passed through to higher domestic prices, partially offsetting downward pressure from lower commodity prices.

Financial Conditions Are Marginally Tighter than in the Fall; Localized Pressures Continue

Following a notable tightening of financial conditions in late 2018, market sentiment rebounded in early 2019. Signs of slowing global growth, moderately less buoyant corporate earnings, and market concerns about the pace of Federal Reserve policy tightening weighed on sentiment at the end of 2018. Prospects for a disorderly exit of the United Kingdom from the European Union (a "no-deal Brexit") and news about macroeconomic stimulus and liquidity support in China have also influenced market movements since October. More recently, a shift toward more accommodative monetary policy stances by major central banks (including a pause in interest rate hikes by the Federal Reserve) and the outcome of US–China trade negotiations have supported a rebound in sentiment.

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

Commodity prices have been volatile in recent months, reflecting shifting supply influences against a backdrop of subdued demand.



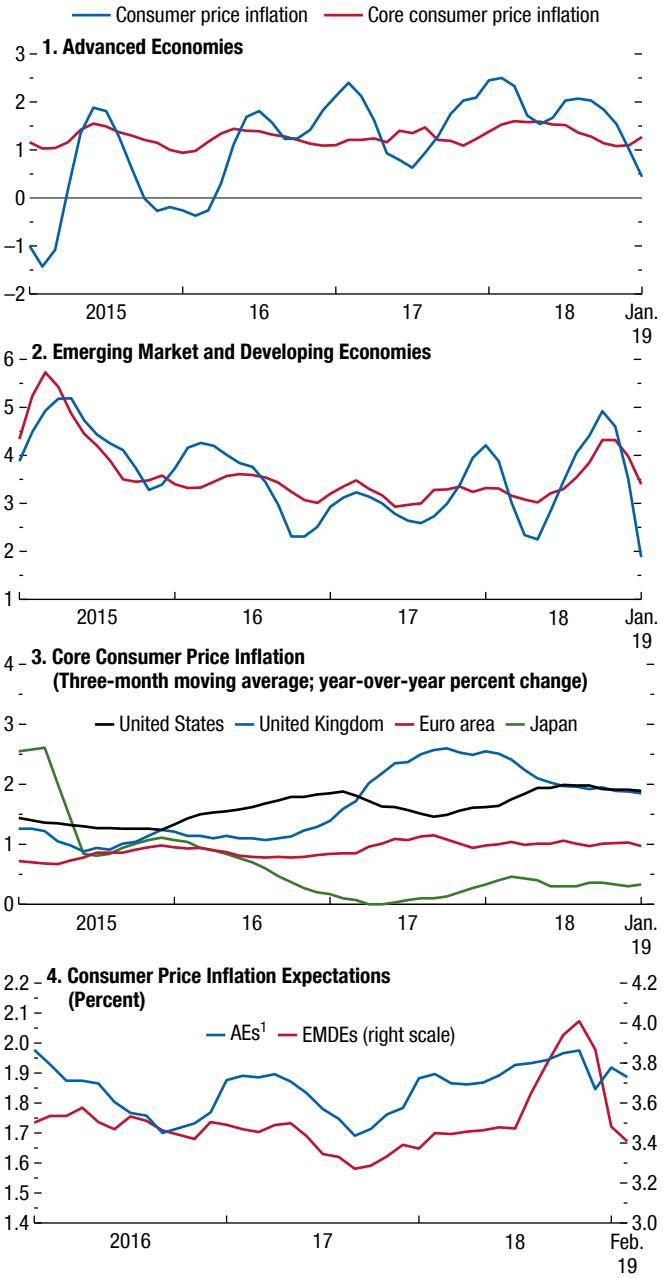
Sources: IMF, Primary Commodity Price System; and IMF staff calculations.

Financial conditions in advanced economies have eased since the start of the year, after tightening sharply in the final months of 2018 on equity price declines and higher risk spreads. As of early March, conditions were slightly tighter than in October (Figure 1.5; Figure 1.2 of the April 2019 *Global Financial Stability Report* (GFSR)), but, in most cases, still accommodative. This is especially the case in the United States, where bond yields dropped as investors reassessed the outlook for monetary policy normalization. The change in tone of communications by major central banks has been an important contributor to the easing of financial conditions since early 2019. In January, communication by the US Federal Reserve suggested a patient and flexible approach to policy normalization, and at the March meeting of the Federal Open Market Committee, it signaled a pause in its interest rate hikes for this year (see the April 2019 GFSR). The European Central Bank, which ended its net asset purchases in December, announced in March a new round of targeted bank financing and further postponed a rise in policy rates to at least the end of this year. The Bank of England and Bank of Japan have increasingly taken more cautious views on the outlook. Consistent with this shift in tone,

Figure 1.4. Global Inflation

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

Consumer price inflation remained muted across advanced economies, given the drop in commodity prices. For some emerging market economies, currency depreciations have passed through to higher domestic prices, partially offsetting downward pressure from lower commodity prices.

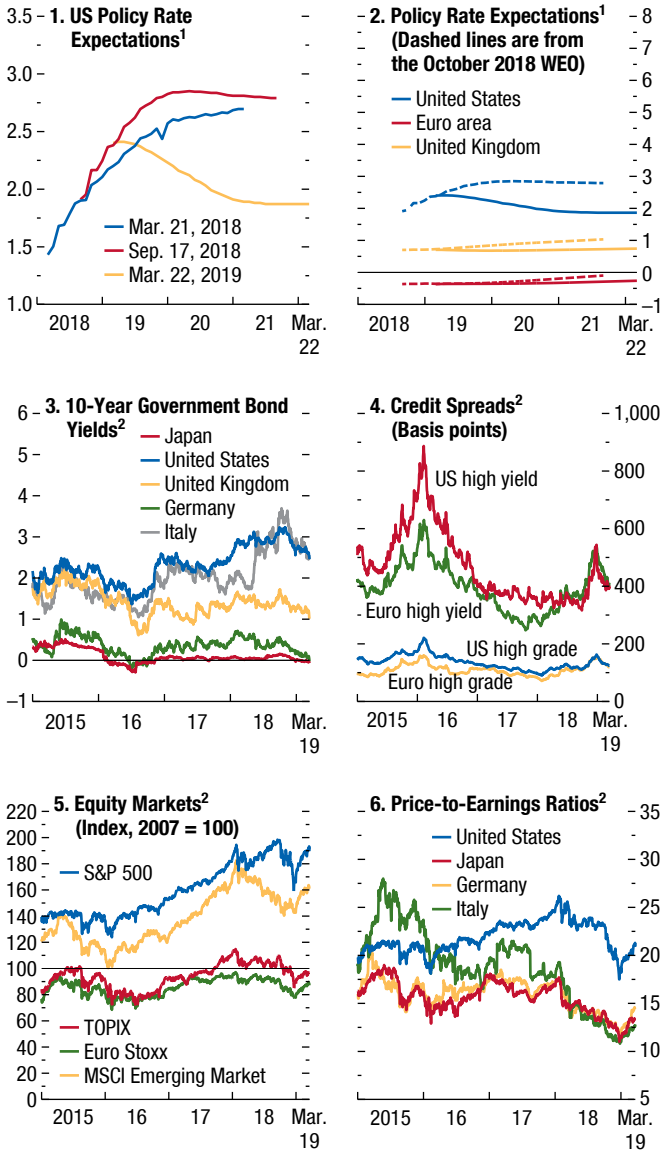


Sources: Consensus Economics; Haver Analytics; and IMF staff calculations.
Note: AEs = advanced economies (AUT, BEL, CAN, CHE, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, HKG, IRL, ISR, ITA, JPN, KOR, LTU, LUX, LVA, NLD, NOR, PRT, SGP, SVK, SVN, SWE, TWN, USA); Emerging market and developing countries comprise BGR, BRA, CHL, CHN, COL, HUN, IDN, IND, MEX, MYS, PER, PHL, POL, ROU, RUS, THA, TUR, ZAF. Country list uses International Organization for Standardization (ISO) country codes.
[1]AEs include AUS; exclude LUX.

Figure 1.5. Advanced Economies: Monetary and Financial Market Conditions

(Percent, unless noted otherwise)

Financial conditions in advanced economies have eased since the start of the year, after tightening sharply in the final months of 2018.



Sources: Bloomberg Finance L.P.; Haver Analytics; 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 March 22, 2019.
[2]Data are through March 22, 2019.

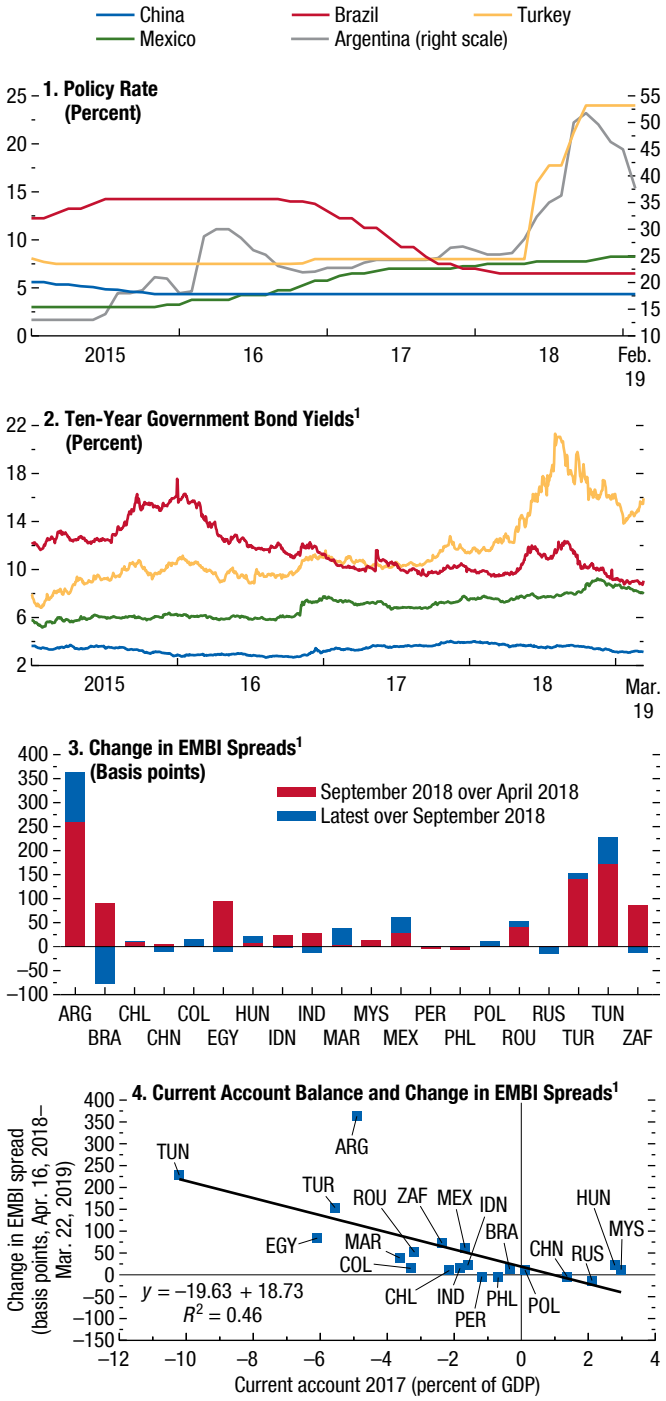
advanced economy sovereign securities (in particular, 10-year US Treasury notes, German bunds, UK gilts) have priced in a lower path for future policy rates and are generally 40–80 basis points below the peaks of early November 2018. Italian spreads over German bunds, about 250 basis points as of late March, have declined from their late-October/early-November peaks, but remain elevated. Riskier asset classes have generally benefited from improved sentiment at the start of 2019. Equity markets in the United States and Europe have regained footing after the sharp sell-off at the end of 2018, while high-yield corporate spreads—which had decompressed significantly in December—have narrowed since, but still remain wider than in October.

Financial conditions in emerging markets improved in early 2019 but remain somewhat tighter than in October (Figure 1.6). Country-specific economic fundamentals and political factors continued to drive differentiation across economies in the group. Central banks in many emerging market economies (Chile, Indonesia, Mexico, Philippines, South Africa) have lifted policy rates since October because of concerns that inflation may rise following the increase in oil prices in 2018 and, for some countries, pass-through from previous currency depreciation. In China, the central bank provided liquidity support and reduced reserve requirements for all banks as growth moderated. Long-term sovereign yields and spreads over advanced economies are broadly back to October levels. In Mexico, concerns over policy reversals under the new administration led to a notable widening of the sovereign spread during November and December, but it has since narrowed. In Brazil, spreads have declined since October amid optimism about the prospects of pension reform under the new government. Following ongoing adjustments to rein in financial imbalances in Argentina and Turkey, spreads for both have declined somewhat but remain elevated. In line with improving risk sentiment this year, emerging market equity indexes have recovered some of the ground lost in late 2018 and are now broadly at or have surpassed the levels of October in most cases (Figure 1.7).

Exchange rates: With regard to major currencies, as of late March, the US dollar was back to its September 2018 level: the late-2018 appreciation reversed following a shift in market expectations about the pace and extent of monetary policy tightening (Figure 1.8, panel 1). The euro depreciated by about 3 percent over this period, on weaker-than-expected macroeconomic data and concerns about Italy. The yen appreciated modestly, and the pound strengthened by about 3 percent on shifting expectations of the outcome

Figure 1.6. Emerging Market Economies: Interest Rates and Spreads

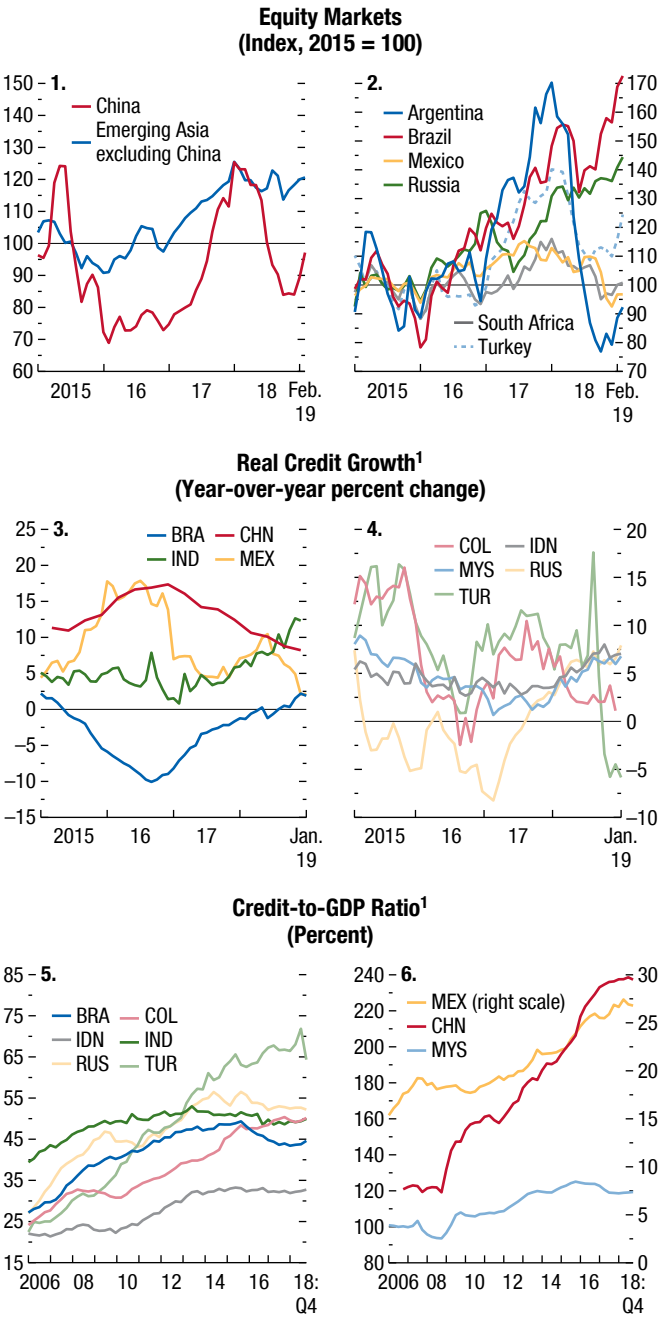
Financial conditions in emerging market economies improved in early 2019, with differentiation across economies based on country-specific fundamentals.



Sources: Haver Analytics; IMF, *International Financial Statistics*; Thomson Reuters Datastream; and IMF staff calculations.
Note: EMBI = J.P. Morgan Emerging Markets Bond Index. Data labels use International Organization for Standardization (ISO) country codes.
[1]Financial market data are through March 22, 2019.

Figure 1.7. Emerging Market Economies: Equity Markets and Credit

Emerging market equity indexes have recovered some of the ground lost in late 2018.

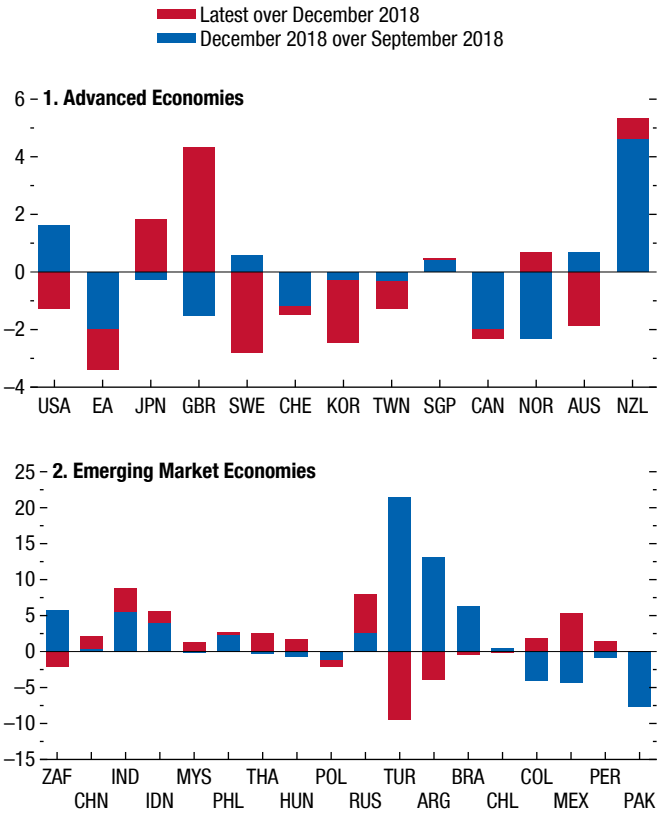


Sources: Bloomberg Finance L.P.; Haver Analytics; IMF, *International Financial Statistics* (IFS); Thomson Reuters Datastream; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1]Credit is other depository corporations' claims on the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

Figure 1.8. Real Effective Exchange Rate Changes, September 2018–March 2019

(Percent)

Following a shift in market expectations about the pace and extent of US monetary policy tightening, the late-2018 appreciation of the dollar reversed and emerging market currencies generally strengthened.



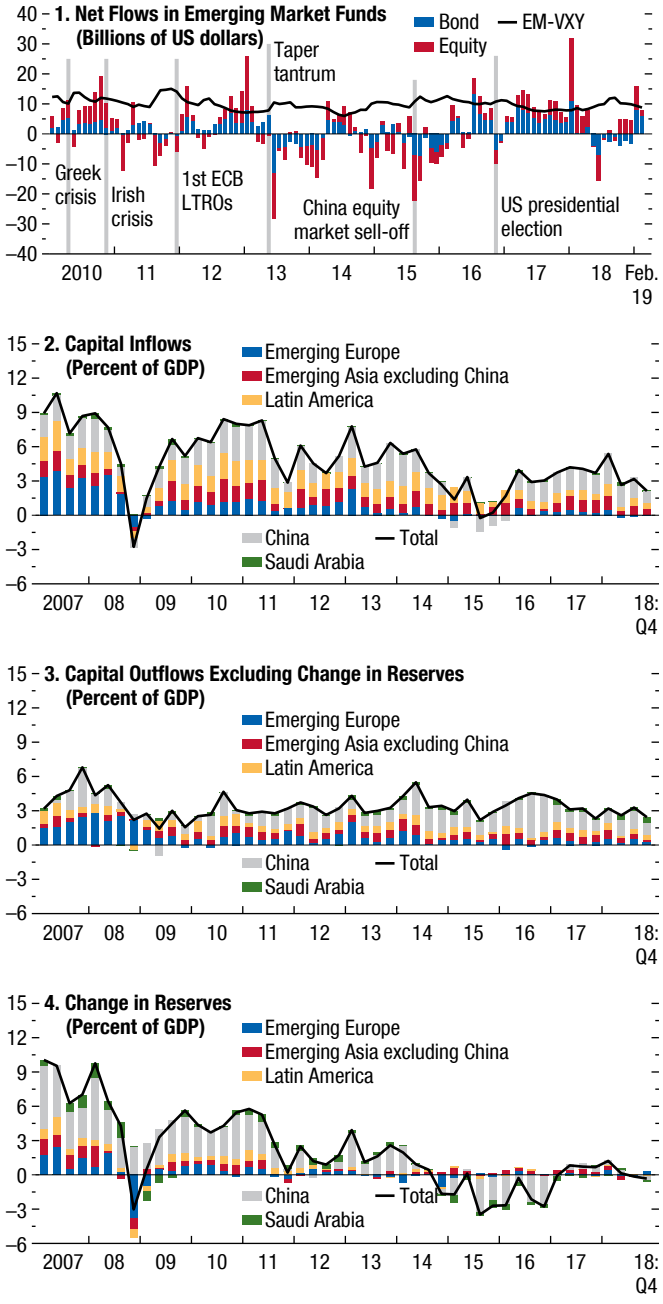
Source: IMF staff calculations.
Note: EA = euro area. Data labels use International Organization for Standardization (ISO) country codes. Latest data available are for March 22, 2019.

of Brexit negotiations. Emerging market currencies generally strengthened, helped by the pause in interest rate hikes by the Federal Reserve and by the truce in the US–China trade dispute (Figure 1.8, panel 2). This includes currencies that had come under more severe pressure in previous months—primarily the Argentine peso and the Turkish lira, but also the Brazilian real and the South African rand—as well as the Indian rupee and the Russian ruble. Most other Asian currencies also appreciated, with the Chinese renminbi strengthening by about 2 percent.

Capital flows: Improved market sentiment toward emerging markets was reflected in a stabilization and subsequent recovery in portfolio flows, which had dropped sharply in the second and third quarters of

Figure 1.9. Emerging Market Economies: Capital Flows

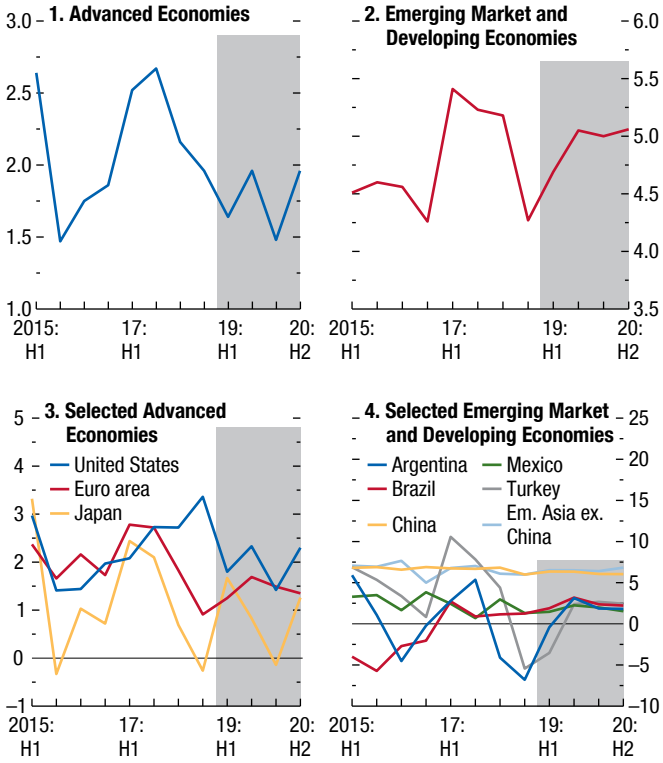
Investors increased allocations to emerging market bond and equity funds in early 2019.



Sources: EPFR Global; Haver Analytics; IMF, *International Financial Statistics*; Thomson Reuters Datastream; 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 = long-term refinancing operations.

Figure 1.10. Half-Yearly Growth Forecasts
(Annualized semiannual percent change)

The global outlook envisages a stabilization of growth in the first half of 2019 followed by a gradual recovery.



Source: IMF staff estimates.
Note: Em. Asia ex. China = emerging and developing Asia excluding China.

2018. The recovery was particularly notable in early 2019 as investors increased allocations to emerging market bond and equity funds (Figure 1.9).

The Forecast

Near-Term Moderation, Then a Modest Pickup

Industrial production figures and surveys of purchasing managers suggest that the slower momentum in global growth during the second half of 2018 is likely to continue in early 2019. The forecast envisages a stabilization of growth in the first half of the year and a gradual recovery thereafter (Figure 1.10).

Reflecting the slowdown in activity in the latter half of 2018 and the first half of 2019, global growth is set to moderate from 3.6 percent in 2018 to 3.3 percent in 2019, and then to return to 3.6 percent in 2020. The forecast for 2019 is 0.4 percentage point lower than in the October 2018 WEO, while the forecast for 2020 is 0.1 percentage point lower (Table 1.1).

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

(Percent change, unless noted otherwise)

		Projections		Difference from January 2019 *WEO Update*[1]		Difference from October 2018 WEO[1]	
	2018	2019	2020	2019	2020	2019	2020
World Output	**3.6**	**3.3**	**3.6**	**–0.2**	**0.0**	**–0.4**	**–0.1**
Advanced Economies	**2.2**	**1.8**	**1.7**	**–0.2**	**0.0**	**–0.3**	**0.0**
United States	2.9	2.3	1.9	–0.2	0.1	–0.2	0.1
Euro Area	1.8	1.3	1.5	–0.3	–0.2	–0.6	–0.2
Germany	1.5	0.8	1.4	–0.5	–0.2	–1.1	–0.2
France	1.5	1.3	1.4	–0.2	–0.2	–0.3	–0.2
Italy	0.9	0.1	0.9	–0.5	0.0	–0.9	0.0
Spain	2.5	2.1	1.9	–0.1	0.0	–0.1	0.0
Japan	0.8	1.0	0.5	–0.1	0.0	0.1	0.2
United Kingdom	1.4	1.2	1.4	–0.3	–0.2	–0.3	–0.1
Canada	1.8	1.5	1.9	–0.4	0.0	–0.5	0.1
Other Advanced Economies[2]	2.6	2.2	2.5	–0.3	0.0	–0.3	0.0
Emerging Market and Developing Economies	**4.5**	**4.4**	**4.8**	**–0.1**	**–0.1**	**–0.3**	**–0.1**
Commonwealth of Independent States	2.8	2.2	2.3	0.0	0.0	–0.2	–0.1
Russia	2.3	1.6	1.7	0.0	0.0	–0.2	–0.1
Excluding Russia	3.9	3.5	3.7	–0.2	0.0	–0.1	0.0
Emerging and Developing Asia	6.4	6.3	6.3	0.0	–0.1	0.0	–0.1
China	6.6	6.3	6.1	0.1	–0.1	0.1	–0.1
India[3]	7.1	7.3	7.5	–0.2	–0.2	–0.1	–0.2
ASEAN-5[4]	5.2	5.1	5.2	0.0	0.0	–0.1	0.0
Emerging and Developing Europe	3.6	0.8	2.8	0.1	0.4	–1.2	0.0
Latin America and the Caribbean	1.0	1.4	2.4	–0.6	–0.1	–0.8	–0.3
Brazil	1.1	2.1	2.5	–0.4	0.3	–0.3	0.2
Mexico	2.0	1.6	1.9	–0.5	–0.3	–0.9	–0.8
Middle East, North Africa, Afghanistan, and Pakistan	1.8	1.5	3.2	–0.9	0.2	–1.2	0.2
Saudi Arabia	2.2	1.8	2.1	0.0	0.0	–0.6	0.2
Sub-Saharan Africa	3.0	3.5	3.7	0.0	0.1	–0.3	–0.2
Nigeria	1.9	2.1	2.5	0.1	0.3	–0.2	0.0
South Africa	0.8	1.2	1.5	–0.2	–0.2	–0.2	–0.2
Memorandum							
European Union	2.1	1.6	1.7	–0.3	–0.1	–0.4	–0.1
Low-Income Developing Countries	4.6	5.0	5.1	–0.1	0.0	–0.2	–0.2
Middle East and North Africa	1.4	1.3	3.2	–0.9	0.3	–1.2	0.3
World Growth Based on Market Exchange Rates	3.1	2.7	2.9	–0.3	0.0	–0.4	0.0
World Trade Volume (goods and services)	**3.8**	**3.4**	**3.9**	**–0.6**	**–0.1**	**–0.6**	**–0.2**
Imports							
Advanced Economies	3.3	3.0	3.2	–1.1	–0.1	–1.0	–0.3
Emerging Market and Developing Economies	5.6	4.6	5.3	–0.5	–0.3	–0.2	–0.2
Exports							
Advanced Economies	3.1	2.7	3.1	–0.2	–0.3	–0.4	–0.3
Emerging Market and Developing Economies	4.3	4.0	4.8	–0.5	0.0	–0.8	0.0
Commodity Prices (US dollars)							
Oil[5]	29.4	–13.4	–0.2	0.7	0.2	–12.5	4.2
Nonfuel (average based on world commodity export weights)[6]	1.6	–0.2	1.1	2.5	–0.1	0.5	0.8
Consumer Prices							
Advanced Economies	2.0	1.6	2.1	–0.1	0.1	–0.3	0.1
Emerging Market and Developing Economies[7]	4.8	4.9	4.7	–0.2	0.1	–0.3	0.1
London Interbank Offered Rate (percent)							
On US Dollar Deposits (six month)	2.5	3.2	3.8	0.0	0.0	–0.2	–0.1
On Euro Deposits (three month)	–0.3	–0.3	–0.2	0.0	–0.2	–0.1	–0.3
On Japanese Yen Deposits (six month)	0.0	0.0	0.0	0.0	–0.1	–0.1	–0.1

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during January 14–February 11, 2019. Economies are listed on the basis of economic size. The aggregated quarterly data are seasonally adjusted. WEO = *World Economic Outlook*.

[1]Difference based on rounded figures for the current, January 2019 *World Economic Outlook Update*, and October 2018 *World Economic Outlook* forecasts. The differences are also adjusted to include Argentina's consumer prices since the July 2018 Update.

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

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

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

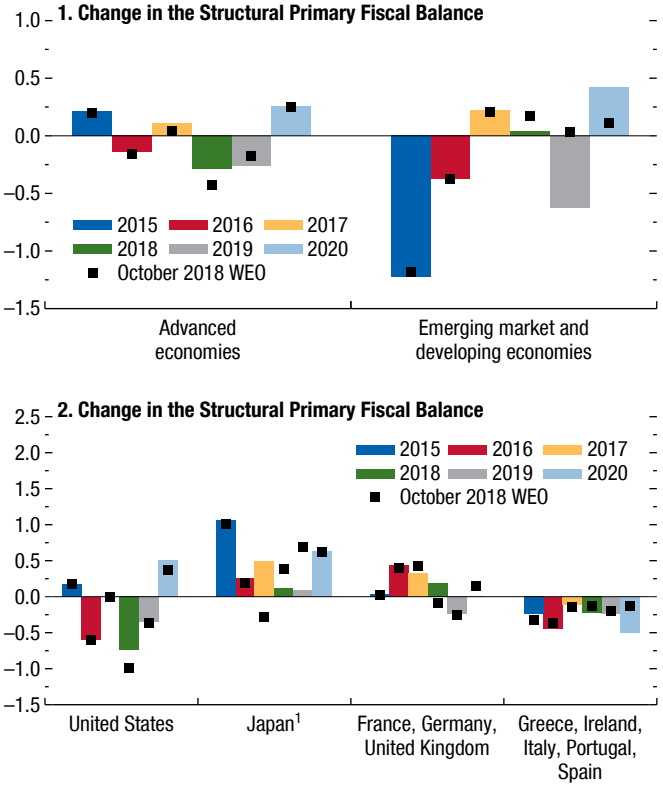
Table 1.1 *(continued)*

	Year over Year				Q4 over Q4[8]			
			Projections				Projections	
	2017	2018	2019	2020	2017	2018	2019	2020
World Output	**3.8**	**3.6**	**3.3**	**3.6**	**4.0**	**3.4**	**3.5**	**3.6**
Advanced Economies	**2.4**	**2.2**	**1.8**	**1.7**	**2.6**	**2.0**	**1.8**	**1.8**
United States	2.2	2.9	2.3	1.9	2.5	3.0	2.2	1.7
Euro Area	2.4	1.8	1.3	1.5	2.7	1.1	1.6	1.4
Germany	2.5	1.5	0.8	1.4	2.8	0.6	1.4	1.3
France	2.2	1.5	1.3	1.4	2.8	0.9	1.6	1.3
Italy	1.6	0.9	0.1	0.9	1.7	0.0	0.6	0.8
Spain	3.0	2.5	2.1	1.9	3.1	2.4	1.9	1.7
Japan	1.9	0.8	1.0	0.5	2.4	0.3	0.3	1.4
United Kingdom	1.8	1.4	1.2	1.4	1.6	1.4	1.0	1.5
Canada	3.0	1.8	1.5	1.9	2.9	1.6	1.8	1.8
Other Advanced Economies[2]	2.9	2.6	2.2	2.5	2.9	2.4	2.4	2.7
Emerging Market and Developing Economies	**4.8**	**4.5**	**4.4**	**4.8**	**5.2**	**4.7**	**4.9**	**5.0**
Commonwealth of Independent States	2.4	2.8	2.2	2.3	1.5	3.4	1.6	2.0
Russia	1.6	2.3	1.6	1.7	1.0	3.4	1.2	1.7
Excluding Russia	4.1	3.9	3.5	3.7	. . .	. . .	. . .	. . .
Emerging and Developing Asia	6.6	6.4	6.3	6.3	6.8	6.3	6.4	6.3
China	6.8	6.6	6.3	6.1	6.7	6.4	6.3	6.0
India[3]	7.2	7.1	7.3	7.5	8.1	6.8	7.2	7.6
ASEAN-5[4]	5.4	5.2	5.1	5.2	5.4	5.1	5.3	5.3
Emerging and Developing Europe	6.0	3.6	0.8	2.8	6.2	0.7	2.1	2.9
Latin America and the Caribbean	1.2	1.0	1.4	2.4	1.3	0.3	2.0	2.2
Brazil	1.1	1.1	2.1	2.5	2.2	1.1	2.8	2.2
Mexico	2.1	2.0	1.6	1.9	1.5	1.7	2.0	1.6
Middle East, North Africa, Afghanistan, and Pakistan	2.2	1.8	1.5	3.2	. . .	. . .	. . .	. . .
Saudi Arabia	–0.7	2.2	1.8	2.1	–1.4	4.0	1.0	2.1
Sub-Saharan Africa	2.9	3.0	3.5	3.7	. . .	. . .	. . .	. . .
Nigeria	0.8	1.9	2.1	2.5	. . .	. . .	. . .	. . .
South Africa	1.4	0.8	1.2	1.5	2.2	0.2	1.0	1.8
Memorandum								
European Union	2.7	2.1	1.6	1.7	2.8	1.6	1.7	1.7
Low-Income Developing Countries	4.9	4.6	5.0	5.1	. . .	. . .	. . .	. . .
Middle East and North Africa	1.8	1.4	1.3	3.2	. . .	. . .	. . .	. . .
World Growth Based on Market Exchange Rates	3.2	3.1	2.7	2.9	3.3	2.8	2.8	2.8
World Trade Volume (goods and services)	**5.4**	**3.8**	**3.4**	**3.9**	**. . .**	**. . .**	**. . .**	**. . .**
Imports								
Advanced Economies	4.3	3.3	3.0	3.2	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	7.5	5.6	4.6	5.3	. . .	. . .	. . .	. . .
Exports								
Advanced Economies	4.4	3.1	2.7	3.1	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	7.2	4.3	4.0	4.8	. . .	. . .	. . .	. . .
Commodity Prices (US dollars)								
Oil[5]	23.3	29.4	–13.4	–0.2	19.6	9.5	–7.5	–1.3
Nonfuel (average based on world commodity export weights)[6]	6.4	1.6	–0.2	1.1	3.5	–1.9	3.6	0.9
Consumer Prices								
Advanced Economies	1.7	2.0	1.6	2.1	1.7	1.9	1.9	1.9
Emerging Market and Developing Economies[7]	4.3	4.8	4.9	4.7	3.7	4.3	4.0	3.9
London Interbank Offered Rate (percent)								
On US Dollar Deposits (six month)	1.5	2.5	3.2	3.8	. . .	. . .	. . .	. . .
On Euro Deposits (three month)	–0.3	–0.3	–0.3	–0.2	. . .	. . .	. . .	. . .
On Japanese Yen Deposits (six month)	0.0	0.0	0.0	0.0	. . .	. . .	. . .	. . .

[5]Simple average of prices of UK Brent, Dubai Fateh, and West Texas Intermediate crude oil. The average price of oil in US dollars a barrel was $68.33 in 2018; the assumed price, based on futures markets, is $59.16 in 2019 and $59.02 in 2020.
[6]Starting with the January 2019 WEO *Update*, the IMF commodity price index and its sub-indices have been updated and have expanded coverage. The nonfuel commodity forecast revisions compare current projections with October 2018 projections, however, due to methodological and coverage changes, comparability is limited.
[7]Excludes Venezuela. See country-specific note for 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.

Figure 1.11. Forecast Assumptions: Fiscal Indicators
(Percent of GDP)

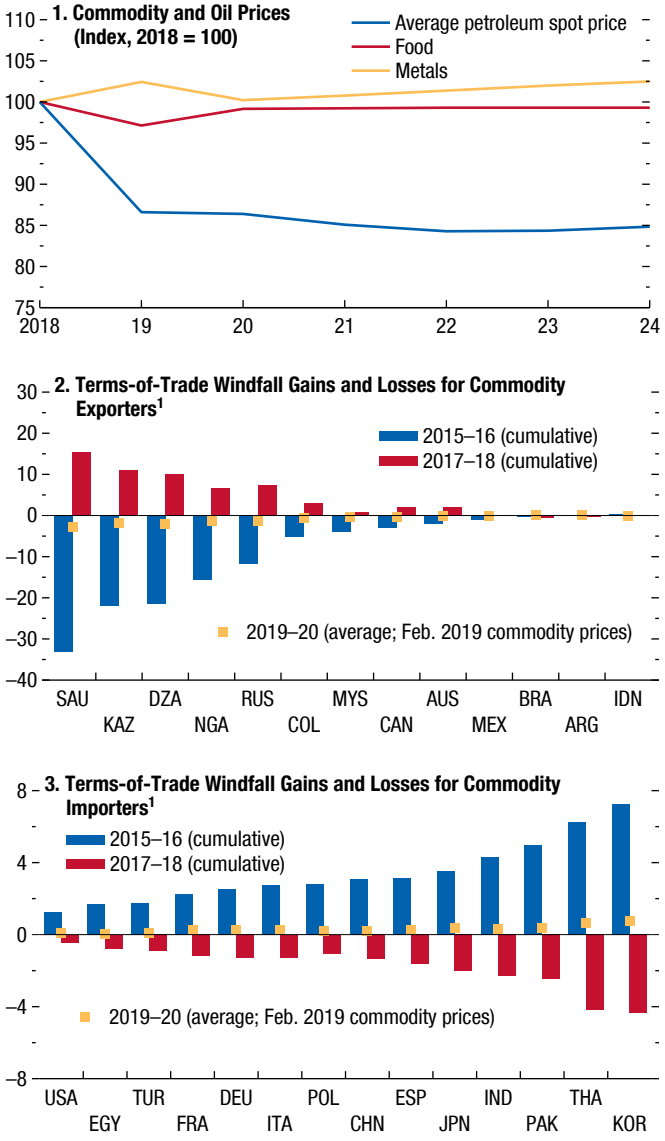
Fiscal policy is assumed to be expansionary across advanced economies in 2019 and expected to turn contractionary in 2020 as the US stimulus starts going into reverse. Across the emerging market and developing economy group, fiscal policy is assumed to be expansionary in 2019 (in part reflecting a projected fiscal stimulus in China to offset some of the negative effects of higher tariffs), before turning contractionary in 2020.



Source: IMF staff estimates.
Note: WEO = *World Economic Outlook*.
[1]Japan's latest figures reflect comprehensive methodological revisions adopted in December 2016.

Figure 1.12. Commodity Price Assumptions and Terms-of-Trade Windfall Gains and Losses
(Percent of GDP, unless noted otherwise)

Based on oil futures contracts, average oil prices are projected at $54.1 in 2019, rising to $55.2 in 2020. Metal prices are expected to decline 6.0 percent year over year in 2019 and inch down a further 0.8 percent in 2020. Food prices are projected to decline 2.6 percent year over year in 2019 before increasing by 1.7 percent in 2020.



Sources: IMF, Primary Commodity Price System; and IMF staff estimates.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1]Gains (losses) for 2019–20 are simple averages of annual incremental gains (losses) for 2019 and 2020. 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).

Beyond 2020, global growth is projected to plateau at about 3.6 percent over the medium term, similarly to the medium-term forecast of the October 2018 WEO. The assumptions for trade, fiscal, and monetary policies as well as commodity prices, which underpin this baseline forecast, are outlined in Box 1.2 (see also Figures 1.11 and 1.12). Importantly, tariffs on $200 billion of US imports from China are assumed to stay at 10 percent (whereas in the October 2018 WEO and the January 2019 WEO *Update* they had been assumed to rise to 25 percent as of March 1, 2019).

The global growth forecast reflects a combination of waning cyclical forces and a return to tepid potential growth in advanced economies; a precarious recovery in

emerging market and developing economies, driven to a great extent by economies currently experiencing severe macroeconomic distress; and complex factors that shape the prospects for potential growth in both groups.

Waning Cyclical Forces in Advanced Economies

Growth in advanced economies is projected to slow from 2.2 percent in 2018 to 1.8 percent in 2019 and 1.7 percent in 2020. The estimated growth rate for 2018 and the projection for 2019, respectively, are 0.2 percentage point and 0.3 percentage point lower than in the October 2018 WEO, mostly reflecting downward revisions for the euro area.

The projected slowdown in advanced economies in 2019 accounts for over two-thirds of the expected deceleration in global growth relative to 2018. With output gaps estimated as being closed for most economies in the group (indeed some are operating above their estimated potential in a context of historically low unemployment rates), the cyclical upsurge is set to retreat toward more modest potential rates of growth.

The retreat in part reflects the anticipated negative effects of the tariff increases enacted in 2018. A second notable aspect of the advanced economy growth profile is that the temporary boost to US and trading partner growth from the sizable US fiscal stimulus is expected to diminish during 2019 (and particularly in 2020 as some of its provisions start to reverse). But beyond these two features already incorporated into the previous forecast, the waning of cyclical forces appears more rapid than expected, triggered by additional developments in particular economies during the second half of 2018.

Growth in the euro area is set to moderate from 1.8 percent in 2018 to 1.3 percent in 2019 (0.6 percentage point lower than projected in October) and 1.5 percent in 2020. Although growth is expected to recover in the first half of 2019 as some of the temporary factors that held activity back dissipate, carryover from the weakness in the second half of 2018 is expected to hold the 2019 growth rate down. Growth rates have been marked down for many economies, notably *Germany* (due to soft private consumption, weak industrial production following the introduction of revised auto emission standards, and subdued foreign demand); *Italy* (due to weak domestic demand, as sovereign yields remain elevated); and *France* (due to the negative impact of street protests).

The baseline projection of about 1.2 percent and 1.4 percent growth in the *United Kingdom* in 2019–20 is surrounded by uncertainty. The downward revisions relative to the October 2018 WEO reflect the negative effect of prolonged uncertainty about the Brexit outcome, only partially offset by the positive impact from fiscal stimulus announced in the 2019 budget. This baseline projection assumes that a Brexit deal is reached in 2019 and that the United Kingdom transitions gradually to the new regime. However, as of mid-March, the form Brexit will ultimately take remained highly uncertain.

In the *United States*, growth is expected to decline to 2.3 percent in 2019 and soften further to 1.9 percent in 2020 with the unwinding of fiscal stimulus. The downward revision to 2019 growth reflects the impact of the government shutdown and somewhat lower fiscal spending than previously anticipated, while the modest upward revision for 2020 reflects a more accommodative stance of monetary policy than in the October forecast. Despite the downward revision, the projected pace of expansion for 2019 is above the US economy's estimated potential growth rate. Strong domestic demand growth will support higher imports and contribute to some widening of the current account deficit.

Japan's economy is set to grow by 1.0 percent in 2019 (0.1 percentage point higher than in the October WEO). This revision mainly reflects additional fiscal support this year, including measures to mitigate the effects of the planned consumption tax rate increase in October 2019. Growth is projected to moderate to 0.5 percent in 2020 (0.2 percentage point higher than in the October 2018 WEO, reflecting the effects of the aforementioned mitigating measures).

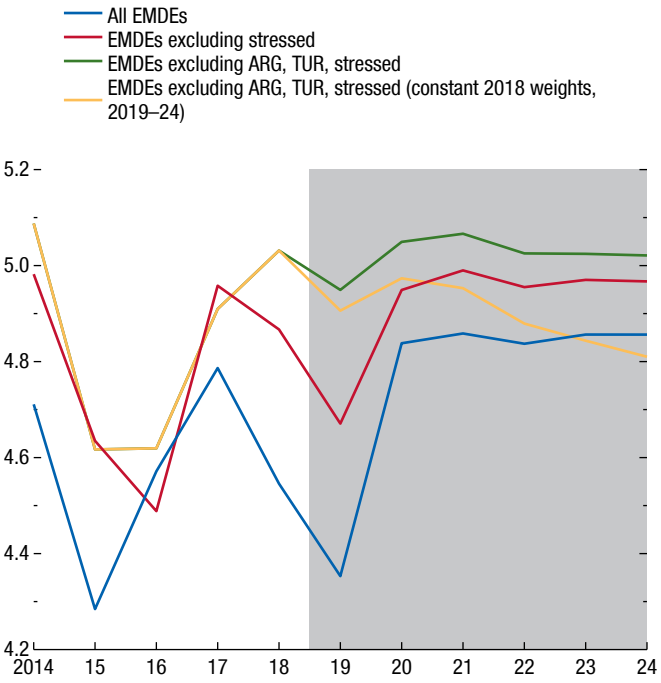
A Precarious Recovery in Emerging Market and Developing Economies

Global growth in 2019 is also weighed down by the emerging market and developing economy group, where growth is expected to tick down to 4.4 percent in 2019 (from 4.5 percent in 2018), 0.3 percentage point lower than in the October 2018 WEO. The decline in growth relative to 2018 reflects lower growth in China and the recession in Turkey, with an important carryover from weaker activity in late 2018, as well as a deepening contraction in Iran.

Conditions are projected to improve during 2019 as stimulus measures sustain activity in China and recession strains gradually ease in economies such as Argentina and Turkey. In 2020, growth is projected to rise to 4.8 percent, driven almost entirely by an expected

Figure 1.13. Growth Rate: Emerging Market and Developing Economies
(Percent)

The projected pickup in growth among emerging market and developing economies in 2020 is driven almost entirely by an expected strengthening of activity in economies currently in macroeconomic distress and some easing of strains in countries affected by conflict and geopolitical tensions.



Source: IMF staff estimates.
Note: EMDEs = emerging market and developing economies; stressed = IRN, IRQ, LBY, SDN, SSD, UKR, VEN, YEM. Country list uses International Organization for Standardization (ISO) country codes.

strengthening of activity in these economies on the back of policy adjustment and some easing of strains in countries affected by conflict and geopolitical tensions (Figure 1.13). For the latter group of countries in particular, the forecast is subject to very significant uncertainty. With declining growth in advanced economies, the projected pickup in global growth in 2020 is entirely predicated on this projected improvement for the emerging market and developing economy group. Figure 1.13 also highlights the role played by the increasing weight of fast-growing economies, such as China and India, in supporting aggregate growth for emerging markets and developing economies as well as world growth.

Near-term prospects for emerging market and developing economies continue to be shaped by the interaction between country-specific fundamentals and a challenging external environment marked by the slowdown in advanced economies; trade tensions; expected gradual tightening of financial conditions consistent with some further removal of monetary policy accommodation in the United States; and, for commodity exporters, a generally subdued outlook for commodity prices (including oil prices, which are projected to remain below their 2018 average throughout the forecast horizon).

Growth in *emerging and developing Asia* is expected to dip to 6.3 percent in 2019 and 2020 (from 6.4 percent in 2018), with a marginal downward revision for 2020 relative to the October WEO. Economic growth in *China*, despite fiscal stimulus and no further increase in tariffs from the United States relative to those in force as of September 2018, is projected to slow on an annualized basis in 2019 and 2020. This reflects weaker underlying growth in 2018, especially in the second half, and the impact of lingering trade tensions with the United States. The projection for 2019 is slightly stronger than in the October 2018 WEO, reflecting the revised assumption on United States tariffs on Chinese exports, as described in Box 1.2, while the projection for 2020 is slightly weaker, as the underlying momentum in activity is more subdued. In *India*, growth is projected to pick up to 7.3 percent in 2019 and 7.5 percent in 2020, supported by the continued recovery of investment and robust consumption amid a more expansionary stance of monetary policy and some expected impetus from fiscal policy. Nevertheless, reflecting the recent revision to the national account statistics that indicated somewhat softer underlying momentum, growth forecasts have been revised downward compared with the October 2018 WEO by 0.1 percentage point for 2019 and 0.2 percentage point for 2020, respectively.

Activity in *emerging and developing Europe* in 2019 is expected to weaken more than previously anticipated, despite generally buoyant and higher-than-expected growth in several central and eastern European countries, before recovering in 2020. The sizable revision for the region is mostly due to a substantial projected contraction in *Turkey* in 2019, where the weakness in demand—following tighter external financing conditions and needed policy tightening—is expected to continue in early 2019 before a recovery takes hold in the second half of the year.

In *Latin America*, growth is projected to recover over the next two years, to 1.4 percent in 2019 and 2.4 percent in 2020. In *Brazil*, growth is projected to strengthen from 1.1 percent in 2018 to 2.1 percent in

2019 and 2.5 percent in 2020. In *Mexico,* growth is now forecast to remain below 2 percent in 2019–20, a markdown close to 1 percentage point for both years relative to October. These changes, in part, reflect shifts in perceptions about policy direction under new administrations in both countries. *Argentina*'s economy is projected to contract in the first half of 2019 as domestic demand slows with tighter policies to reduce imbalances, returning to growth in the second half of the year as real disposable income recovers and agricultural production rebounds after last year's drought. *Venezuela*'s economy is expected to contract by one-fourth in 2019, and a further 10 percent in 2020—a greater collapse than projected in the October 2018 WEO and one that generates a sizable drag on projected growth for the region and for the emerging market and developing economy group in both years.

Growth in the *Middle East, North Africa, Afghanistan, and Pakistan* region is expected to decline to 1.5 percent in 2019, before recovering to about 3.2 percent in 2020. The outlook for the region is weighed down by multiple factors, including slower oil GDP growth in *Saudi Arabia*; ongoing macroeconomic adjustment challenges in *Pakistan*; US sanctions in *Iran*; and civil tensions and conflict across several other economies, including Iraq, Syria, and Yemen, where recovery from the collapse associated with the war is now expected to be slower than previously anticipated.

In *sub-Saharan Africa*, growth is expected to pick up to 3.5 percent in 2019 and 3.7 percent in 2020 (from 3.0 percent in 2018). The projection is 0.3 percentage point and 0.2 percentage point lower for 2019 and 2020, respectively, than in the October 2018 WEO, reflecting downward revisions for *Angola* and *Nigeria* with the softening of oil prices. Growth in *South Africa* is expected to marginally improve from 0.8 percent in 2018 to 1.2 percent in 2019 and 1.5 percent in 2020, a 0.2 percentage point downward revision for both years relative to the October projections. The projected recovery reflects modestly reduced but continued policy uncertainty in the South African economy after the May 2019 elections.

Activity in the *Commonwealth of Independent States* is projected to expand about 2¼ percent in 2019–20, slightly lower than projected in the October 2018 WEO, as weaker oil prices weigh on *Russia's* growth prospects.

Modest Outlook for Medium-Term Growth

Beyond 2020, global growth is set to plateau at 3.6 percent over the medium term. For the advanced economy group, growth is projected to moderate further over the medium term as the underlying structural headwinds to potential output (namely, continued weak productivity growth and slowing labor force growth) increasingly assert influence on the path of output as the cyclical forces discussed above fade away. Growth for the emerging market and developing economy group is expected to broadly stabilize at its 2020 level for the outer years of the forecast horizon, but with important offsetting regional differences.

Specifically, for advanced economies, growth is projected to slow to 1.6 percent by 2022 and remain at that level thereafter. The productivity slowdown that set in before the 2008–09 global financial crisis (Adler and others 2017) is projected to abate somewhat, with a slight pickup in productivity expected over the medium term. Despite the apparent proliferation of digitalization and automation, their cumulative impact on productivity is expected to be modest over the forecast horizon—likely benefiting consumer welfare to a larger extent than labor productivity (Box 1.5 of the April 2018 WEO). Other developments potentially have less favorable implications for productivity. These include the retreat from global economic integration (projections for global trade volume growth have been marked down following the tariff increases of 2018).

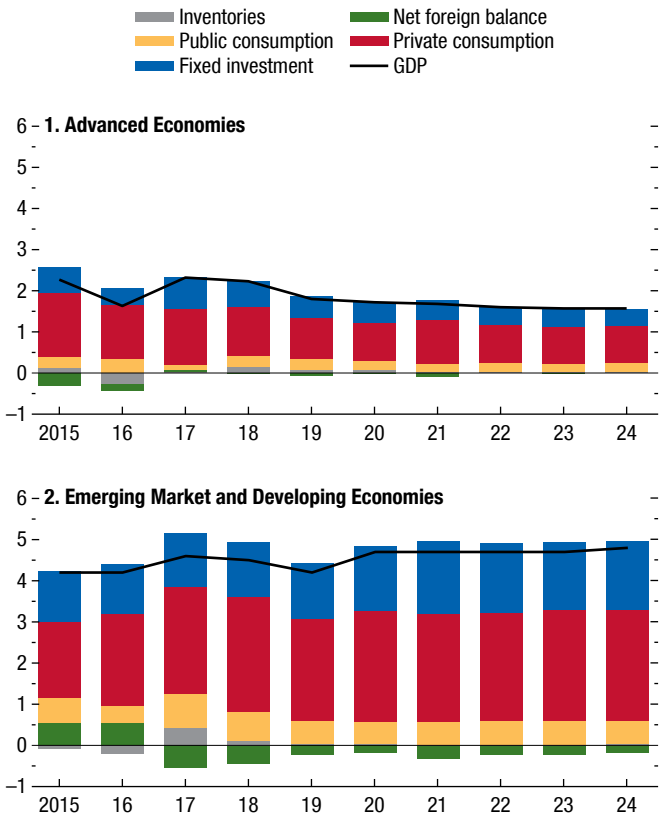
The modest uptick expected in productivity is likely only partially to counteract the drag on potential output growth anticipated from slower labor force growth as the population ages. This is particularly relevant for Japan and southern Europe (see Chapter 2 of the April 2018 WEO for a discussion of the changes in labor force participation rates across advanced economies).

For emerging market and developing economies, growth is projected to stabilize at about 4.8 percent over the medium term. The combination of higher growth than in advanced economies and the group's rising weight in global GDP translates into a significant increase in emerging market and developing economies' share of global growth, from 76 percent in 2019 to about 85 percent in 2024.

The medium-term growth forecast incorporates continued strong investment growth in emerging market and developing economies, accounting for more than one-third of their GDP growth rate during the projection horizon (Figure 1.14). In turn, this robust investment path is predicated on a smooth trajectory for the drivers of capital spending; a gradual tightening in financial conditions (which is particularly relevant to the investment outlook in the emerging market and developing economy group, given the rapid buildup of

Figure 1.14. Contributions to GDP Growth
(Percent)

Over the forecast horizon, investment growth in emerging market and developing economies is projected to account for more than one-third of their GDP growth rate.



Source: IMF staff estimates.

leverage during years of low interest rates); quick resolution of trade disagreements and subsequent easing of trade tensions; and broader policy actions that help reduce uncertainty. Chapter 3 discusses how the retreat from trade integration threatens the long-standing downward trend in the relative price of capital goods and how this could weigh on the investment prospects of developing economies.

The medium-term growth forecast for emerging market and developing economies reflects important differences across regions. In emerging Asia, growth is expected to remain above 6 percent through the forecast horizon. Central to this smooth growth profile is a gradual slowdown in China to 5.5 percent by 2024 as internal rebalancing toward a private-consumption and services-based economy continues and regulatory tightening slows the accumulation of debt and associated vulnerabilities. Growth in India is expected to stabilize at just under 7¾ percent over the medium term, based on continued implementation of structural reforms and easing of infrastructure bottlenecks.

In Latin America, growth is projected to increase from 2.4 percent in 2020 to 2.8 percent over the medium term. Financial stabilization and recovery in Argentina, where growth is projected to strengthen to about 3½ percent over the medium term, contributes to that region's growth improvement. So is stable, though moderate, growth in Brazil and Mexico (in the range of 2¼–2¾ percent) as structural rigidities, subdued terms of trade, and fiscal imbalances (particularly for Brazil) weigh on the outlook.

Activity in emerging Europe is projected to pick up from the current post-global-financial-crisis low, with the region expected to grow just above 3 percent over the medium term. This improvement reflects primarily the forecast for Turkey, where activity is projected to gradually strengthen after the economy returns to positive annual growth in 2020. Over the medium term, Turkey's growth is projected to pick up to 3.5 percent as domestic demand recovers from the current sharp contraction that is reducing macroeconomic and financial imbalances. For other economies in the region with robust growth rates in recent years, such as Poland and Romania, growth is expected to moderate to about 3 percent over the medium term, reflecting the fading of stimulus from EU investment funds and accommodative policies.

The outlook for the Commonwealth of Independent States is for growth to stabilize at 2.4 percent over the medium term. This largely reflects sluggish growth in Russia of about 1½ percent over the medium term, weighed down by the modest outlook for oil prices and structural headwinds.

Prospects vary across sub-Saharan Africa, reflecting the heterogeneity of the economies, associated with disparities in the level of development, exposure to weather shocks, and commodity dependence. For the region as a whole, growth is projected to increase from 3.7 percent in 2020 to about 4 percent in 2024 (although for close to two-fifths of economies, the average growth rate over the medium term is projected to exceed 5 percent). Growth prospects for commodity exporters are weighed down by the soft outlook for commodity prices, including for Nigeria and Angola, where growth is expected to reach about 2.6 percent and 3.9 percent, respectively, in the medium term. In South Africa, growth is projected

to stabilize at 1¾ percent over the medium term as structural bottlenecks continue to weigh on investment and productivity, and metal export prices are expected to remain subdued. Rising debt-service costs as financial conditions tighten globally and difficult adjustment processes to diversify production structures away from resource extraction are expected to weigh on growth in many economies across the region.

The medium-term outlook for the Middle East, North Africa, Afghanistan, and Pakistan region is largely shaped by the outlook for fuel prices, needed adjustment to correct macroeconomic imbalances in certain economies, and geopolitical tensions. Growth in Saudi Arabia is expected to stabilize at about 2¼–2½ percent over the medium term, as stronger non-oil growth is countered by the subdued outlook for oil prices and output. In Pakistan, in the absence of further adjustment policies, growth is projected to remain subdued at about 2.5 percent, with continued external and fiscal imbalances weighing on confidence. Elsewhere in the region, activity is weighed down by the expected impact of sanctions in Iran, civil strife in Syria and Yemen, and rising debt-service costs and tighter financial conditions in Lebanon.

Convergence prospects are bleak for some emerging market and developing economies. Across sub-Saharan Africa and the Middle East, North Africa, Afghanistan, and Pakistan region, 41 economies, accounting for close to 10 percent of global GDP in purchasing-power-parity terms and close to 1 billion in population, are projected to grow by less than advanced economies in per capita terms over the next five years, implying that their income levels are set to fall further behind those economies (Figure 1.15, panels 1 and 2). Panel 3 of Figure 1.15 documents the heterogeneity in per capita growth rates in sub-Saharan Africa, where the majority of countries is projected to grow at rates well above the weighted average for the region.

Inflation Outlook

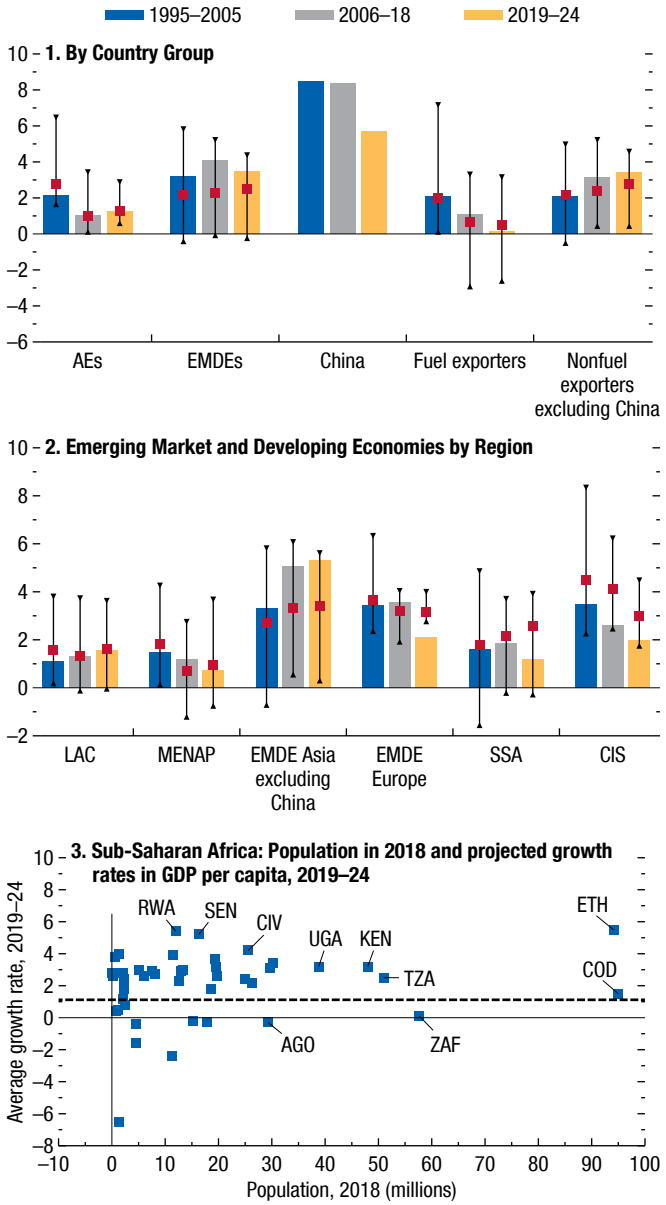
The outlook for inflation largely mirrors the prospects for growth and commodity prices discussed above. Inflation is projected to remain broadly at current levels for the advanced economy group, while for the emerging market and developing economy group excluding Venezuela, it is set to resume its steady decline of the past decade after a temporary modest rise this year.

Consistent with the softer outlook for commodity prices and the expected moderation in growth,

Figure 1.15. Per Capita Real GDP Growth

(Percent, unless noted otherwise)

41 economies accounting for close to 10 percent of global GDP in purchasing-power-parity terms and close to 1 billion in population are projected to grow by less than advanced economies in per capita terms over the next five years. Some regions, such as sub-Saharan Africa, feature considerable heterogeneity in per capita growth rates.



Source: IMF staff estimates.
Note: AEs = advanced economies; CIS = Commonwealth of Independent States; EMDE = emerging market and developing economy; LAC = Latin America and the Caribbean; MENAP = Middle East, North Africa, Afghanistan, and Pakistan; PPP = purchasing power parity; SSA = sub-Saharan Africa. 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. The fuel and nonfuel exporter subgroups are defined in Table D of the Statistical Appendix and cover EMDEs only. Data labels use International Organization for Standardization (ISO) country codes. The dashed line in panel 3 shows the weighted average per capita growth rate in SSA over 2019–24.

inflation is expected to decline to 1.6 percent this year in advanced economies, from 2.0 percent in 2018. With the US economy operating above potential this year and next, core inflation is expected to exceed the medium-term target of 2.0 percent, and decline to target thereafter. In the euro area, core inflation is expected to gradually increase from 1.2 percent in 2018 to about 2 percent in 2022 as the economy is operating above potential. Japan's core inflation rate (excluding fresh food and energy) is projected to rise to 1.4 percent by the end of 2020 as the consumption tax rate is raised in October this year, softening back to about 1.3 percent in the medium term.

Inflation in emerging market and developing economies excluding Venezuela, while stable across most regions, is nonetheless expected to firm to 4.9 percent this year from 4.8 percent in 2018, reflecting developments in a few economies. These include a temporary boost to consumer price inflation from a higher value-added tax rate in Russia and a gradual pickup in price pressure in India because of relatively strong demand conditions and a modest increase in food inflation from a low base. Still-elevated inflation expectations as Argentina adjusts to a new anchoring regime under a revamped monetary and exchange rate framework is also a notable temporary effect. As they fade, and growth stabilizes across the emerging market and developing economy group, inflation is set to moderate to about 4 percent over the medium term.

External Sector Outlook

Trade Growth

Global trade growth slowed considerably in 2018. The slowdown reflects some payback in the first quarter from very high growth in late 2017 and, subsequently, the impact of increased trade tensions on spending on capital goods (which are heavily traded) and a more general slowdown in global activity. The forecast for 2019 is for some further slowdown, reflecting to an important extent the weakness in trade growth in late 2018, followed by some recovery in 2020. In subsequent years, trade growth is projected to continue at broadly the same pace as in 2018 as investment demand gradually recovers in emerging market and developing economies, offsetting the slowdown in capital spending in advanced economies projected for 2020 and beyond.

Current Account Positions

Global current account deficits and surpluses are estimated to have widened marginally in 2018 compared with the previous year. Higher oil prices have been the main driver of this widening: they are estimated to have boosted the current account balance of oil exporters by about 3½ percent of their GDP. Symmetrically, the current account deficits of some Asian net oil importers (such as India, Indonesia, and Pakistan) have widened, reflecting their higher oil import bills. Among major current account surplus and deficit countries and regions, the current account surplus of China declined considerably, to 0.4 percent of GDP, while the US current account deficit was unchanged at 2.3 percent, and the surplus of the euro area declined marginally to 3.0 percent.

Forecasts for 2019 and beyond indicate a gradual reduction in global current account deficits and surpluses, particularly after 2020 (Figure 1.16).[1] The surplus of oil exporters will fall, as average oil prices are projected to drop from their 2018 level, and the current account surpluses in the euro area, Japan, and other advanced Asian economies are projected to decline gradually. Among deficit countries, the current account balance of the United States is projected to widen in 2019–20—driven by expansionary fiscal policy—and to narrow again thereafter. The recently imposed trade measures by the United States and retaliatory actions by trading partners are expected to have limited impact on overall external imbalances (see Chapter 4 and the 2018 *External Sector Report* for a discussion of the relationship between trade costs and external imbalances).

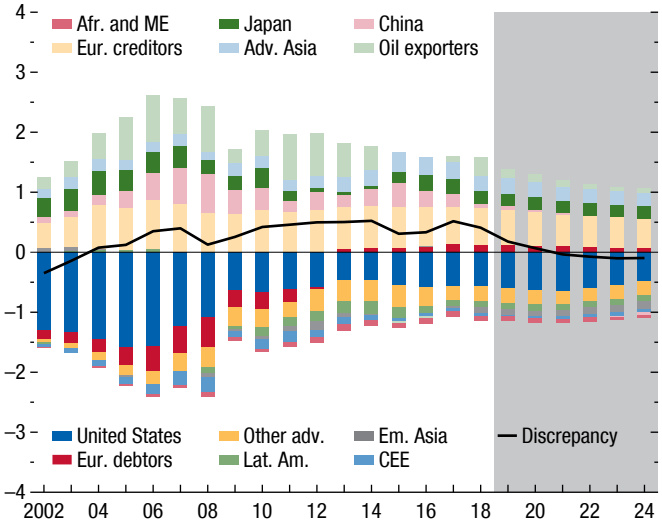
As highlighted in the *External Sector Report*, many countries' current account imbalances in 2017 were too large in relation to country-specific norms consistent with underlying fundamentals and desirable policies. As shown in panel 1 of Figure 1.17, excess current account balances in 2018 are estimated to have declined, supported in many cases by real exchange rate movements. Medium-term projections suggest, on average, further movement of current account balances in the same direction (Figure 1.17, panel 2).[2] At the same time, given that changes in macroeconomic fundamentals relative to 2017 affect not only current

[1]Balance of payments data show a notable positive world current account discrepancy in recent years. This discrepancy is assumed to decline gradually during the forecast period, with projected global current account surpluses compressing more than global current account deficits.

[2]The change in the current account balance during 2018 is estimated to have offset, on average, about one-fifth of the 2017 current account gap; the change between 2017 and 2024 would offset less than half of the 2017 gap.

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

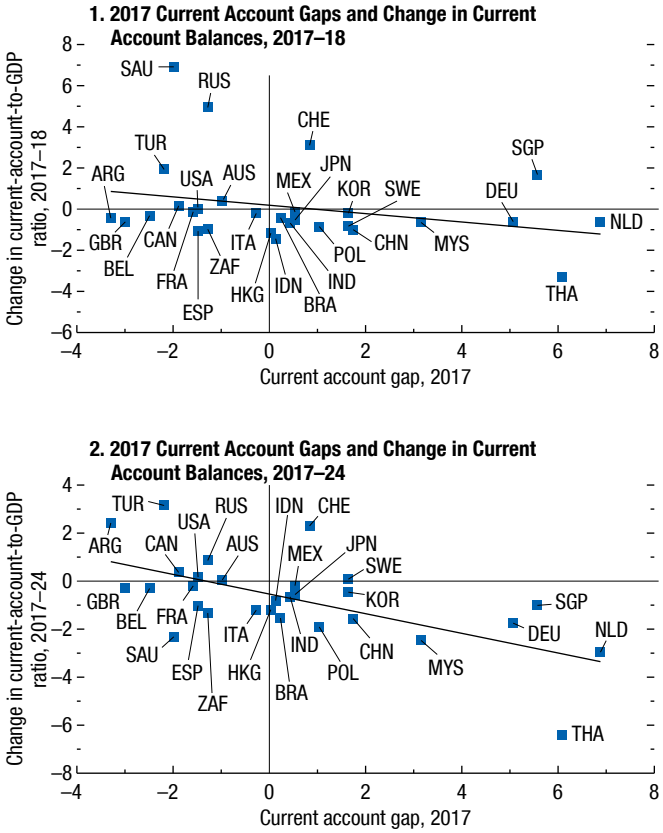
Global current account deficits and surpluses are projected to gradually decline, particularly after 2020.



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).

Figure 1.17. Current Account Balances in Relation to Economic Fundamentals

Excess current account balances in 2018 are estimated to have declined, supported in many cases by real exchange rate movements. Medium-term projections suggest, on average, further movement of current account balances in the same direction.



Source: IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.

account balances but also their equilibrium values, the path of future excess imbalances cannot be precisely inferred from this exercise.[3]

International Investment Positions

Changes in international investment positions reflect both net financial flows and valuation changes arising from fluctuations in exchange rates and asset prices. Given that WEO projections assume broadly stable real effective exchange rates and limited variation in asset prices, changes in international investment positions are driven by projections for net external borrowing and lending (in line with the current account balance), with their ratios to domestic and world GDP affected by projected growth rates for individual countries and for the global economy as a whole.[4,5]

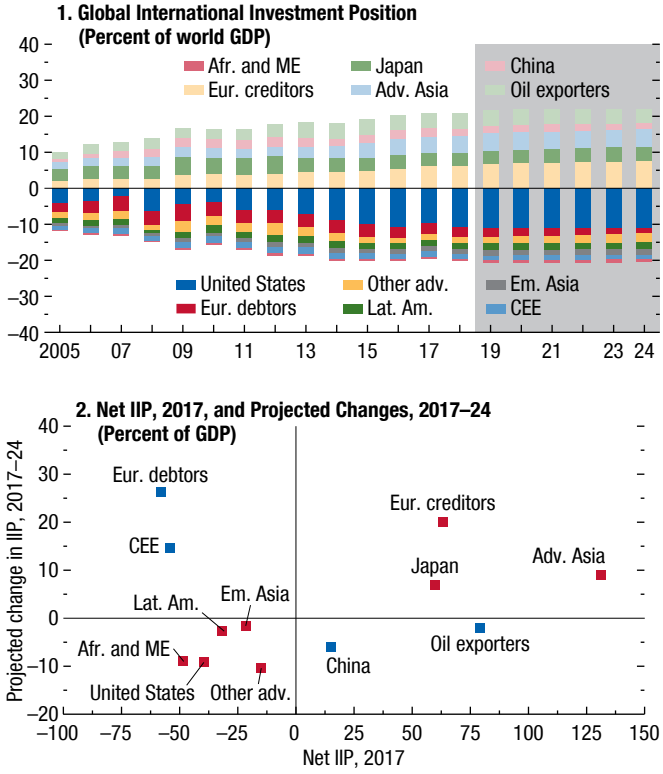
[3]For instance, an improvement in the terms of trade is typically associated with a more appreciated equilibrium exchange rate.

[4]WEO forecasts include projections of 10-year government bond yields, which would affect bond prices going forward, but the impact of those changes in bond prices on the valuation of external assets and liabilities is typically not included in international investment position forecasts.

[5]In addition to changes in exchange rates, the decline in global equity prices in late 2018 (compared with their levels at the end of 2017) implies deterioration of international investment positions at the end of 2018 in countries with significant net holdings of equity and foreign direct investment abroad and a corresponding improvement in positions for countries with net equity liabilities.

Figure 1.18. Net International Investment Position

Creditor and debtor positions as a share of world GDP are projected to widen slightly this year, and then to broadly stabilize as a share of world GDP over the forecast horizon.



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

As panel 1 of Figure 1.18 shows, creditor and debtor positions as a share of world GDP are projected to widen slightly this year, and then to broadly stabilize as a share of world GDP over the forecast horizon. On the creditor side, the growing creditor positions of a group of European advanced economies, a result of large projected current account surpluses, is offset by some reduction in the creditor position of China and oil exporters. On the debtor side, the debtor position of the United States increases initially and then stabilizes with the forecast reduction in its current account deficit as the fiscal stimulus is withdrawn, while the position of euro area debtor countries further improves significantly.

Similar trends are highlighted in panel 2 of Figure 1.18, which shows projected changes in net international investment positions as a percentage of domestic GDP across countries and regions between 2017 and 2024, the last year of the WEO projection horizon. The net creditor position of advanced European economies is projected to be above 80 percent of GDP and of Japan to exceed 65 percent, while the net creditor position of China would decline to below 10 percent. The debtor position of the United States is projected to approach 50 percent of GDP, some 9 percentage points above the 2017 estimate, while the net international investment position of a group of euro area debtor countries, including Italy and Spain, is expected to improve by more than 25 percentage points of their collective GDP. By 2024, net foreign liabilities, at about 32 percent of their GDP, would be half what they were a decade earlier.

Implications of Imbalances

Sustained excess external imbalances in the world's key economies and policy actions that threaten to widen such imbalances pose risks to global stability. The fiscal easing under way in the United States is projected to increase the US current account deficit. This could aggravate trade tensions and result in a faster tightening of global financing conditions, with negative implications for emerging market economies, especially those with weak external positions. Over the medium term, widening debtor positions in key economies could constrain global growth and possibly result in sharp and disruptive currency and asset price adjustments (see also the 2018 *External Sector Report*).

As discussed in the "Policy Priorities" section, the US economy—which is already operating beyond full employment—should implement a medium-term plan to reverse the rising ratio of public debt, accompanied by fiscal measures to gradually boost domestic capacity. This would help ensure more sustainable growth dynamics and contain external imbalances. Stronger reliance on demand growth in some creditor countries, especially those, such as Germany, with the policy space to support it, would help facilitate domestic and

global rebalancing while sustaining global growth over the medium term.

Risks: Skewed to the Downside

The outlook discussed in the preceding section envisages that global growth will stabilize in the first half of 2019 and recover gradually thereafter. If the ongoing trade truce between the United States and China is resolved with a rollback of tariff increases enacted in 2018, rising business confidence and financial sentiment could lift growth above this baseline forecast. Some optimism about a positive resolution of trade differences between the United States and China is indeed already reflected in market valuations. However, the possibility of further downward revisions is high, and the balance of risks remains skewed to the downside. Key sources of downside risk to the global outlook include:

Trade tensions: Global trade, investment, and output remain under threat from ongoing trade tensions. The November 30, 2018, signing of the US-Mexico-Canada Agreement to replace the North American Free Trade Agreement; the extension past March 1, 2019, of the truce between the United States and China on tariff increases; and the announced reduction in Chinese tariffs on US car imports are steps in the right direction. However, final outcomes remain subject to a negotiation process in the case of the US–China dispute and domestic ratification processes for the US-Mexico-Canada Agreement. In addition, a proposal to raise tariffs on all imported cars and car parts remains under consideration in the United States. Failure to resolve differences and a resulting increase in tariff barriers above and beyond what is incorporated into the forecast would lead to higher costs of imported intermediate and capital goods and higher final goods prices for consumers. Beyond these direct impacts, higher trade policy uncertainty and concerns of escalation and retaliation would reduce business investment, disrupt supply chains, and slow productivity growth. The resulting depressed outlook for corporate profitability could dent financial market sentiment and further dampen growth (see Scenario Box 1 of the October 2018 WEO).

Downside risks in systemic economies: The global growth profile is shaped by projections of a recovery in the euro area as one-off factors dissipate, avoidance of a no-deal Brexit, some firming of growth in China as stimulus measures take effect, and a gradual softening of growth in the United States as fiscal stimulus fades. The materialization of risks in these economies would lower global growth directly and through real and financial spillovers.

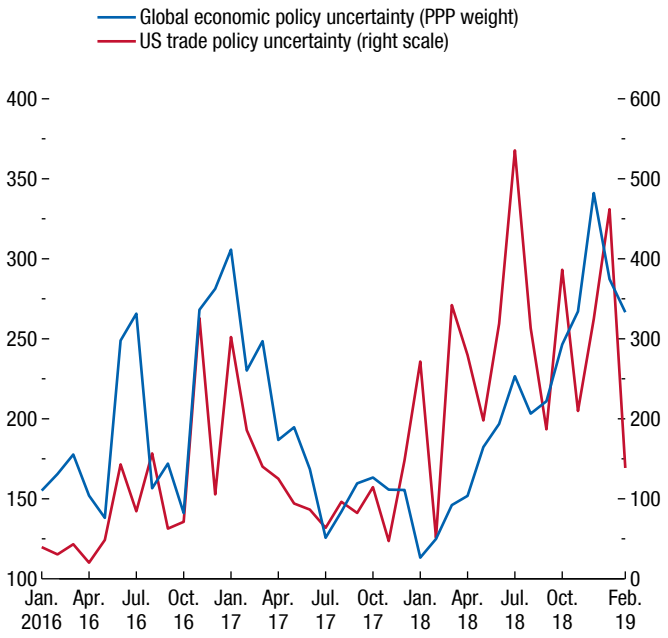
In Europe, a protracted period of elevated yields in Italy would put further stress on Italian banks, weigh on economic activity, and worsen debt dynamics. Other Europe-specific factors that could give rise to broader risk aversion and a widespread increase in risk spreads include the rising possibility of a no-deal Brexit and European Parliamentary election outcomes that delay or reverse progress on strengthening the euro area architecture. More generally, a no-deal Brexit that severely disrupts supply chains and raises trade costs could potentially have large and long-lasting negative impacts on the economies of the United Kingdom and the European Union (see Scenario Box 1).

In the United States, the market-implied path of expected policy rates remains below the Federal Open Market Committee's projections, raising the possibility of a market reassessment of the expected policy path if US economic data remain strong. This could result in higher US interest rates, renewed dollar appreciation, and tighter financial conditions for emerging market and developing economies with balance sheet vulnerabilities (in the form of elevated currency and maturity mismatches). As discussed in the April 2019 GFSR, the US credit cycle is at an advanced stage, with a rising share of lower-rated issuers in the corporate bond market and a growing volume of covenant-lite loans extended to highly indebted companies that offer limited protection for investors in the event of a default. If US growth were to weaken, such financial fragilities could amplify and prolong the slowdown by leading to debt-service difficulties in highly leveraged companies, credit rating downgrades, and rising rollover risks, with further negative feedback effects on corporate spending.

In China, the authorities have responded to the slowdown in 2018 by limiting the extent of financial regulatory tightening, injecting liquidity through cuts in bank reserve requirements, and reducing the personal income tax and value-added tax for small and medium enterprises. Nevertheless, if trade tensions fail to ease, activity may fall short of expectations. Furthermore, excessive stimulus to support near-term growth through a loosening of credit standards, or a resurgence of shadow banking activity and off-budget infrastructure spending, would heighten financial vulnerabilities,

Figure 1.19. Policy Uncertainty and Trade Tensions
(Index)

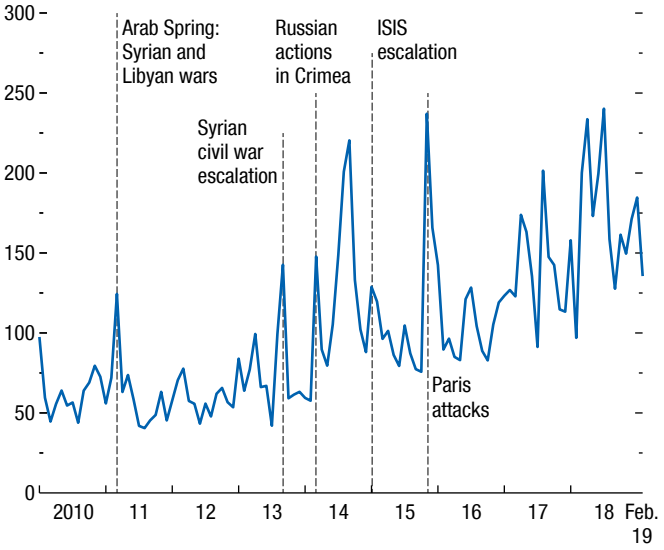
Global economic policy uncertainty remains elevated, notwithstanding a decline in US trade policy uncertainty.



Source: Baker, Bloom, and Davis (2016).
Note: The Baker-Bloom-Davis index of Global Economic Policy Uncertainty (GEPU) is a GDP-weighted average of national EPU indices for 20 countries: Australia, Brazil, Canada, Chile, China, France, Germany, Greece, India, Ireland, Italy, Japan, Korea, Mexico, the Netherlands, Russia, Spain, Sweden, the United Kingdom, and the United States. Mean of global economic policy uncertainty index from 1997 to 2015 = 100; mean of US trade policy uncertainty index from 1985 to 2010 = 100. PPP = purchasing power parity.

Figure 1.20. Geopolitical Risk Index
(Index)

High geopolitical risk complicates the outlook.



Source: Caldara and Iacoviello (2018).
Note: ISIS = Islamic State. The Caldara and Iacoviello Geopolitical Risk index reflects automated text-search results of the electronic archives of 11 national and international newspapers. The index is calculated by counting the number of articles related to geopolitical risk in each newspaper for each month (as a share of the total number of news articles), and normalized to average a value of 100 in the 2000–09 decade.

reduce future policy space, and raise downside risks to medium-term growth.

Other financial vulnerabilities: Cyberattacks on financial infrastructure are another source of risk because they can severely disrupt cross-border payment systems and the flow of goods and services. As noted in the April 2019 GFSR, wide-ranging reversals of postcrisis regulatory reform or a continuation of still relatively accommodative financial conditions could foster additional financial vulnerabilities, especially if financial intermediaries intensify their search for returns in an environment of slower global growth.

Political uncertainty: A host of other potential factors add downside risk to global investment and growth. These include policy uncertainty about the agenda of new administrations or surrounding elections, geopolitical conflict in the Middle East, and tensions in east Asia (Figures 1.19 and 1.20; see also see Box 1.5 of the October 2018 WEO). These risk factors in isolation may not have a strong impact on investment and growth beyond the countries directly affected, but a sequence of such events—combined with trade tensions and tighter global financial conditions—could have outsize effects on sentiment that reverberate on a broader scale.

Medium-term risks: Risks of a somewhat slower-moving nature with serious implications for the medium- and long-term outlook include pervasive effects of climate change and a decline in trust with regard to establishment institutions and political parties. The Intergovernmental Panel on Climate Change (IPCC) reported in October 2018 that, at current rates of increase, global warming could reach 1.5°C above preindustrial levels between 2030 and 2052, bringing with it extremes of temperature, precipitation, and drought. Such extremes would have devastating humanitarian effects and inflict severe, persistent output losses across a broad range of economies

(Chapter 3 of the October 2017 WEO). The warning from the IPCC comes amid substantial distrust of establishment institutions and mainstream political parties—a distrust often born of rising inequality and entrenched beliefs that existing economic arrangements do not work for all. The accompanying polarization of views and growing appeal of extreme policy platforms imperil the medium-term outlook by making it difficult to implement structural reforms for boosting potential output growth and strengthening resilience, including against climate-related risks.

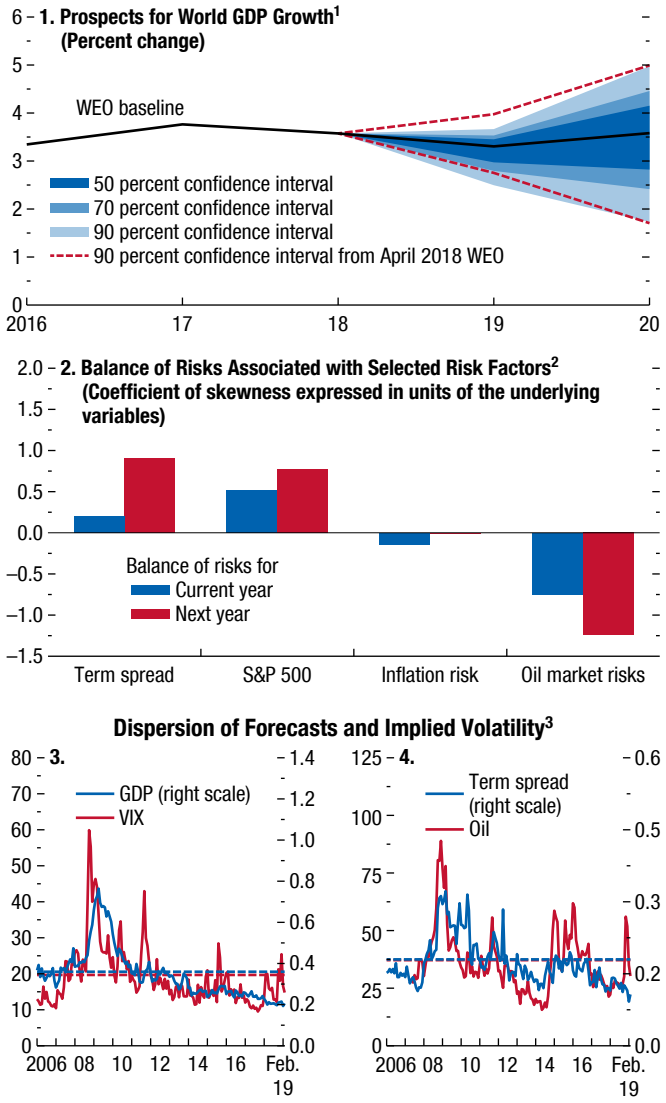
Fan chart analysis: Fan chart analysis—based on equity and commodity market data and the dispersion of inflation and term spread projections of private forecasters—shows a downward shift in the balance of risks relative to the April 2018 WEO (Figure 1.21). The worsening profile mostly reflects the anticipated drag associated with the risk of oil prices rebounding sharply from their recent rapid drop. As discussed in the April 2019 GFSR, growth-at-risk analysis suggests slightly higher near-term downside risks to global financial stability compared with those in the October 2018 report and continued elevated risks to medium-term growth.

Policy Priorities: Enhance Resilience, Raise Medium-Term Growth Prospects

The modest projected pickup in global economic growth next year relies to an important extent on the easing of macroeconomic strains in currently stressed emerging market and developing economies and on avoiding a sharp slowdown in advanced economies. In this context, avoiding policy missteps that could harm economic activity should be the main priority. Macroeconomic and financial policy should aim to guard against further deceleration where output may fall below potential and to ensure a soft landing where policy support needs to be withdrawn. At the national level, monetary policy should aim to keep inflation on track toward the central bank's target (and, where it is on target, to ensure that it stabilizes there) and to keep inflation expectations anchored. Fiscal policy will need to manage trade-offs between supporting demand and ensuring that public debt remains on a sustainable path. In particular, where fiscal consolidation is needed, policy should calibrate its pace to secure stability without suppressing near-term growth and harming programs that protect the vulnerable (see the April 2019 *Fiscal Monitor*). Financial sector policies can

Figure 1.21. Risks to the Global Outlook

The balance of risks to the outlook has shifted downward relative to the April 2018 *World Economic Outlook*.



Sources: Bloomberg Finance L.P.; Chicago Board Options Exchange (CBOE); Consensus Economics; Haver Analytics; and IMF staff estimates.
[1]The fan chart shows the uncertainty around the April 2019 *World Economic Outlook* (WEO) central forecast with 50, 70, and 90 percent confidence intervals. As shown, the 70 percent confidence interval includes the 50 percent interval, and the 90 percent confidence interval includes the 50 and 70 percent intervals. See Appendix 1.2 of the April 2009 WEO for details. The 90 percent intervals for the current-year and one-year-ahead forecasts from the April 2018 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.

complement these efforts by securing the strength of balance sheets and address vulnerabilities proactively by deploying macroprudential tools, such as countercyclical capital buffers or targeted sectoral capital buffers (or higher risk weights and provisions on such exposures) and developing, where needed, borrower-based tools to mitigate risks stemming from high debt vulnerabilities. This will enhance resilience to a potentially more volatile environment in global asset markets (as discussed in greater detail in the April 2019 GFSR).

If the current slowdown turns more severe and protracted than envisaged in the baseline, the macroeconomic policy stance should become more accommodative, particularly where output already is or could fall below potential and where there is policy space. If fiscal policy is on a consolidation path and monetary policy is constrained, its pace would have to slow to ensure adequate support for near-term demand. Where a weaker outlook and worsening market sentiment reinforce each other, the need for clear communication and cooperative efforts to tackle unresolved issues—such as the US–China trade dispute and Brexit—will become even more pressing.

Beyond 2020, the forecast of broadly stable growth at 3.6 percent, despite major subregions and key economies slowing over the medium term, relies to an important extent on weights shifting toward those with relatively higher growth rates. Boosting medium-term growth prospects remains a priority for most advanced economies. A policy priority for several emerging market and developing economies continues to be a stronger revenue base for needed social and infrastructure spending. Sustained poverty reduction and increased inclusiveness, as well as debt sustainability, depend on it. A second cross-cutting theme is the need to ensure that the gains benefit all segments of society through adequate social spending on education, health, and safety net policies that protect the vulnerable. (Box 1.3 documents a related set of challenges stemming from persistent spatial disparities in labor market outcomes and productivity within countries.)

Advanced Economies—Policy Priorities

Among *advanced economies*, consumer price inflation generally remains below target, and wage pressures are relatively subdued (although picking up in a few cases). Monetary policy should stay accommodative in these economies until inflation starts showing clear signs of rising toward central banks' targets. With monetary policy trained on countercyclical demand management, fiscal policy should emphasize measures that boost potential output and raise inclusiveness, while maintaining public finances on a sustainable path. In the absence of a major deceleration of growth, countries where public debt is high should pursue gradual fiscal consolidation that avoids sharp drags on growth and secures adequate social insurance for the vulnerable. If there are clear signs of a substantially deeper and more protracted slowdown, monetary and fiscal policy would need to become more accommodative. Further safeguarding financial systems—including through raising bank capital and liquidity buffers, enhancing macroprudential oversight of nonbank financial institutions, developing macroprudential tools as needed, and avoiding a rollback of postcrisis regulatory reforms—remains vital in the context of continued monetary policy accommodation.

The modest medium-term outlook for the group (potential output growth rates are estimated in the range of 0.5–1.5 percent for most advanced economies) calls for measures to raise labor force participation rates and productivity growth. These include public investment (coupled with incentives to raise private spending as needed) in infrastructure, lifelong learning and workforce skills, and research and development. Protecting dynamism—by ensuring that competition policy frameworks facilitate new firm entry and curb incumbents' abuse of market power—remains vital when a few big firms are cornering increasingly larger market shares across technology, retail, financial services, and other sectors in many advanced economies (Chapter 2 documents trends in market power across advanced economies and their macroeconomic implications).

In the *United States*, even though output is already above potential, the Federal Reserve's patient approach to normalization is appropriate, considering the uncertainty around the baseline and muted inflation. The path of the policy interest rate should depend on incoming data, the economic outlook, and risks. Under the WEO baseline projection, labor markets are expected to tighten further and wage growth to pick up, likely warranting a further rate hike in the second half of the year. Rapid tightening could weaken inflation expectations and activity, while delayed tightening could contribute to financial vulnerabilities and a sharper downturn down the road. The 2017 tax overhaul and subsequent increases in spending have widened the fiscal deficit and added to an already

unsustainable US public debt profile. Fiscal policy should focus on raising the revenue-to-GDP ratio, with greater reliance on indirect taxes to counteract the anticipated rise in aging-related spending. Regarding financial sector policies, the current risk-based approach to regulation, supervision, and resolution should be preserved (and strengthened in the case of nonbank financial institutions) to counteract vulnerability from weaker corporate credit underwriting standards, rising corporate leverage, and emerging cybersecurity threats. Improving medium-term growth prospects will require incentivizing greater labor force participation and enhancing workforce skills.

In the *United Kingdom*, despite the historically low unemployment rate and a recent pickup in wage growth, the uncertainty surrounding Brexit negotiations calls for a cautious, data-dependent monetary response. Similarly, the envisaged pace of fiscal consolidation, anchored by the objective of narrowing the cyclically adjusted public sector deficit to below 2 percent of GDP by 2020–21, should be adjusted if growth slows materially. Structural reforms should focus on improving infrastructure quality and boosting the basic skills of high school graduates, and labor market policies should ensure a smooth redeployment of workers to expanding sectors from those negatively affected after Brexit.

In the *euro area*, core inflation continues to remain well below target and wage growth relatively sluggish despite labor markets tightening in many economies in the currency zone. Monetary policy should continue to remain accommodative. In this regard, the forward guidance from the European Central Bank that it will reinvest maturing securities until well after the first interest rate hikes is welcome. Fiscal space varies across the currency area. In some countries (France, Italy, Spain), buffers should be rebuilt gradually to avoid reigniting adverse feedback spirals between sovereign and bank risks and to secure stability. In Germany, where growth has been slowing, the available fiscal space can be used to increase public investment in physical and human capital or reduce the labor tax wedge—measures that would boost potential output and help with external rebalancing. Prompt adoption of these measures is essential if the current weakness in activity persists. If a severe downside scenario were to materialize in the euro area, available monetary policy tools could be complemented with fiscal easing by countries that have appropriate fiscal space and financing conditions. A synchronized fiscal response, albeit appropriately differentiated across member countries, can strengthen the area-wide impact. Completing the banking union and continuing the cleanup of balance sheets remain vital for strengthening credit intermediation in some economies. Structural reform priorities vary according to country-specific needs. In France, efforts to reduce corporate administrative burdens, promote innovation, and strengthen competition in the services sector would complement steps taken to improve labor market flexibility and boost potential growth. In Italy, measures to decentralize wage bargaining would help align wages and labor productivity, thereby enhancing labor market flexibility and boosting employment growth. In Spain, efforts to reduce labor market duality would support job creation and incentivize private investment.

In *Japan*, sustained monetary accommodation will be necessary to lift inflation expectations and progress toward the central bank's target. Fiscal policy should be geared toward ensuring long-term fiscal sustainability while protecting growth. The coupling of the planned October increase in the consumption tax rate with fiscal measures to support near-term activity is welcome. A sustainable debt trajectory calls for further gradual and steady increases in the consumption tax rate and reforms of the social security framework. The success of the broad Abenomics agenda of reflating the economy depends crucially on also lifting productivity growth and wage inflation, for which reducing labor market duality to increase productivity of nonregular workers remains vital. Durably counteracting the aging-induced decline in labor force growth will require, among other initiatives, further raising female labor force supply and encouraging more use of foreign labor.

Emerging Market and Developing Economies—Policy Priorities

The variation in performance across e*merging market and developing economies* in the recent past in a context of volatile external conditions has highlighted the importance of policy frameworks oriented toward securing growth prospects and strengthening resilience. Monetary policy should focus on anchoring inflation expectations where inflation remains high or recent currency depreciations threaten pass-through to domestic prices. Where expectations are well anchored, monetary policy can support domestic activity as needed (see Chapter 3 of the October 2018 WEO).

Tighter external financial conditions can expose vulnerabilities related to high public debt as well as balance sheet maturity and currency mismatches accumulated during years of ultralow interest rates (see Box 1.1 of the April 2019 *Fiscal Monitor* for an analysis of the fiscal implications of potentially tighter financial conditions in emerging market economies). Fiscal policy should ensure that debt ratios remain sustainable, which would also contain borrowing costs and create space to combat downturns. Improving the targeting of subsidies, rationalizing recurrent expenditures, and mobilizing revenue can help preserve capital outlays needed to boost potential growth and the social spending that improves inclusion. In some cases, macroprudential regulatory and supervisory frameworks will have to be strengthened to deal with high private debt burdens, rein in excess credit growth, and contain balance sheet currency and maturity mismatches. Exchange rate flexibility can complement these policies by helping to buffer shocks. It can also help prevent persistent misalignments of relative prices that lead to resource misallocation and the buildup of financial imbalances. Across all economies, reforms to ensure sustainable, inclusive growth remain essential, particularly given that the medium-term prospects for per capita growth are relatively subdued for many economies in this group.

In *China*, the economy's reliance on credit has declined somewhat following regulatory efforts to rein in shadow banking and control the buildup of debt. Despite recent weaker momentum stemming from trade tensions, policies should stay focused on deleveraging and rebalancing the economy away from a growth model based on credit-fueled investment toward one that is more sustainable and led by private consumption. Reducing leverage in the economy will require continued scaling back of widespread implicit guarantees on debt, early recognition and disposal of distressed assets, and fostering more market-based credit allocation that better aligns risk-adjusted returns with borrowing costs. Building on the recent increases in the private consumption share of GDP (up close to 40 percent in 2017 from 35 percent in 2012), continued rebalancing will require a more progressive tax code; higher spending on health, education, and social transfers; and reduced barriers to labor mobility. Enhancing productivity growth will require reducing the footprint of state-owned enterprises and further reducing barriers to entry in certain sectors, such as telecommunications and banking. To avoid a sharp near-term growth slowdown that could derail the overarching reform agenda, some centrally financed on-budget fiscal expansion in 2019 may be appropriate. It should avoid large-scale infrastructure stimulus and instead emphasize targeted transfers to low-income households so as to lower poverty and inequality (Box 1.2 of the April 2019 *Fiscal Monitor*).

In *India*, continued implementation of structural and financial sector reforms with efforts to reduce public debt remain essential to secure the economy's growth prospects. In the near term, continued fiscal consolidation is needed to bring down India's elevated public debt. This should be supported by strengthening goods and services tax compliance and further reducing subsidies. Important steps have been taken to strengthen financial sector balance sheets, including through accelerated resolution of nonperforming assets under a simplified bankruptcy framework. These efforts should be reinforced by enhancing governance of public sector banks. Reforms to hiring and dismissal regulations would help incentivize job creation and absorb the country's large demographic dividend; efforts should also be enhanced on land reform to facilitate and expedite infrastructure development.

In *Argentina*, projections for growth have been revised upward, and higher nominal wages and rising inflation expectations are expected to generate more persistent inflationary pressures in 2019 than projected in the October 2018 WEO. Downside risks to the economy remain sizable, the materialization of which could lead to a shift in investor preferences away from peso assets and put pressure on the currency and the capital account. Against this backdrop, continued implementation of the stabilization plan under the IMF-supported economic reform program is crucial to shore up investor confidence and restore sustainable growth that lifts living standards for all segments of society. To this end, meeting the primary fiscal balance target of zero in 2019 and 1 percent of GDP in 2020 is essential to bring down financing needs and avoid reigniting liquidity pressures. Continued achievement of monetary targets will be crucial to re-anchoring inflation expectations and rebuilding central bank credibility. Complementing these efforts to stabilize the economy in the near term, a resumption of the structural reform agenda will help lift the economy's medium-term growth prospects.

In *Brazil*, the main priority is to contain rising public debt while ensuring that needed social spending remains intact. The spending cap introduced in 2016,

which envisages a 0.5 percent of GDP a year improvement in the primary fiscal balance, is a step in the right direction toward facilitating fiscal consolidation. However, more up-front adjustment is needed, particularly cuts to the public wage bill and pension reforms to curb rising outlays—while protecting vital social programs for the vulnerable. With inflation still close to target, monetary policy can stay accommodative to support aggregate demand as needed. Building on recent reforms to labor and subsidized credit markets, efforts to improve infrastructure and the efficiency of financial intermediation would help lift productivity and boost medium-term growth prospects.

In *Mexico*, where sovereign spreads have widened significantly since October, it is essential to avoid delaying needed structural reforms, as this would create additional uncertainty detrimental to private investment and employment growth. Sticking with the medium-term fiscal consolidation plan (and possibly aiming for an even larger reduction in the deficit) would stabilize the public debt, lift confidence, and create space both to respond to shocks and to accommodate aging-related spending needs. Provided inflation remains subdued and expectations well anchored, monetary policy can stay accommodative with scope to cut rates if needed.

In *Turkey*, the New Economic Program provides a framework to deal with complex issues in the economy. Against this backdrop, a comprehensive and credible policy mix is needed to secure macroeconomic stability. The pace of fiscal consolidation should be appropriately calibrated given the subdued outlook and—in a context of high inflation and elevated inflation expectations—the limited scope for monetary policy to support activity. Steps to rationalize spending channeled through public-private partnerships and more transparency in this area would help underpin the fiscal anchor. Greater transparency about financial balance sheet health, and further strengthening balance sheets where needed, would be helpful in addressing lingering uncertainties, as would additional efforts to address nonfinancial corporate sector stress, including debt vulnerabilities.

In *Russia*, the recent revision of the fiscal rule delivered a procyclical positive fiscal impulse and could weaken policy credibility. Further fiscal consolidation will be needed over the medium term to ensure sustainability. The central bank policy rate has been raised above the neutral rate following higher inflation pressure in the second half of 2018. Accordingly, provided inflation does not rise, there is room to provide monetary support should activity weaken in the near term. Building on efforts to strengthen financial stability (including closure of weak banks and reforms to the resolution framework), the structure and governance of the banking system should be geared toward enhancing efficiency of credit intermediation. In addition, continued efforts to improve property rights and governance, reform labor markets, and invest in infrastructure would boost private investment and productivity growth and support convergence toward advanced economy income.

In *South Africa*, gradual fiscal consolidation will be needed to stabilize the public debt. Public wage savings should be given priority to preserve vital social outlays for the vulnerable and fund productive investment to boost potential growth. Transfers to public entities should be contingent on downsizing and eliminating wasteful spending. The fiscal consolidation could also be supported by expanding the tax base and through strengthening tax administration and effective anti-tax-avoidance provisions that reduce profit shifting. Structural reforms, particularly to product and labor markets, would foster an environment conducive to expanding private investment, job creation, and productivity growth.

Low-income developing countries share many of the policy priorities of the emerging market economy group, especially in raising resilience to volatile external conditions. Several low-income "frontier" economies have seen external financing conditions tighten sharply in recent months. Priorities include strengthening monetary and macroprudential policy frameworks while preserving exchange rate flexibility. Public debt stocks have increased rapidly in this group during a period of low interest rates. As financial conditions turn less accommodative, rollover risks may increase, and wider sovereign spreads may spill into higher borrowing costs for firms and households. Fiscal policy should be geared toward containing the buildup of debt while protecting measures that help the vulnerable and support progress toward the Sustainable Development Goals. This would require broadening the revenue base; strengthening tax administration; eliminating wasteful subsidies; and prioritizing spending initiatives on infrastructure, health, education, and poverty reduction.

While gradual fiscal consolidation is a priority shared across the group of low-income developing countries, *commodity-exporting developing economies*

face additional pressure from the subdued outlook for commodity prices. Reorienting spending toward infrastructure and social outlays, together with boosting domestic revenue mobilization by broadening the tax base and strengthening revenue administration, are crucial in this regard. Beyond placing public finances on a sustainable footing, an overarching priority for this group is to diversify away from dependence on resource extraction and refining. While country circumstances differ, common policy areas help achieve this broad goal. These include sound macroeconomic management, ensuring broad-based labor force participation by lifting education quality and worker skills, reducing infrastructure shortfalls, boosting financial development and inclusion, and incentivizing the entry of firms and private investment (by strengthening property rights, contract enforcement, and reducing barriers to trade).

Low-income developing countries have also borne the brunt of climate change and potent natural disasters. Lowering the fallout from these events will require adaptation strategies that invest in climate-smart infrastructure, incorporate appropriate technologies and zoning regulations, and deploy well-targeted social safety nets.

Multilateral Policies

Since early 2018, trade actions by the United States and retaliation by trading partners have taken an increasing toll on sentiment. Policymakers should cooperate to address the sources of dissatisfaction with the rule-based trading system, reduce trade costs, and resolve disagreements without raising tariff and nontariff barriers. Doing so would avoid injecting further destabilizing dynamics into a slowing global economy. Beyond trade, fostering closer cooperation on a range of issues would help broaden the gains from global economic integration. The agenda includes completing the postcrisis financial regulatory reforms, strengthening the global financial safety net to reduce the need for countries to self-insure against external shocks, tackling international taxation issues and minimizing cross-border avenues for tax evasion, and promoting mitigation of and adaptation to climate change.

Trade: Cross-border integration through trade openness has been a critical source of productivity growth, knowledge diffusion, and welfare gains for countries at all income levels (see, for example, Chapter 2 of the October 2016 WEO for estimates of welfare gains from trade and Chapter 3 of this WEO on the role of trade integration in lowering capital goods prices and boosting investment globally over the past three decades). Unwinding the trade-restrictive measures implemented so far, reducing trade costs further, and resolving disagreements durably within the rule-based multilateral trade system could therefore reignite a major driver of global productivity growth. This would be supported by modernizing the World Trade Organization (WTO) rules and commitments to address areas of growing relevance, such as services and e-commerce and subsidies and technology transfer—and ensuring that existing rules are applied and enforced, for example, by urgently resolving the impasse over the WTO's Appellate Body. Well-designed and ambitious regional arrangements—such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and the EU-Japan Economic Partnership Agreement—can also help. More generally, there is a need to enhance the governance of trade. For example, the idea that all countries need to participate in all negotiations is being revisited; this could allow those countries that wish to move further and faster to do so, while keeping new agreements inside the WTO and open to all WTO members.

Global financial stability: Global cooperation is needed to safeguard the significant gains achieved over the past decade in strengthening the financial system and to resist pressure to roll back portions of the reform. The reform agenda should be fully implemented. Examples include implementing the leverage ratio and net stable funding ratio; devising effective resolution frameworks and enhancing supervisory intensity for globally important financial institutions, especially across borders; bolstering the tools and policymaking capabilities of macroprudential entities; and mitigating systemic risk from nonbank financial institutions through continued vigilance on the regulatory perimeter and filling data gaps. Coordinated and collective action is needed to confront emerging risks, such as those arising from the growing importance of central counterparties and the potential for cybersecurity breaches, and to combat cross-border money laundering and the financing of terrorism. These would also help limit the withdrawal of correspondent banking relationships, which are vital to low-income countries' access to international payment systems. In addition, an adequately financed global safety net can protect economies with robust fundamentals that may otherwise be vulnerable to cross-border contagion and spillovers when downside risks to the global outlook are elevated.

Taxation: With the rise of multinational enterprises, international tax competition has made it increasingly difficult for governments to collect revenues needed to finance their budgets. Multilateral cooperation is needed to reinforce existing efforts aimed at tackling tax evasion and avoidance and mitigation of tax competition, such as through the Organisation for Economic Co-operation and Development–Group of Twenty Base Erosion and Profit Shifting initiative (see Box 1.3 of the April 2019 *Fiscal Monitor*).

Longer-term challenges: Multilateral cooperation is indispensable for tackling longer-term issues that imperil the sustainability and inclusiveness of global growth. Curbing greenhouse gas emissions and containing the associated consequences of rising global temperatures and devastating climate events are a global imperative (see Chapter 3 of the October 2017 WEO on the macroeconomic impact of weather shocks and IMF 2019 for a discussion of fiscal policy options for implementing climate change mitigation and adaptation strategies). By adding to migrant flows, climate-related events compound an already-complex situation of refugee flight from conflict areas, often to countries already under severe strain. International migration will become increasingly important, too, as many advanced economies confront the challenges of their aging populations. International cooperation would create opportunities to streamline the integration of migrants—and so help to maximize the labor supply and productivity benefits they bring to destination countries, and to support remittance flows that lessen the burden on source countries. Finally, a truly global effort is also needed to curb corruption, which is undermining faith in government and institutions in many countries (see the April 2019 *Fiscal Monitor*).

Scenario Box 1.1. A No-Deal Brexit

The IMF's Global Integrated Monetary and Fiscal model is used to explore the economic implications of the United Kingdom's withdrawal from the European Union without a free trade deal in the second quarter of 2019. Two scenarios are presented, providing a range of possible outcomes. Both scenarios include measures already in place or announced that seek to lower the short-term impact, including temporary exemption of a large share of UK imports (from both the European Union and countries outside the European Union) from tariffs in the event of no-deal, and temporary recognition regimes for some financial services. Differences between the two scenarios illustrate some of the uncertainty about the impact of a no-deal Brexit. Scenario A assumes no border disruptions and a relatively small increase in UK sovereign and corporate spreads. Scenario B incorporates significant border disruptions that increase import costs for UK firms and households (and to a lesser extent for the European Union) and a more severe tightening in financial conditions. Both scenarios are compared to the April 2019 *World Economic Outlook* (WEO) baseline, which assumes that the United Kingdom leaves the European Union's customs union and single market and reaches a broad free trade agreement with the European Union, with a gradual transition to the new regime.

There are several common assumptions behind the two scenarios:

Trade costs with European Union (tariffs): Under a no-deal Brexit, UK exports to the European Union revert to being subject to the World Trade Organization's Most Favored Nation (MFN) rules, with tariffs increasing by mid-2019 as a result (see Scenario Table 1 for a comparison of some of the assumptions in the current baseline and in the no-deal Brexit scenarios). Imports from the European Union not subject to the temporary tariff regime also revert to MFN rules in mid-2019, while those subject to the regime revert in mid-2020.

Trade costs with European Union (nontariff barriers): The scenarios assume an increase in nontariff trade costs, reflecting the emergence of a customs and regulatory border between the United Kingdom and the European Union, including the loss of passporting rights for the United Kingdom's financial sector. Most of the increase in nontariff costs on the EU side takes place in the first year, with the exemption of nontariff barriers on some services, such as certain financial sector activities and transport, which increase in the second year. On the UK side, there is a gradual three-year transition, reflecting the United Kingdom's stated approach to prioritize continuity by temporarily recognizing EU standards in multiple areas. Overall, the reduction in nontariff barriers gained from the United Kingdom's EU membership—about 20 percent in tariff-equivalent terms—is eventually reversed.[1]

Trade costs with countries outside the European Union: The United Kingdom loses most third-country free trade agreements currently in place through its EU membership (covering about 15 percent of all UK trade). UK exports to those countries revert to MFN rules for two years starting in mid-2019, while UK imports do so either in mid-2019 or in mid-2020, depending on whether the temporary tariff regime

[1]IMF (2018). The box does not assume additional disruptions in the financial sector beyond the loss of passporting rights, which is modeled as a barrier to services trade.

Scenario Table 1. Trade Assumptions in the Baseline, Scenario A, and Scenario B

			No-Deal Scenarios	
		The WEO Baseline	A	B
Trade arrangements	Trade with third countries	The United Kingdom retains access to existing agreements between EU and third countries	The United Kingdom sets tariffs unilaterally to zero on 87 percent of its imports from mid-2019 to mid-2020; the United Kingdom loses access to most existing agreements, secures new agreements by 2021	
	Trade with the European Union	No tariff increases; nontariff barriers gradually increase by 10 percent in tariff equivalent terms	Tariffs increase by 4 percent in mid-2019 (mid-2020 for UK imports subject to temporary tariff regime); nontariff barriers increase gradually by an additional 14 percent (in tariff equivalent terms) relative to baseline	
Border disruption		No	No	Yes
Tightening of financial conditions		No	Small	More severe

Scenario Box 1 *(continued)*

applies. The scenarios assume new trade agreements are secured after two years, and on terms similar to those currently in place.

Stricter immigration policies: Both scenarios assume a reduction in the net migration flow from the European Union to the United Kingdom of 25,000 people per year until 2030, in line with the UK government's intention to reduce net immigration. For simplicity, it is assumed that the net flow of migrants to the European Union increases by a similar amount.

The scenarios differ in the extent of border disruptions and in the reaction of financial markets following no deal:

Border disruption: To illustrate the possible contribution of border disruptions to a no-deal Brexit, Scenario A makes the simplifying assumption that no such disruptions take place. Under Scenario B instead, delays in the customs-clearing process arise despite the preparatory measures, raising import costs for firms and households in the United Kingdom, and to a lesser extent in the European Union. The trade disruptions in that scenario are estimated to cause in the first and second year, respectively, a decline in UK GDP of 1.4 percent and 0.8 percent and a decline in EU GDP of 0.2 percent and 0.1 percent.[2]

Financial conditions: The simulations include additional effects coming from a tightening of financial conditions, lasting through the second half of 2020, due to greater uncertainty, a decline in confidence, or both. The tightening is small in Scenario A, with UK sovereign spreads increasing by 12.5 basis points and UK corporate spreads increasing by 20 basis points, and no tightening of financial conditions in the European Union or the rest of the world. Given the border disruption costs, the tightening is more severe in Scenario B, with UK sovereign and corporate spreads increasing by 100 basis points and 150 basis points, respectively.[3] Corporate spreads would increase temporarily by 25 basis points in the European Union, and by 15 basis points in the rest of the world.

Regarding the scope for a policy response, it is assumed that monetary policy in the United Kingdom is eased according to a Taylor-type reaction function, while the euro area is unable to ease conventional monetary policy further due to the lower bound constraint on nominal interest rates. Should additional unconventional monetary policy measures be implemented, the decline in EU GDP would be smaller in the short to medium term than what is simulated here.[4] The scenarios also assume some automatic fiscal stabilization, which is reflected in an increase in the overall government deficit in both the United Kingdom and the European Union in the short to medium term.

Before turning to the results, it is worth stressing that the simulations do not reflect the full effects from Brexit, as some of these effects are already in the current baseline. In addition, the range of possible effects provided by the two alternative scenarios captures some, but not all, of the uncertainty about the timing and magnitude of the channels associated with a no-deal Brexit, as well as possible policy responses. The assumed increase in nontariff barriers could be considerably smaller, and the outcome more benign, if the two sides recognize existing product standards, at least temporarily. The extent of the border disruption and the tightening of financial conditions are also very uncertain, as is the degree to which financial sector output would decline in the long term due to the loss of passporting rights. The simulations do not include additional effects on productivity from higher trade costs, which could similarly weigh on long-term output, nor do they include possible effects stemming from capital outflows and additional pressures on the exchange rate.[5]

[2]The loss in GDP assumes there will be delays in the processing of imports from the European Union during the first month of the new regime (equivalent to 8 percent of UK imports). For comparison, the assumed effect from this channel is about half the effect assumed in the disorderly "no deal, no transition" scenario by the Bank of England (Bank of England 2018).

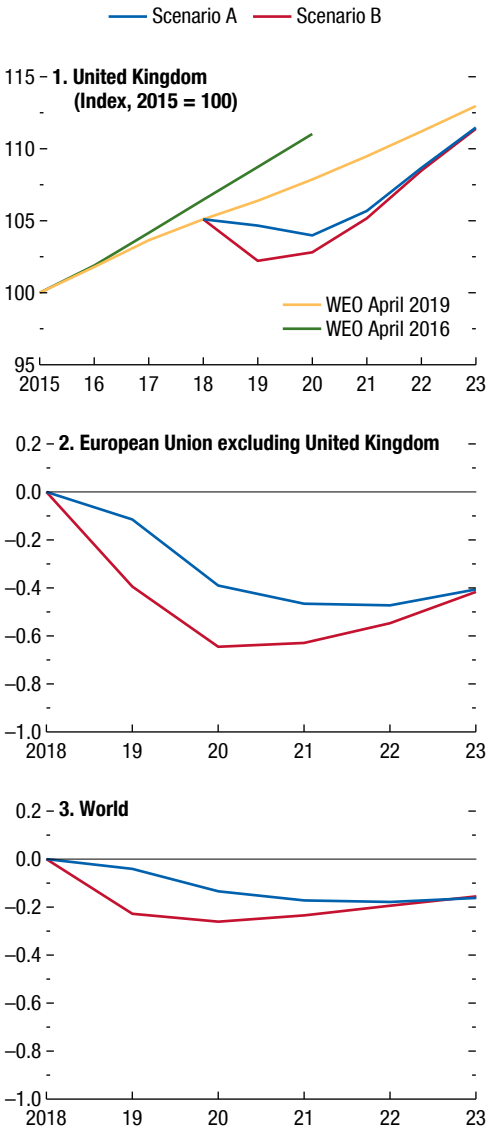
[3]The calibration of this layer is based on estimates according to which the Brexit vote outcome contributed about 100 basis points to corporate spreads in the United Kingdom (ECB 2017). The observed increase in spreads was smaller, as the Brexit vote effect was offset in part by accommodative monetary policy and supportive global macro conditions.

[4]The monetary policy response in the remaining regions follows a Taylor-type reaction function, except for Japan, which is also constrained by the lower bound on nominal interest rates. The latter does not play any role in the simulations given the small impact on that country.

[5]The simulations feature a small, temporary real depreciation of the pound, mainly due to an accommodative monetary policy. Effects on output from capital outflows are unclear. On one hand, a more depreciated exchange rate would support external competitiveness. On the other hand, there could be a negative shock on UK households' wealth, especially if financial conditions tighten further..

Scenario Box 1 *(continued)*

Scenario Figure 1. Real GDP in Brexit Scenario
(Percent deviation from control, unless noted otherwise)



Source: IMF staff estimates.
Note: WEO = *World Economic Outlook*.

The simulations are shown in Scenario Figure 1. Panel 1 plots the paths for UK GDP implied by the two alternative scenarios—the current (April 2019 WEO) baseline, and the WEO baseline from April 2016 (before the Brexit vote)—to help illustrate the effects of Brexit already present in the current baseline. Results for the European Union and the world in panels 2 and 3 are shown, instead, as deviations from the current baseline. Under Scenario A, the increase in trade barriers has an immediate negative impact on UK foreign and domestic demand. The more gradual approach on the UK side eases transition costs by limiting the increase in import costs in the short term. Other channels—modest financial tightening and stricter immigration policies—add little to the short-to-medium-term dynamics. The total negative effect on UK GDP (the difference between the yellow and blue line in panel 1) is about 3.5 percent by 2021. As UK monetary policy stays accommodative and wages and prices adjust, households and firms gradually replace imports with domestic production, and the economy recovers somewhat in the medium term. The decline in UK demand and the gradual increase in trade costs also lead to a decline in activity in the European Union, with a 0.5 percent decrease in GDP by 2021. The aggregate EU effects mask important heterogeneity across countries, given varying degrees of exposures to the United Kingdom.[6] Effects on other regions are negligible. The decline in the United Kingdom and the European Union accounts for most of the decrease in global GDP (0.2 percent over the same period).

The long-term effects of a no-deal Brexit relative to the current WEO baseline are the same in both alternative scenarios (shown in Scenario Figure 2) and reflect two channels. First, higher tariffs and nontariff barriers significantly reduce the returns to capital in the United Kingdom and the European Union. Consequently, firms' desired capital stock falls, reducing potential output in the long term. The impact, not surprisingly, is much larger in the United Kingdom. Second, stricter immigration policies reduce the size of the labor force in the United Kingdom and expand the size of the labor force in the European Union. In combination, these effects lower UK potential output

[6]A country-specific analysis is beyond the scope of this box.

Scenario Box 1 *(continued)*

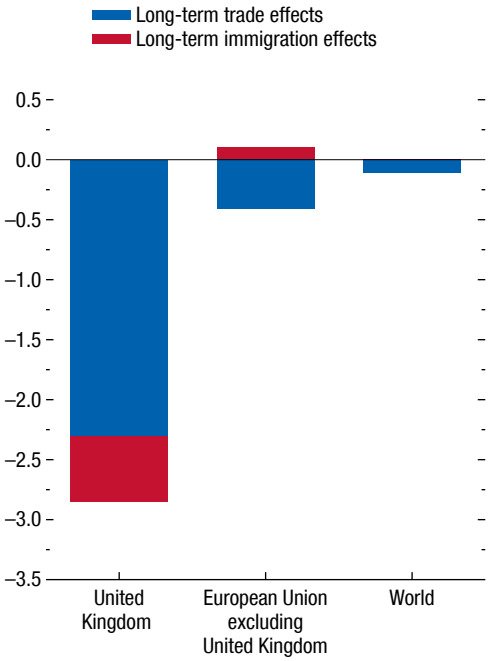
by almost 3 percent in the long term, relative to the current baseline. In the case of the European Union, the decline in potential output is about 0.3 percent. The long-term effect on output in other regions is negligible, whereas global GDP is down by 0.1 percent in the long term.

Comparison with Other Studies

Other studies have typically focused on the long-term impact of Brexit relative to staying in the European Union, with negative effects on output estimated at 3 percent to 10 percent. The long-term results presented here are in the middle of the range, once the effects that are in the current baseline—a long-term loss of 3 percent of GDP according to IMF (2018)—are included.[7]

[7]Other studies have estimated the prior gains to the United Kingdom from joining the European Union, with most papers focusing on the impact on trade flows and showing a wide range of estimates. When mapped into output effects, and depending on the approach, the benefits range from 3 percent to 20 percent (HM Treasury 2016).

Scenario Figure 2. Brexit Long-Term Real GDP Effects
(Percent deviation from April 2019 WEO baseline)



Source: IMF staff estimates.
Note: WEO = *World Economic Outlook*.

Box 1.1. Labor Market Dynamics in Selected Advanced Economies

During the 2017–18 cyclical upsurge in global growth, labor markets tightened in advanced economies, such as Germany, Japan, the United Kingdom, and the United States. Headline unemployment rates declined (in some cases from levels already approaching historical lows); rates of involuntary part-time employment dropped; and labor force participation rates rose (Figure 1.1.1).

Consistent with the decline in headline unemployment and diminishing latent slack in the form of involuntary part-time employment, nominal wage growth picked up in these economies. (Chapter 2 of the October 2017 *World Economic Outlook* discusses the importance of these cyclical factors in accounting for subdued wage growth in advanced economies after the 2008–09 global financial crisis.) Wage growth in these economies has recovered some of the lost ground, but it is still below averages seen before the crisis.

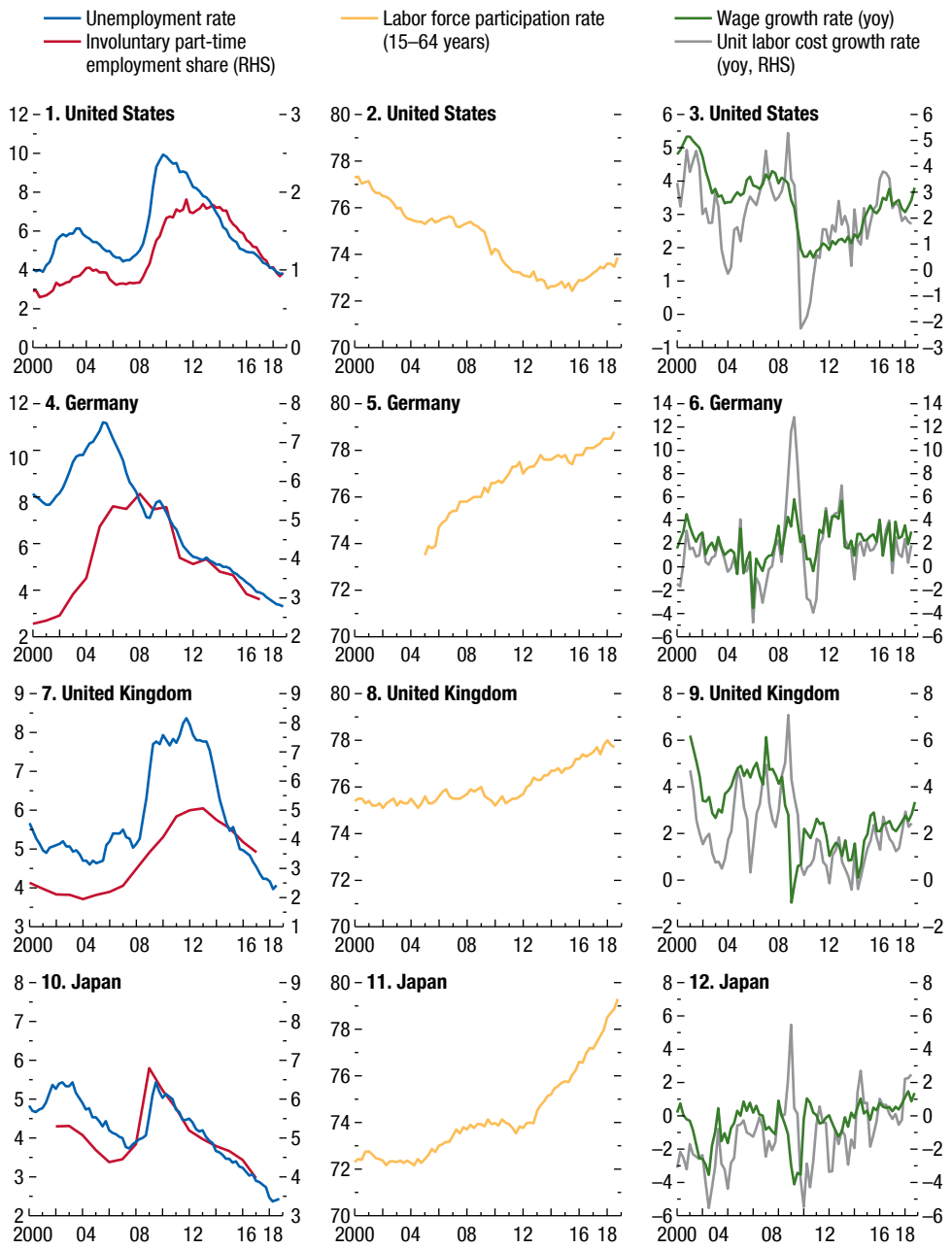
The continued sluggishness in wage growth can largely be accounted for by productivity growth being far weaker than it was before the crisis. Nominal wage growth has been broadly in line with labor productivity growth in these economies, and there is scant evidence of unit labor costs (the ratio of nominal wages to labor productivity) rising in a sustained manner—as seen in panel 3 of Figure 1.1.1. As such, pass-through from rising wage growth to consumer price inflation has been limited so far, even after a sustained period of declining unemployment.

The authors of this box are Weicheng Lian and Yuan Zeng.

Box 1.1 *(continued)*

Figure 1.1.1. Labor Market Dynamics in Selected Advanced Economies

(Percent)



Sources: Haver Analytics; national authorities; Organisation for Economic Co-operation and Development; and IMF staff calculations.
Note: RHS = right scale; yoy = year over year.

Box 1.2. Global Growth Forecast: Assumptions on Policies, Financial Conditions, and Commodity Prices

The global forecast rests on the following key assumptions on policies, financial conditions, and commodity prices:

- *Tariffs*: The tariffs imposed by the United States as of September 2018 and retaliatory measures by trading partners are factored into the baseline forecast. For US actions, besides tariffs on solar panels, washing machines, aluminum, and steel announced in the first half of 2018, these include a 25 percent tariff on $50 billion in imports from China (July and August 2018) and a 10 percent tariff on an additional $200 billion in imports from China (September 2018). In light of recent developments in the US–China negotiations, tariffs on $200 billion of US imports from China are assumed to stay at 10 percent (whereas in the October 2018 *World Economic Outlook* (WEO) and the January 2019 WEO *Update* they had been assumed to rise to 25 percent as of March 1, 2019). Also incorporated in the baseline forecast is China's response to the September 2018 US action, which included tariffs of 5–10 percent on $60 billion in imports from the United States.
- *Fiscal policy*: Fiscal policy is assumed to be expansionary across advanced economies in 2019 and expected to turn contractionary in 2020 as the US stimulus starts unwinding. Similarly, fiscal policy is assumed to be expansionary across the emerging market and developing economy group in 2019 (in part reflecting a projected fiscal stimulus in China to offset some of the negative effects of higher tariffs), before turning contractionary in 2020 (Figure 1.11).
- *Monetary policy*: The US federal funds rate is expected to increase to about 2.75 percent by the end of 2019, with one hike projected this year. Policy rates are assumed to remain at close to zero in Japan through 2020 and negative in the euro area until mid-2020.
- *Financial conditions*: The baseline forecast assumes a gradual tightening of global financial conditions with the relative intensity varying across economies, based on underlying economic and political fundamentals.
- *Commodity prices*: Based on oil futures contracts, average oil prices are projected at $59.2 in 2019 and $59.0 in 2020 (down from $68.8 and $65.7, respectively, in the October 2018 WEO). Oil prices are expected to remain in that range, reaching about $60 a barrel by 2023 (broadly unchanged from the October 2018 WEO forecast), consistent with subdued medium-term demand prospects and offsetting production adjustments that avoid large excess supply. Metal prices are expected to increase 2.4 percent year over year in 2019 and decline by 2.2 percent in 2020 (compared with a decrease of 3.6 percent followed by a slight pickup of 0.4 percent in the October WEO). Price forecasts of most major agricultural commodities have been revised down. Food prices are projected to decline 2.9 percent year over year in 2019 before increasing 2.1 percent in 2020 (compared with the projected increases of 1.7 percent and 0.3 percent in the October 2018 WEO).

Box 1.3. Worlds Apart? Within-Country Regional Disparities

Regional and urban–rural disparities in income, labor market outcomes, and productivity have attracted a lot of attention in recent years. There is concern that, coupled with a slow recovery from the global financial crisis, persistent and rising spatial disparity may have contributed to widening income inequality and growing disillusionment with globalization.

Regional disparities may not necessarily call for policy intervention. If spatial inequality results from regional specialization based on comparative advantage (for instance due to natural endowments) or returns to scale in production (due to complementarities and agglomeration economies), spatial inequality in output may be the flip side of efficient resource allocation. Over time, regional incomes should converge as labor and capital reallocate in response to interregional factor price differentials.

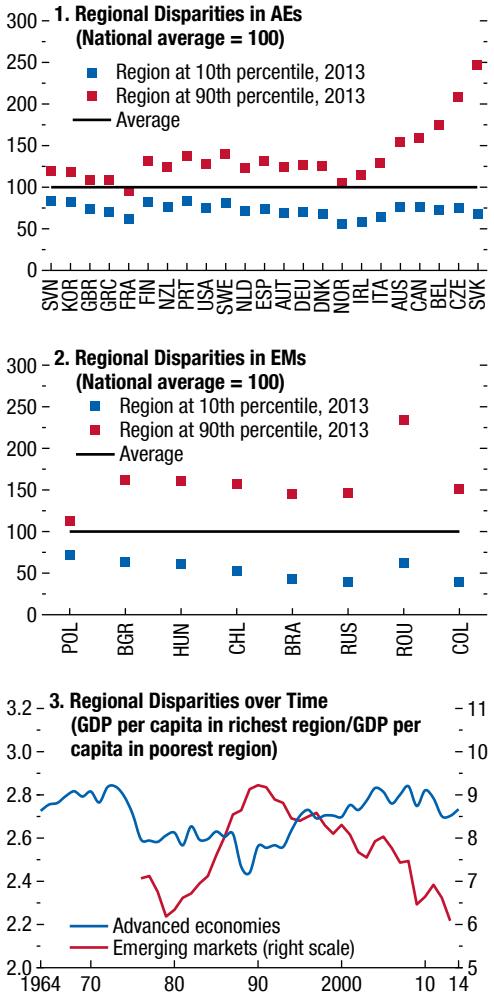
However, in some cases, regions fail to converge in this way. Many countries have regions with chronic problems. Regional disparities could remain persistently large because of market failures: when there are difficulties starting new centers of activity, coordination failure can follow, and obstacles to factor mobility can limit their reallocation.

Large, persistent disparities impose costs on the people and places left behind and on booming areas. These can have political economy implications, reduce trust, and increase political polarization. Although it is only one component of income inequality across individuals and households, this dimension has been studied much less and may have added significance when spatial and regional divisions align with political and ethnic tensions.

Large Disparities

Within-country disparities in per capita GDP are large (Figure 1.3.1, panels 1 and 2).[1] While regional disparities in the per capita GDP of emerging markets

Figure 1.3.1. Regional Disparities in GDP per Capita



Sources: Gennaioli and others (2014); Organisation for Economic Co-operation and Development Regional Database; and IMF staff calculations.
Note: Panels 1 and 2 refer to 2013 (the most recent year with wide cross-country coverage), constant PPP GDP per capita. Panel 3 is based on a balanced subset of eight advanced economies and eight emerging markets for which longer time series are available. Recent patterns are very similar for a larger set of countries with shorter time series. Overseas territories are included. AEs = advanced economies; EMs = emerging markets; PPP = purchasing power parity.

The author of this box is Zsoka Koczan.

[1]The Organisation for Economic Co-operation and Development regional database relies on national purchasing-power-parity (PPP) deflators because subnational PPP deflators are not widely available. The lack of region-specific PPP deflators may lead to overestimation of within-country income differentials (as poorer regions likely also have lower prices; see, for instance, Aten and Heston 2005). Rich and poor regions also exhibit systematic differences alongside other dimensions, such as labor market indicators, educational attainment, and even health outcomes.

Box 1.3 *(continued)*

are more pronounced than in advanced economies, these ranges have been shrinking since the early 1990s, following a rise before that. In contrast, advanced economies experienced shrinking disparities and within-country convergence until the 1980s, but divergence since. This pattern is widely documented for the United States,[2] where the increase in spatial disparity has been particularly marked.

Regional differences in per capita GDP also appear to be very persistent. A region's relative position compared with the country average is closely correlated with its relative position even 10 years ago: the 10-year lag of normalized GDP per capita at the regional level still predicts about three-quarters of the variation in normalized regional per capita GDP today.

Obstacles to Mobility?

Such persistence may raise concerns about adjustment mechanisms. With free mobility of labor, workers in regions with high unemployment or low average wages would choose to migrate to regions with low unemployment and a higher average wage, and thereby over time eliminate the differential in unemployment and wages.

However, wages may not be responsive enough to labor market conditions, leading to excessive swings in unemployment in response to shocks. Liquidity constraints may force workers who become unemployed to leave the region rather than borrow and wait for the upturn, leading to excessive labor outmigration. Conversely, large fixed costs of migration may prevent the unemployed or those with fewer skills from moving. The behavior of house prices may affect the mobility of homeowners.

The differential impacts of globalization and automation across sectors, occupations, and geographic areas could also result in different regional effects of global forces. In the context of such diverse regional economies experiencing localized shocks, country-level policies may then be ineffective.[3]

Declining mobility has received a lot of attention in the United States, where interstate mobility is at a historic low. However, that fits with the broad decline of within-country migration in advanced economies.[4] Migration is also highly selective. Those with more education and the employed are more likely to move than those with less education or who are unemployed. This could suggest that falling dynamism may be one of the factors underlying the recent increase in regional disparities in advanced economies.

[2]See Berry and Glaeser (2005); Moretti (2011); Ganong and Shoag (2017); Giannone (2017); Austin, Glaeser, and Summers (2018); Economic Innovation Group (2018); Hendrickson, Muro, and Galston (2018); and Nunn, Parsons, and Shambaugh (2018).

[3]See Leichenko and Silva (2004); Chiquiar (2008); Kandilov (2009); Autor, Dorn, and Hanson (2013); Hakobyan and McLaren (2016); and Partridge and others (2017). See also Chapter 2 of the April 2018 *World Economic Outlook.*

[4]It has increased in emerging markets, on average, though from very low levels.

Special Feature: Commodity Market Developments and Forecasts

Energy prices have decreased since the release of the October 2018 World Economic Outlook *(WEO), mostly driven by lower oil prices. After surging to their highest point since 2014 because of concerns over US sanctions against Iran, oil prices fell to their lowest point since the second half of 2017 following record US oil production growth, the prospects for weaker global economic growth, and temporary waivers for imports of Iranian oil. In response to falling prices, oil exporters agreed to cut production, providing some price support. While a growth slowdown in China and trade tensions put downward pressure on metal prices in 2018, metal prices recovered on fiscal stimulus in China, improved global market sentiment, and supply disruptions in some metal markets. Prices of agricultural goods have increased somewhat as news of weaker global income growth and excess supply conditions in some grain markets were more than offset by a recovery of world sugar prices and excess demand for animal protein sources. This special feature also includes an in-depth analysis of the relationship between commodity prices and economic activity.*

The IMF's Primary Commodity Price Index declined by 6.9 percent between August 2018 and February 2019, the reference periods for the October 2018 and current WEO, respectively (Figure 1.SF.1, panel 1). Amid high volatility, energy prices drove that decline, falling sharply by 17.0 percent, while base metal prices increased as trade tensions and weaker economic activity in China were more than offset by supply disruptions. Food prices increased by 1.9 percent as exceptional yields in some grain markets were more than offset by higher prices for meat and a rebound in sugar prices. Oil prices increased to more than $80 a barrel in early October, attaining their highest level since November 2014 as US sanctions against oil imports from Iran loomed.[1] In the last months of 2018, however, oil prices declined sharply thanks to record production growth in the United States and the issuance of waivers for most of the countries that import oil from Iran. In response to that slump, Organization of the Petroleum Exporting Countries (OPEC) and non-OPEC oil exporters agreed to cut production. Coal prices decreased as China's economy grew at its slowest pace since 1990, while natural gas prices fluctuated widely, driven by changing weather conditions, especially in North America.

Oil Price Roller Coaster

In early October, oil prices surpassed $80, their highest level since November 2014, ahead of US sanctions against Iran's oil sector that took effect in November. However, the US administration issued waivers that allowed several major importing countries to continue importing crude oil from Iran. In addition, US crude oil production averaged 10.9 million barrels a day (mbd) in 2018, an increase of 1.6 mbd over the previous year (exceeding expectations by 0.3 mbd since the October WEO) and the largest growth in its history.[2] Canada, Iraq, Russia, and Saudi Arabia also produced at high levels. As a result, oil prices fell sharply between early October and the end of November. On December 7, 2018, OPEC and non-OPEC (including Russia) countries agreed to cut their crude oil production by 0.8 mbd and 0.4 mbd, respectively, from their October 2018 level, starting in January 2019 for an initial six-month period. Oil producers' cuts, coupled with unplanned outages supported oil prices, which rebounded to above $60 in February. Natural gas spot prices declined sharply in response to ample supply following a volatile start of the winter because of changing weather conditions; long-term natural gas contract prices declined in tandem with medium-term oil price futures. Coal prices have decreased, prompted by lower Chinese economic activity as well as lower oil prices.

As of February, oil futures contracts indicated that Brent prices will stay at about $60 for the next five years. (Figure 1.SF.1, panel 2). Baseline assumptions, also based on futures prices, suggest average annual prices of $59.2 a barrel in 2019—a decrease of 13.4 percent from the 2018 average—and $59.0 a barrel in 2020 for the IMF's average petroleum spot prices. On the demand side, lower oil prices are offsetting underlying oil demand from weaker global economic growth—the International Energy Agency expects oil demand

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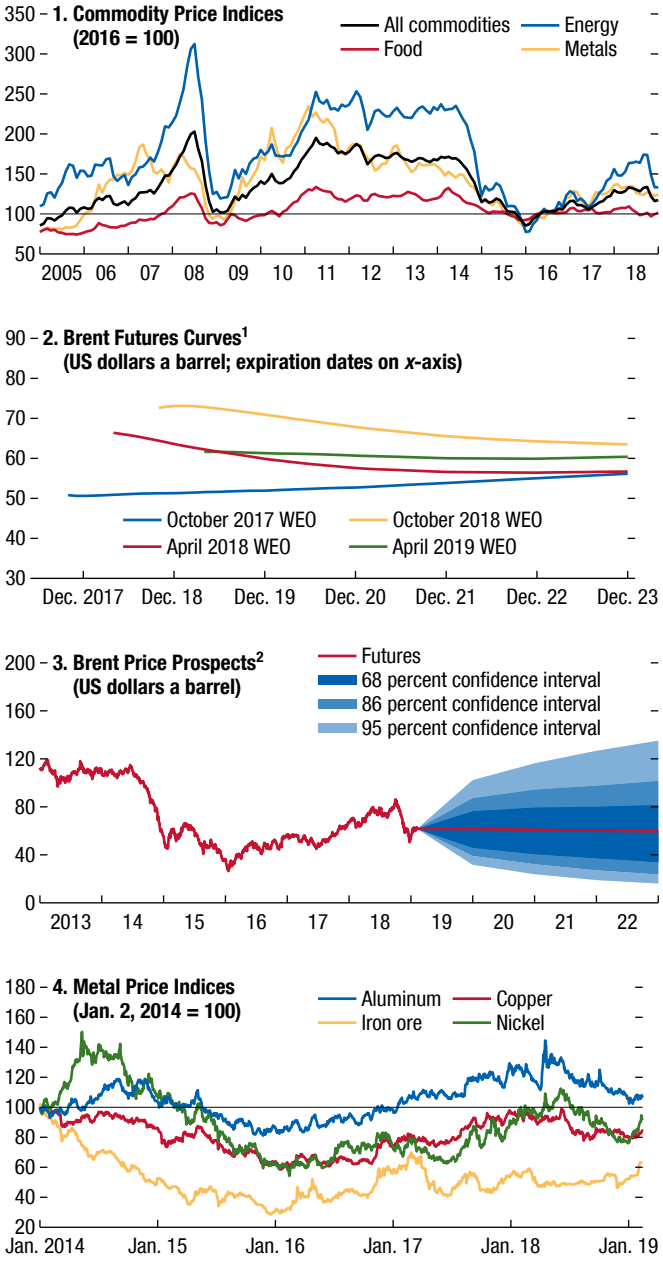
[1]Oil price in this document refers to the IMF average petroleum spot price, which is based on UK Brent, Dubai, and West Texas Intermediate, equally weighted, unless specified otherwise.

[2]In September 2018, the Energy Information Agency expected an increase in US oil production of 1.3 mbd.

Figure 1.SF.1. Commodity Market Developments



Sources: Bloomberg Finance L.P.; IMF, Primary Commodity Price System; Thomson Reuters Datastream; and IMF staff estimates.
Note: WEO = *World Economic Outlook*.
[1]WEO futures prices are baseline assumptions for each WEO and are derived from future prices. October 2018 WEO prices are based on February 7, 2019, closing.
[2]Derived from prices of futures options on February 7, 2019.

to grow by 1.3 mbd and 1.4 mbd in 2018 and 2019, respectively, a 0.1 mbd downward revision for both years (relative to the October WEO). On the supply side, since the beginning of 2019, mandatory production cuts by Canada and the supply cuts by OPEC and non-OPEC countries, including involuntary outages in Venezuela, are gradually slowing oil output growth.

Although risks are balanced, substantial uncertainty around the baseline oil price projections remains because of high policy uncertainty (Figure 1.SF.1, panel 3). Upside risks to prices in the short term include geopolitical events in Middle East, civil unrest in Venezuela, a tougher US stance against Iran and Venezuela, and slower-than-expected US production growth. Downside risks include stronger-than-expected US production and noncompliance among OPEC and non-OPEC countries. Trade tensions and other risks to global growth can also further affect global activity and its prospects, in turn reducing oil demand.

Metal Prices Rebounded

Metal prices increased 7.6 percent between August 2018 and February 2019. By the end of 2018, the IMF annual base metals price index had reached its lowest point in 16 months due to weakening growth, notably in China, and global trade tensions. However, metal prices rebounded since then, driven by the expectation of fiscal stimulus in China and improved global market sentiment—coupled with a sharp increase in iron ore prices due to the Brumadinho dam disaster (Brazil).

Iron ore prices increased 28.8 percent between August 2018 and February 2019 amid supply disruptions from the world's top iron ore miners, including a derailment of a BHP iron ore train on November 5, a fire at a Rio Tinto's export terminal on January 10, and the collapse of Brumadinho dam at Vale SA's mine on January 25. The dam collapse will have ramifications for the industry, which could experience a prolonged halt of operations at some iron ore mines and a slowdown of new projects. (Figure 1.SF.1, panel 4). Copper prices increased 4.1 percent on US–China trade optimism and market deficit for both concentrate and refined copper. Aluminum fell 9.2 percent, following the lifting of US sanctions on the giant Russian aluminum producer Rusal and improved prospects for removal of the production embargo by the Brazilian Federal government on Hydro's Alunorte (the world's largest alumina refinery) in the second half of 2019. Nickel, a key

input for stainless steel and batteries in electric vehicles, dropped 5.4 percent between August and February 2019 on stronger-than-expected production from Indonesia and the Philippines. Zinc, which is used mainly to galvanize steel, increased 7.8 percent from August to February 2019 on persistent supply tightness, partly due to the ongoing environmental clampdown in China, the world's largest producer of zinc. Cobalt saw the deepest fall in prices of all metals during the reference period, declining by 49.3 percent due to rising supply from the Democratic Republic of the Congo.

The IMF annual base metal price index is projected to increase by 2.4 percent in 2019 (relative to its average in 2018) and decrease by 2.2 percent per year in 2020. Upside risks to the outlook are higher-than-expected metals demand from China and supply shortages as a result of more stringent environmental regulations in major metal-producing countries. Downside risks stem from a faster moderation in global economic growth and a further slowdown of the Chinese economy (the biggest world metal consumer).

Food Prices Increased Slightly

Trade tensions, weak emerging market currencies, and exceptionally strong US grain yields constituted the primary drags on global food prices in the first three quarters of 2018. Since then, prices have been less volatile. The IMF's food and beverage price index has increased slightly, by 1.9 percent, as news of weaker global economic activity and excess supply in markets, such as those for wheat and cotton, was outweighed by excess demand for animal protein sources and a recovery of world sugar prices from multiyear lows.

Wheat prices decreased by 15.8 percent between August 2018 and February 2019 as a competitive Russian ruble supported Russian exports. Absent news on harvests from major producing countries and in anticipation of lower trade tensions, a reversal of yields to the mean, and normalization of US dollar strength, prices of corn and soybeans have slowly moved up, increasing by 4.4 percent and 5.6 percent, respectively, between August 2018 and February 2019.

Poultry prices increased, by 3.9 percent, because of strong consumer demand. World sugar prices jumped by 23.7 percent, in part due to expectations of lower output in 2019 from top producers Brazil and India. Following weaker-than-expected demand and given ample stocks in China, the price of cotton declined by 14.2 percent between August 2018 and February 2019, even as hot weather took a toll on global cotton crops.

Food prices are projected to decrease by 2.9 percent a year in 2019 and then increase by 2.1 percent in 2020. Weather disruptions are an upside risk to the forecast. On February 14, 2019, the US National Oceanic and Atmospheric Administration announced that weak El Niño climate conditions have taken effect and are expected to continue into spring, which could have local impacts on crops. A resolution of the trade conflict between the United States—the world's largest food exporter—and China is another source of upside potential for prices.

Commodity Prices and Economic Activity

Introduction

What do commodity prices tell us about economic activity? This special feature analyzes the bountiful and rich information embedded in the prices of the many commodities traded in major commodity markets around the world and shows how this information is useful to nowcast or even forecast global economic activity.[3]

There are at least two major reasons commodity prices are useful indicators of global economic activity. First, even in a world where services take the spotlight, commodities still represent about 17 percent of global trade and are fundamental production inputs.[4] A change in global economic activity will therefore be reflected in the global demand for commodities (Barsky and Kilian 2004; Alquist, Bhattarai, and Coibion forthcoming). Second, commodities are storable, so, like those of financial assets, their prices reflect both current and expected *future* demand and supply conditions. Given that many commodities are regularly traded in liquid and deep markets, their prices can swiftly move in response to changes in market tightness, including news and changes in sentiment about global economic conditions.

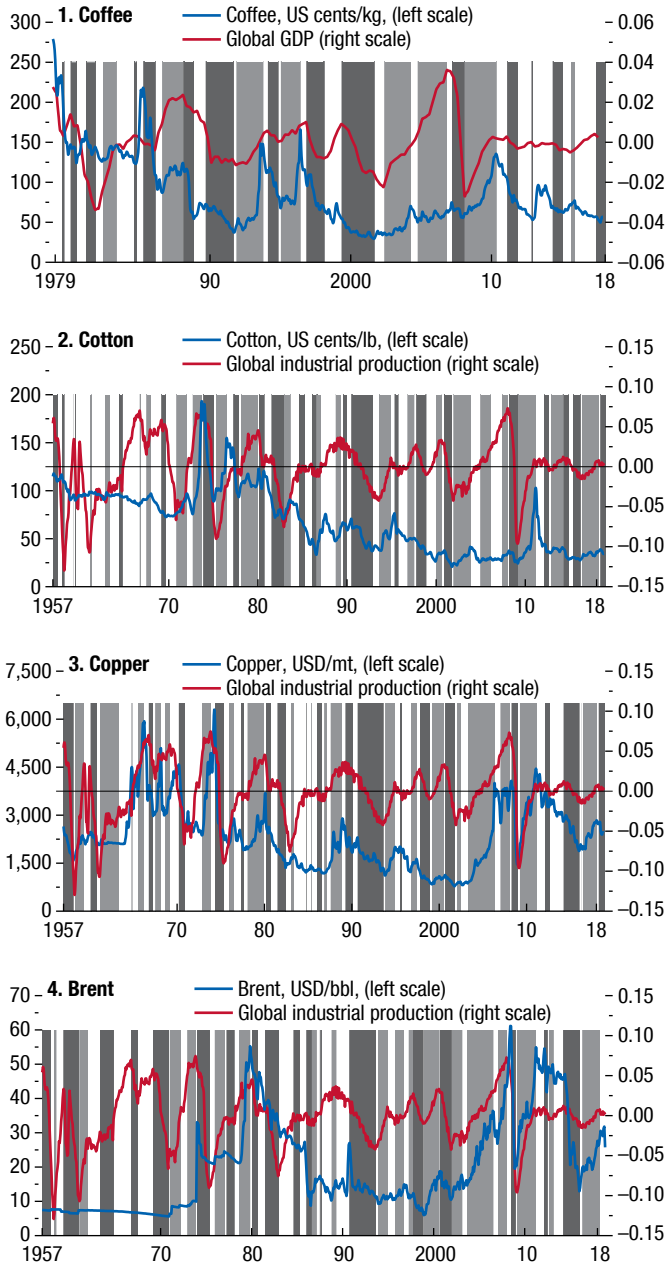
In practice, it is not easy to infer economic activity from commodity prices. The presence of commodity supply shocks and commodity-specific demand factors is, in fact, a prominent confounding influence[5] and

[3]Nowcasting is a statistical model that exploits real-time data to provide a timely estimate of major economic activity indicators (such as GDP) that are usually released by statistical agencies with a delay.

[4]Industrial commodities (metals and raw agricultural materials) are essential inputs for the manufacturing sector. Energy commodities, because they are crucial to the transportation and petrochemical sectors and to power generation, indirectly affect the entire global production system. And food and beverage commodities, usually affected by income, underpin the food chain.

[5]For example, extreme weather conditions can substantially affect crop output and demand for natural gas.

Figure 1.SF.2. Commodity Cycles and Economic Activity



Sources: IMF, Primary Commodity Price System; Organisation for Economic Co-operation and Development (OECD); and IMF staff calculations.
Note: Peaks and troughs are identified using the Harding and Pagan's (2002) business cycle dating procedure. Global industrial production (IP) is spliced back using OECD IP (1975/79) and US IP (<1975). Dark (light) shaded areas represent synchronized contractions (expansions) in both economic activity and the selected commodity price. White shaded areas represent asynchronized movements. bbl = barrel; kg = kilogram; lb = pound; mt = metric ton; USD = US dollar.

even perhaps a reason for reverse causality—especially in the case of oil—potentially introducing an element of countercyclicality (Hamilton 1996, 2003). To tackle this problem, the analysis is split into two parts. The first identifies commodity price cycles and provides insights into the cyclical synchronization between commodity prices and economic activity. The second part exploits comovement among commodity prices to isolate global demand factors from other confounding influences and then tests whether the extracted global factors have nowcasting and predictive power for economic activity.

Cyclicality and Comovement of Commodity Prices

This section identifies commodity price cycles and looks, across a broad set of commodity prices, at commodities with the highest pair-wise synchronization with economic activity (that is, *bellwethers*). It also derives a commodity-market-wide synchronization measure.

The methodology to identify periods of *contraction* and *expansion* follows the business-cycle-dating procedure of Harding and Pagan (2002).[6] This procedure is applied to an unbalanced panel, starting in 1957, of 57 (real) commodity price series that fall into four broad categories: energy, metals, food and beverages, and raw agricultural materials.[7] The same procedure is also applied to detrended global industrial production and GDP.[8] (Figure 1.SF.2 presents four examples.)

[6]Drawing on Cashin, McDermott, and Scott (2002), the Harding and Pagan (2002) methodology is used to identify peaks and troughs in the time path of real commodity prices. A candidate turning point is identified as a local maximum or minimum if the price in that month is either greater or less than the price in the two months before and the two months after. The sequence of resulting candidate turning points is then required to alternate between peaks and troughs. Furthermore, each phase defined by the turning points (expansion or contraction) must be at least 12 months long. (This commodity-price-cycle-dating algorithm is an adaptation of the business-cycle-dating algorithm set out by Bry and Boschan (1971) and later popularized by Harding and Pagan (2002). An advantage of using a Bry and Boschan–type algorithm to date commodity price cycles is that it provides a tractable means of applying an objective cycle-dating rule to a large data set.)

[7]All commodity price series are monthly averages of prices from the IMF's Primary Commodity Price System and are denominated in US dollars and divided by US consumer price inflation. Prices are not prefiltered, given that most commodities do not show a clear trend. The academic literature still debates whether commodity prices, in general, have a trend. Grilli and Yang (1988) argues that commodity prices have a downward tendency; more recently, Jacks (2013) and Stuermer (2018) found a modest upward trend. Results are mostly unchanged if a linear trend is removed.

[8]A Hodrick-Prescott filter with a very low lambda is used to extract a stable trend from global industrial production and GDP. Quarterly GDP data have been interpolated monthly. Although the dating algorithm can handle nonstationarity, some statistics that

Table 1.SF.1. Commodity Price Cycle Descriptive Statistics

	Duration (Months)		Amplitude (Log difference, percent)		Sharpness (Log difference, percent)	
	Expansion	Contraction	Expansion	Contraction	Expansion	Contraction
Energy	20	24	64.72	62.81	3.37	3.01
Base Metals	18	24	55.19	57.98	3.05	2.41
Food and Beverages	16	20	45.25	49.60	2.80	2.33
Agricultural Raw Materials	18	22	43.27	46.70	2.46	2.00

Sources: IMF, Primary Commodity Price System; and IMF staff calculations.
Note: Price cycles are identified using the Harding and Pagan (2002) methodology. Duration measures the average length (in months) of a price phase (expansion or contraction). Amplitude measures the average price change (in percentage terms) from trough to peak in case of an expansion, and from peak to trough in case of a contraction. Sharpness measures the average price increase per month (in percentage terms) experienced during an expansion, and the average price decline during a contraction. All statistics are calculated by averaging over all commodities in a particular group.

Most commodities show asymmetric phases characterized by longer and dull contractions punctuated by sharp expansions (Table 1.SF.1).[9] Energy commodities stand out because they have the longest and sharpest phases; a full energy cycle tends to last slightly less than four years. Overall, however, the characterization of cycles is quite similar across commodity groups and appears to be in line with a long-standing body of literature that highlights the interaction of commodity supply shocks with storage demand as an important driver of commodity price movements (Deaton and Laroque 1992; Cashin, McDermott, and Scott 2002).

Supply shocks, especially when inventory stocks or spare production capacity is low, tend to cause spikes in prices, but a large array of literature also stresses the role of demand factors (Barsky and Kilian 2004; Alquist, Bhattarai, and Coibion forthcoming—among many). It is therefore interesting to calculate the synchronization of phases (or technically, *concordance*) between commodity prices and economic activity.[10]

With few exceptions, agricultural prices, especially food prices, are, on average, only modestly in sync with economic activity (Figure 1.SF.3). Bellwethers of global industrial production are mostly base metals (such as zinc, copper, and tin) and, to a lesser extent, energy and fertilizers. Propane shows the highest synchronization with global industrial production, but its time series and the time series for natural gas start only in 1992 and hence are shorter than for most other commodities—suggesting a possible increase in synchronization between commodities and economic activity over the past few decades, which is also consistent with the findings of the factor analysis in the next section. Interestingly, some raw agricultural materials, such as cotton, have relatively high synchronization with global industrial production while, in general, food and beverages, relative to other commodities, are more synchronized to global GDP than to industrial production. This is because income, rather than production, plays a more relevant role in their demand (an example is arabica coffee).[11]

Periods of sizable movement in economic activity (booms or busts) should increase comovement, and therefore synchronization, among all commodities. Most commodities, not only bellwethers, should move in sync with global industrial production or GDP. Accordingly, it is useful to derive a metric that calculates the share of commodities that are in the expansion (contraction) phase—that is, a commodity-wide concordance.[12] This metric should be related to global economic activity, with turning points (periods of maximum or minimum synchronization among commodity prices) falling within expansionary or contractionary phases of global activity. The commodity-wide concordance should, thus, be indicative of how much global demand factors, relative to supply or

compare stationary and nonstationary series (for example, concordance) can be misleading.

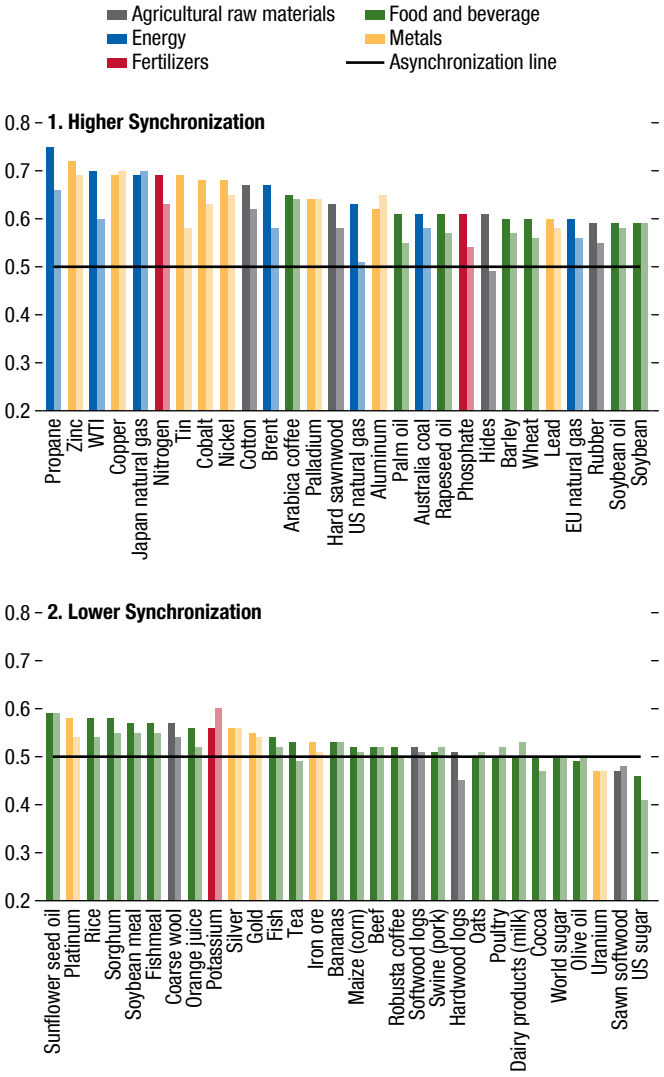
[9]Online Annex 1.SF.1 (available at www.imf/en/Publications/WEO) shows cyclical properties for each individual commodity price series and tests different sets of parameters for the dating algorithm that impose longer minimum durations for phases and cycles.

[10]Technically, the synchronization metric used is the *concordance*, which calculates the share of time two series that are in the same phase (Harding and Pagan 2002). Concordance is bounded between 0 and 1; two independent random walks have a concordance of 0.5.

[11]As expected, the metals that are less in sync with economic activity are precious metals, such as gold and silver, and those that have not always been freely traded in spot markets, such as iron ore (before 2009), because both buyers and suppliers seek long-term security in a market with little output growth. Uranium is not freely traded because of its unique applications and geopolitical sensitivity.

[12]A value of 1 (–1) means that all commodity prices are expanding (contracting) simultaneously—perfect synchronization—while a value of 0 implies that half of commodity prices are in the same phase, lowest synchronization.

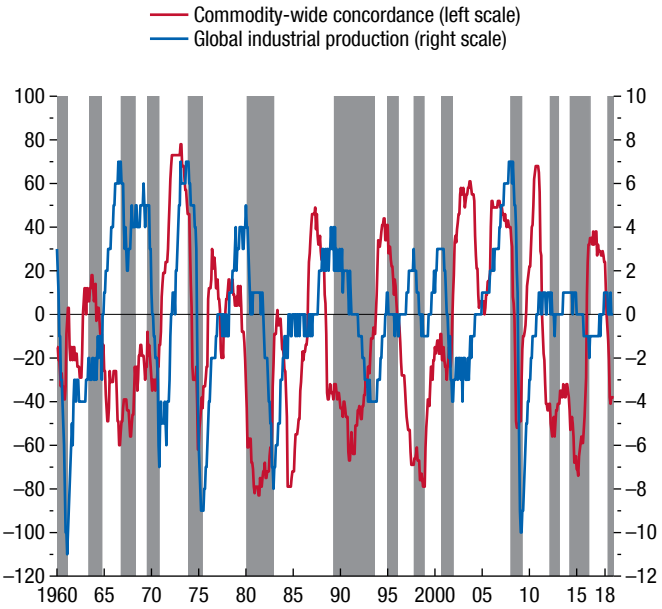
Figure 1.SF.3. Synchronization with Economic Activity



Sources: IMF, Primary Commodity Price System; Organisation for Economic Co-operation and Development; and IMF staff calculations.
Note: Bars represent the synchronization of a given commodity with de-trended global industrial production (IP) (darker bars) and GDP (lighter bars). Synchronization is defined as the concordance between the price cycle of a given commodity and the business cycle (de-trended GDP or IP) where phases of expansions and contractions are identified using Harding and Pagan's (2002) procedure. Concordance calculates the share of time two series are in the same phase; a concordance above 0.5 denotes a positive synchronization. WTI = West Texas Intermediate.

Figure 1.SF.4. Commodity-Wide Synchronization

(Percent)



Sources: IMF, Primary Commodity Price System; Organisation for Economic Co-operation and Development (OECD); and IMF staff calculations.
Note: Global industrial production (IP) is spliced back using OECD IP (1975–79) and US IP (<1975). Shading represents contractions in the IP variable. Commodity-wide concordance is the share of commodities in expansion (contraction).

commodity-specific demand factors, are driving commodity prices in a given period.

Figure 1.SF.4 shows that commodity-wide concordance anticipates turning points of economic activity, given that it typically peaks (or troughs) when activity is expanding or contracting most. This is a promising result, highlighting the presence of common latent factor(s) related to global activity that drive commodity prices. The next section will try to exploit this insight to nowcast and forecast movements in the global business cycle using commodity prices.

Do Commodity Prices Help Nowcast and Forecast Global Economic Activity?

To isolate movements in commodity prices that are driven by global economic activity, a factor model is estimated at monthly frequency using principal components (Stock and Watson 2002; West and Wong 2014; Delle Chiaie, Ferrara, and Giannone 2018).[13]

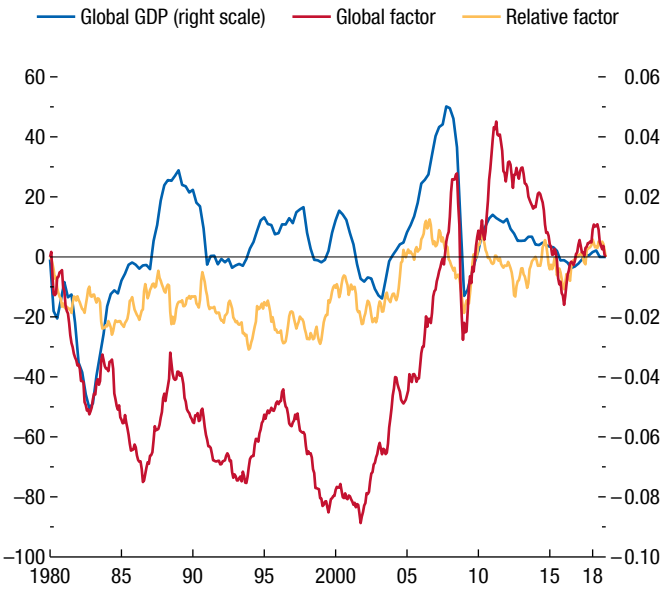
[13]The approach in Delle Chiaie, Ferrara, and Giannone (2018) that allows for group-specific factors gives slightly inferior results.

Given that supply- and commodity-specific demand shocks make commodity prices diverge, estimating latent factors that cause commodity prices to comove should help construct a proxy for global economic activity.[14] Following this logic, the higher the number of commodities used, the better the identification of global demand factors. In practice, however, it may be preferable to exclude commodities, such as gold and silver, that behave more like financial assets or those that are too closely related, such as soybean meal and soybean oil (Kilian and Zhou 2018).[15]

The first two extracted factors explain about 20 percent of the variance in commodity price monthly changes. The relevance of the remaining factors drops off quickly and is not statistically related to economic activity.[16] Figure 1.SF.5 plots the first and second latent factors extracted jointly with (demeaned) global GDP growth, cumulated over time. Even though the first and second factors are contemporaneously orthogonal by construction, when cumulated, they show a positive correlation, 0.67. The first factor is a *global factor;* the second represents a negative demand shift for agricultural products relative to energy and metals and is therefore a *relative-price factor*.[17] Given that the relative-price factor helps account for movements in agricultural prices, first factors are extracted by first splitting the sample into agricultural and nonagricultural (energy and metals) commodities. Interestingly, the global factor and the relative-price factor are very well approximated by a linear combination of the two first factors of the split subsamples.[18] The relative-price factor, however, has a negative sign on the first factor of the agriculture subsample. The relationship between the global factor and global GDP is visually quite striking (Figure 1.SF.5), but the relative-price factor also seems to move with GDP during some sharp downturns (by leading them) and subsequent recoveries.[19]

Because the first release of global industrial production lags by two months and that of GDP lags by one quarter, they are often substantially revised, so it is useful to test whether latent factors can help nowcast global activity. To do so, global industrial production and GDP are regressed on their own lagged value

Figure 1.SF.5. Latent Factors and Economic Activity



Sources: IMF, Primary Commodity Price System; and IMF staff calculations.
Note: First and second principal components are cumulated; log difference in global GDP is de-meaned and cumulated.

[14]The idea that global demand causes comovement in commodity prices is clearly not novel. For example, Barsky and Kilian (2004) interprets the strong comovement of the real price of oil and a real price index of industrial raw materials and metals in the early 1970s as evidence of a common demand component in both prices. More generally, a large body of literature is based on a range of different models and data that finds most of the fluctuations in (especially industrial) commodity prices are driven by shifts in aggregate demand (see, for example, Barsky and Kilian 2004; Kilian 2009; Nakov and Pescatori 2010; Kilian and Murphy 2014; Alquist, Bhattarai, and Coibion forthcoming; and Delle Chiaie, Ferrara, and Giannone 2018, among others).

[14]Interestingly, Pindyck and Rotemberg (1990) notes how seemingly uncorrelated commodities (whose cross-price elasticities of demand and supply are close to zero) show excess comovement, which suggests the presence of a latent global (possibly heteroscedastic) factor that affects all prices at the same time.

[15]To estimate the latent factors, the log differences of prices (divided by the US consumer price index) have been *z*-scored. The use of log-detrended or log differences is less relevant for the estimation (Kilian and Zhou 2018).

[16]This is in line with Stock and Watson (2002). That study uses a different set of indicators to show that the first two factors are the most informative and have the highest predictive content.

[17]This can be seen by inspecting the factor loadings, available on request.

[18]A regression of the global (relative-price) factor on the first factors extracted from the agriculture and nonagriculture samples separately yields an R-squared of 0.99 (0.88).

[19]The (negative of the) first factor in levels mimics movements in the US dollar real effective exchange rate (REER), which is not a surprise, given that the dollar is the numerator for all commodity prices in the sample. This association is, however, much weaker at higher frequencies, such as monthly changes, and weakens further when, to construct the REER, noncommodity currencies are excluded because, as is well known, they move inversely with the price of the commodity exported (Chen and Rogoff 2003). Introducing the US dollar REER into the nowcasting and forecasting exercise does not alter the results.

Table 1.SF.2. Global Industrial Production Nowcast

	Benchmark	Specification 1	Specification 2	Specification 3
RMSE	0.55%	0.54%	0.53%	0.54%
Ratio	1	0.99	0.97	0.98

Sources: IMF, Primary Commodity Price System; and IMF staff calculations.
Note: Sample period = January 1980 to December 2018. Benchmark = autoregressive process with the optimal lag based on Bayesian information criterion; Specification 1 = first principal component; Specification 2 = first two principal components; Specification 3 = first principal components of agricultural and nonagricultural commodities. Optimal lag of independent variables added based on Bayesian information criterion for all specifications. RMSE = root mean square error; Ratio = relative RMSE, RMSE divided by benchmark RMSE.

and latent factors and on one period of their own lag. Whether the introduction of the latent factors statistically improves the nowcast estimate of the economic activity indicator (industrial production or GDP) is tested, and the results are compared with a *benchmark* autoregressive (AR)(p) process (following Stock and Watson 2002). Varying specifications are tried: only the global factor is used (specification 1); the global and relative factors are introduced together (specification 2); the sample is split into agricultural and nonagricultural commodities and the respective first factors are used (specification 3). All specifications can include their own lags, optimally chosen.

Results shown in Table 1.SF.2 indicate that for industrial production, at monthly frequency, introducing the global factor and the relative-price factor increases the ability to nowcast industrial production relative to the benchmark AR(p) process—in which the number of lags, p, is determined optimally. Because monthly industrial production growth is quite volatile, nowcasting yields modest improvements. More striking is its ability to nowcast GDP (Table 1.SF.3). The improvement in the root mean square error relative to the AR(p) benchmark is already 10 percent with only the global factor from one month of commodity price information. The improvement increases to 15 percent when the quarter is completed. The R-squared is also high, at about 0.48.[20] Interestingly, commodity prices are mostly informative during periods of high economic volatility, when the AR(p) process fails the most (Figure 1.SF.6). Results are similar when using the two first factors extracted from the agricultural and nonagricultural group taken separately.

Factor lags are also significant, so it is possible to test whether commodity prices also help predict global activity. Forecast evaluations are based on the out-of-sample forecast performance. Given data for industrial production, GDP, and estimated principal components, each specification is first estimated using the sample period 1980–98 and then recursively reestimated to forecast for 2000–18.[21] For each period, the model forecasts for next period's one-month-ahead and three-month-ahead industrial

[20]Regression results are available upon request. It is also worth noting that predictability declines when using global GDP (industrial production) at market exchange rates, probably because of the greater relevance of services in advanced economies.

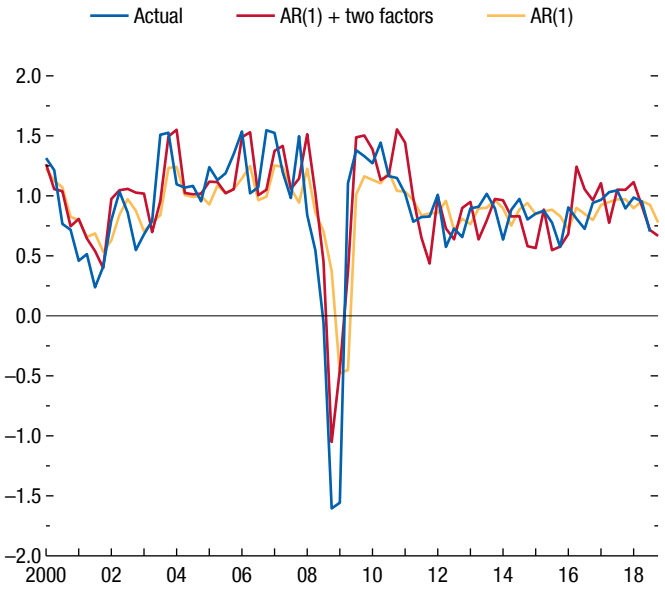
[21]Each model is reestimated with the addition of new data (recursive scheme). Models using principal components have a fixed lag length, but the optimal lag length of the AR model is chosen each time, using Bayesian information criteria or Akaike information criteria.

Table 1.SF.3. Global GDP Nowcast

	Metric	Benchmark	Specification 1	Specification 2	Specification 3
One Month Information	RMSE	0.42%	0.38%	0.37%	0.38%
	Ratio	1	0.90	0.90	0.90
Two Months Information	RMSE	0.42%	0.36%	0.36%	0.36%
	Ratio	1	0.87	0.86	0.86
Quarter Information	RMSE	0.42%	0.36%	0.35%	0.35%
	Ratio	1	0.86	0.84	0.85

Sources: IMF, Primary Commodity Price System; and IMF staff calculations.
Note: Sample period = 1980:Q1 to 2018:Q3. Benchmark = autoregressive process with the optimal lag based on Bayesian information criterion; Specification 1 = first principal component; Specification 2 = first two principal components; Specification 3 = first principal components of agricultural and nonagricultural commodities. One-period lagged dependent variable is added in all specifications. Information is available one, two, or three months into the quarter. RMSE = root mean square error; Ratio = relative RMSE, RMSE divided by benchmark RMSE.

Figure 1.SF.6. Global Real GDP Growth Nowcast: Actual versus Fitted Value
(Percent, quarter-over-quarter)



Sources: IMF, Primary Commodity Price System; and IMF staff calculations.
Note: AR = autoregressive process; two factors = first two principal components. Regressions are based on quarterly data from 1980:Q1 to 2018:Q3.

production growth.[22] The forecast performance is based on the root mean squared forecast error.

[22]After running the forecast through entire periods, several forecast performance measures are calculated. These include the root mean squared prediction errors between model forecasts and actual growth, mean absolute prediction errors, bias (mean prediction error), and efficiency (the correlation between prediction error and prediction). Results are available on request.

Results in Table 1.SF.4 show that all specifications improve the one-month-ahead global industrial production forecast (relative to the benchmark): specification (2), which uses both the global and relative factors, does best and improves the forecast by 10 percent.

The one-quarter-ahead GDP forecast is also improved, but only as price information in the quarter becomes available.[23] In practice, global GDP data may not be available in the next two quarters. For example, in May, first-quarter world GDP is not available, whereas data for April commodity prices are. This timeliness is why commodity prices are useful to forecast GDP growth for the next quarter. As months pass, the forecasting performance improves because commodity price movements more accurately reflect the current quarter. When the full quarter is available, the root mean squared forecast error of the next-quarter GDP is improved by almost 10 percent relative to the benchmark.

In conclusion, there is a wealth of information embedded in commodity prices that can be very useful for taking the pulse of global economic activity. Once idiosyncratic factors are eliminated, major movements in prices of base metals, and, to some extent, energy and agricultural products, can tell us a lot about the state of the global economy, especially when economic activity takes place during significant fluctuations—when the need for forecasting and nowcasting is most compelling.

[23]The specification is tested when price data for the first, both first and second, and all three month(s) of the quarter are available.

Table 1.SF.4. Forecasting Global Industrial Production and GDP

		Metric	Benchmark	Specification 1	Specification 2	Specification 3
IP	Month	RMSE	0.55%	0.50%	0.49%	0.50%
		Ratio	1	0.92	0.90	0.92
GDP	One Month Information	RMSE	0.51%	0.50%	0.51%	0.51%
		Ratio	1	0.99	1.00	1.00
	Two Months Information	RMSE	0.51%	0.48%	0.48%	0.48%
		Ratio	1	0.95	0.95	0.95
	Quarter Information	RMSE	0.51%	0.46%	0.46%	0.46%
		Ratio	1	0.91	0.91	0.90

Sources: IMF, Primary Commodity Price System; and IMF staff calculations.
Note: Benchmark = autoregressive process with the optimal lag based on Bayesian information criterion; Specification 1 = first principal component; Specification 2 = first two principal components; Specification 3 = first principal components of agricultural and nonagricultural commodities. One-period lagged dependent variable is added in all specifications for IP. Information is available one, two, or three months into the quarter. IP = industrial production; RMSE = root mean square error; Ratio = relative RMSE, RMSE divided by benchmark RMSE.

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	
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Europe	**2.2**	**1.2**	**1.8**	**3.2**	**2.9**	**2.8**	**2.2**	**2.2**	**2.1**	. . .	. . .	. . .
Advanced Europe	**1.8**	**1.3**	**1.6**	**1.9**	**1.4**	**1.6**	**2.7**	**2.6**	**2.5**	**7.1**	**7.0**	**6.9**
Euro Area[4,5]	1.8	1.3	1.5	1.8	1.3	1.6	3.0	2.9	2.8	8.2	8.0	7.7
Germany	1.5	0.8	1.4	1.9	1.3	1.7	7.4	7.1	6.8	3.4	3.4	3.3
France	1.5	1.3	1.4	2.1	1.3	1.5	–0.7	–0.4	0.0	9.1	8.8	8.4
Italy	0.9	0.1	0.9	1.2	0.8	1.2	2.6	2.9	2.6	10.6	10.7	10.5
Spain	2.5	2.1	1.9	1.7	1.2	1.6	0.8	0.8	0.8	15.3	14.2	14.1
Netherlands	2.5	1.8	1.7	1.6	2.3	1.6	9.8	9.3	8.9	3.8	3.7	3.6
Belgium	1.4	1.3	1.4	2.3	1.9	1.6	0.4	0.3	0.5	5.9	5.9	5.9
Austria	2.7	2.0	1.7	2.1	1.8	2.0	2.3	2.0	1.9	4.9	5.1	5.0
Greece	2.1	2.4	2.2	0.8	1.1	1.4	–3.4	–2.7	–2.6	19.6	18.5	17.5
Portugal	2.1	1.7	1.5	1.2	1.0	1.7	–0.6	–0.4	–0.5	7.1	6.8	6.3
Ireland	6.8	4.1	3.4	0.7	1.2	1.5	10.0	9.1	8.3	5.7	5.3	5.0
Finland	2.4	1.9	1.7	1.2	1.3	1.5	–0.5	0.1	0.4	7.5	7.2	7.1
Slovak Republic	4.1	3.7	3.5	2.5	2.4	2.2	–2.0	–1.0	–0.7	6.6	6.1	6.0
Lithuania	3.4	2.9	2.6	2.5	2.3	2.3	1.4	1.1	0.6	6.3	6.3	6.2
Slovenia	4.5	3.4	2.8	1.7	1.4	1.6	6.5	4.4	3.4	5.3	4.8	4.9
Luxembourg	3.0	2.7	2.8	2.0	1.6	1.9	5.2	5.0	5.0	5.0	5.0	5.0
Latvia	4.8	3.2	3.1	2.6	2.4	2.4	–1.0	–1.4	–1.7	7.4	7.3	7.3
Estonia	3.9	3.0	2.9	3.4	3.0	2.8	1.7	1.5	1.1	5.4	4.7	3.5
Cyprus	3.9	3.5	3.3	0.8	0.5	1.6	–5.6	–7.3	–6.5	8.4	7.0	6.0
Malta	6.4	5.2	4.4	1.7	1.8	1.9	10.1	9.3	8.8	4.0	4.1	4.3
United Kingdom	1.4	1.2	1.4	2.5	1.8	2.0	–3.9	–4.2	–4.0	4.1	4.2	4.4
Switzerland	2.5	1.1	1.5	0.9	0.8	0.9	9.8	9.0	9.0	2.6	2.8	2.8
Sweden	2.3	1.2	1.8	2.0	1.9	1.7	2.0	2.4	2.5	6.3	6.3	6.3
Norway	1.4	2.0	1.9	2.8	1.9	1.7	8.1	7.4	7.2	3.9	3.7	3.7
Czech Republic	2.9	2.9	2.7	2.2	2.3	2.0	0.2	–0.6	–0.8	2.5	3.1	3.2
Denmark	1.2	1.7	1.8	0.7	1.1	1.3	6.0	5.5	5.1	5.0	4.9	4.9
Iceland	4.6	1.7	2.9	2.7	2.8	2.5	2.9	0.8	1.1	2.7	3.3	3.6
San Marino	1.1	0.8	0.7	1.6	1.6	1.7	0.4	0.4	0.2	8.0	8.1	8.1
Emerging and Developing Europe[6]	**3.6**	**0.8**	**2.8**	**8.7**	**9.0**	**7.5**	**–2.2**	**–0.9**	**–1.4**	. . .	. . .	. . .
Turkey	2.6	–2.5	2.5	16.3	17.5	14.1	–3.6	0.7	–0.4	11.0	12.7	11.4
Poland	5.1	3.8	3.1	1.6	2.0	1.9	–0.7	–1.1	–1.5	3.8	3.6	3.5
Romania	4.1	3.1	3.0	4.6	3.3	3.0	–4.6	–5.2	–4.8	4.2	4.8	4.9
Hungary	4.9	3.6	2.7	2.8	3.2	3.1	0.5	0.5	0.6	3.7	3.5	3.4
Bulgaria[5]	3.2	3.3	3.0	2.6	2.4	2.3	3.9	1.9	1.3	5.2	5.0	5.0
Serbia	4.4	3.5	4.0	2.0	2.0	2.5	–5.2	–5.5	–5.0	13.7	13.4	13.2
Croatia	2.7	2.6	2.5	1.5	1.5	1.6	2.9	2.1	1.6	10.0	9.0	8.0

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]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, Montenegro, and North Macedonia.

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	
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Asia	**5.5**	**5.4**	**5.4**	**2.4**	**2.5**	**2.8**	**1.2**	**1.2**	**1.1**	. . .	. . .	. . .
Advanced Asia	**1.8**	**1.7**	**1.7**	**1.3**	**1.3**	**1.6**	**3.9**	**3.9**	**3.9**	**3.2**	**3.1**	**3.1**
Japan	0.8	1.0	0.5	1.0	1.1	1.5	3.5	3.5	3.6	2.4	2.4	2.4
Korea	2.7	2.6	2.8	1.5	1.4	1.6	4.7	4.6	4.5	3.8	4.0	3.9
Australia	2.8	2.1	2.8	2.0	2.0	2.3	–2.1	–2.1	–2.1	5.3	4.8	4.8
Taiwan Province of China	2.6	2.5	2.5	1.5	1.1	1.2	11.6	11.4	10.7	3.8	3.7	3.7
Singapore	3.2	2.3	2.4	0.4	1.3	1.4	17.7	17.6	17.1	2.1	2.0	2.0
Hong Kong SAR	3.0	2.7	3.0	2.4	2.4	2.5	3.5	3.2	3.4	2.8	2.8	2.8
New Zealand	3.0	2.5	2.9	1.6	2.0	1.9	–4.0	–4.4	–4.3	4.2	4.4	4.4
Macao SAR	4.7	4.3	4.2	3.0	2.5	2.7	35.0	37.4	38.7	1.8	1.8	1.8
Emerging and Developing Asia	**6.4**	**6.3**	**6.3**	**2.6**	**2.8**	**3.1**	**–0.1**	**–0.1**	**–0.2**	. . .	. . .	. . .
China	6.6	6.3	6.1	2.1	2.3	2.5	0.4	0.4	0.3	3.8	3.8	3.8
India[4]	7.1	7.3	7.5	3.5	3.9	4.2	–2.5	–2.5	–2.4	. . .	. . .	. . .
ASEAN-5	**5.2**	**5.1**	**5.2**	**2.8**	**2.8**	**3.0**	**0.6**	**0.6**	**0.4**	. . .	. . .	. . .
Indonesia	5.2	5.2	5.2	3.2	3.3	3.6	–3.0	–2.7	–2.6	5.3	5.2	5.0
Thailand	4.1	3.5	3.5	1.1	1.0	1.3	7.7	7.1	6.3	1.2	1.2	1.2
Malaysia	4.7	4.7	4.8	1.0	2.0	2.6	2.3	2.1	2.1	3.3	3.3	3.3
Philippines	6.2	6.5	6.6	5.2	3.8	3.3	–2.6	–2.2	–1.8	5.3	5.5	5.4
Vietnam	7.1	6.5	6.5	3.5	3.1	3.3	3.0	3.1	2.6	2.2	2.2	2.2
Other Emerging and Developing Asia[5]	**5.3**	**6.3**	**6.2**	**4.5**	**4.6**	**5.3**	**–3.3**	**–2.8**	**–2.8**	. . .	. . .	. . .
Memorandum												
Emerging Asia[6]	**6.5**	**6.3**	**6.3**	**2.6**	**2.8**	**3.0**	**0.0**	**0.0**	**–0.1**	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]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 note 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	
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
North America	**2.7**	**2.2**	**1.9**	**2.7**	**2.2**	**2.7**	**–2.3**	**–2.4**	**–2.6**	**. . .**	**. . .**	**. . .**
United States	2.9	2.3	1.9	2.4	2.0	2.7	–2.3	–2.4	–2.6	3.9	3.8	3.7
Canada	1.8	1.5	1.9	2.2	1.7	1.9	–2.6	–3.1	–2.8	5.8	5.9	6.0
Mexico	2.0	1.6	1.9	4.9	3.8	3.1	–1.8	–1.7	–1.9	3.3	3.5	3.6
Puerto Rico[4]	–2.3	–1.1	–0.7	2.5	0.3	1.3	. . .	. . .	. . .	11.0	11.0	11.2
South America[5]	**0.4**	**1.1**	**2.4**	**7.1**	**8.1**	**6.1**	**–1.8**	**–1.9**	**–1.9**	**. . .**	**. . .**	**. . .**
Brazil	1.1	2.1	2.5	3.7	3.6	4.1	–0.8	–1.7	–1.6	12.3	11.4	10.2
Argentina	–2.5	–1.2	2.2	34.3	43.7	23.2	–5.4	–2.0	–2.5	9.2	9.9	9.9
Colombia	2.7	3.5	3.6	3.2	3.4	3.2	–3.8	–3.9	–3.8	9.7	9.7	9.5
Venezuela	–18.0	–25.0	–10.0	929,789.5	10,000,000	10,000,000	6.0	1.4	–1.9	35.0	44.3	47.9
Chile	4.0	3.4	3.2	2.3	2.3	3.0	–3.1	–3.2	–2.8	6.9	6.5	6.2
Peru	4.0	3.9	4.0	1.3	2.4	2.0	–1.5	–1.4	–1.5	6.7	6.6	6.5
Ecuador	1.1	–0.5	0.2	–0.2	0.6	1.2	–0.7	0.4	1.4	3.7	4.3	4.7
Bolivia	4.3	4.0	3.9	2.3	2.3	3.6	–4.7	–5.2	–5.1	4.0	4.0	4.0
Uruguay	2.1	1.9	3.0	7.6	7.6	7.2	–0.6	–0.8	–1.2	8.0	8.1	7.9
Paraguay	3.7	3.5	4.0	4.0	3.6	4.0	0.5	–0.8	0.4	5.6	5.7	5.8
Central America[6]	**2.7**	**3.2**	**3.5**	**2.6**	**2.7**	**3.0**	**–3.6**	**–2.9**	**–2.7**	**. . .**	**. . .**	**. . .**
Caribbean[7]	**4.7**	**3.6**	**3.7**	**3.7**	**2.4**	**4.3**	**–2.3**	**–2.3**	**–2.0**	**. . .**	**. . .**	**. . .**
Memorandum												
Latin America and the Caribbean[8]	1.0	1.4	2.4	6.2	6.5	5.1	–1.9	–1.9	–2.0	. . .	. . .	. . .
East Caribbean Currency Union[9]	2.1	4.0	3.1	1.3	1.6	2.0	–10.5	–9.6	–9.4	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]Movements in consumer prices are shown as annual averages. Aggregates exclude Venezuela. 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. 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, Aruba, 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. 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	
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Commonwealth of Independent States[4]	**2.8**	**2.2**	**2.3**	**4.5**	**5.7**	**5.0**	**5.0**	**3.8**	**3.4**	**. . .**	**. . .**	**. . .**
Net Energy Exporters	**2.7**	**2.1**	**2.2**	**4.0**	**5.7**	**5.0**	**6.2**	**4.9**	**4.4**	**. . .**	**. . .**	**. . .**
Russia	2.3	1.6	1.7	2.9	5.0	4.5	7.0	5.7	5.1	4.8	4.8	4.7
Kazakhstan	4.1	3.2	3.2	6.0	5.5	5.0	0.6	0.1	0.6	5.0	5.0	5.0
Uzbekistan	5.0	5.0	5.5	17.9	16.5	11.9	–7.8	–5.6	–4.7	. . .	. . .	. . .
Azerbaijan	1.4	3.4	3.1	2.3	2.5	2.5	12.6	11.7	13.3	5.0	5.0	5.0
Turkmenistan	6.2	6.3	6.0	13.6	13.0	9.0	3.1	–2.3	–3.2	. . .	. . .	. . .
Net Energy Importers	**3.6**	**2.8**	**3.1**	**7.6**	**6.2**	**5.3**	**–4.3**	**–4.0**	**–3.4**	**. . .**	**. . .**	**. . .**
Ukraine	3.3	2.7	3.0	10.9	8.0	5.9	–3.7	–2.5	–2.4	9.0	8.5	8.1
Belarus	3.0	1.8	2.2	4.9	5.0	5.0	–2.3	–4.0	–2.3	0.8	0.8	0.8
Georgia	4.7	4.6	5.0	2.6	2.5	3.0	–7.9	–8.0	–7.8	. . .	. . .	. . .
Armenia	5.0	4.6	4.5	2.5	2.1	3.0	–6.2	–4.6	–4.3	18.1	17.9	17.7
Tajikistan	7.0	5.0	4.5	3.8	6.7	6.2	–5.3	–7.0	–6.8	. . .	. . .	. . .
Kyrgyz Republic	3.5	3.8	3.4	1.5	2.2	4.9	–9.8	–10.9	–8.6	6.8	6.8	6.8
Moldova	4.0	3.5	3.8	3.1	3.3	5.1	–9.9	–7.7	–8.0	4.1	4.0	4.0
Memorandum												
Caucasus and Central Asia[5]	4.2	4.1	4.1	8.2	7.8	6.4	0.5	–0.5	–0.1	. . .	. . .	. . .
Low-Income CIS Countries[6]	5.0	4.8	5.1	11.9	11.3	9.0	–7.8	–6.6	–6.0	. . .	. . .	. . .
Net Energy Exporters Excluding Russia	4.1	4.0	4.1	9.0	8.4	6.7	1.6	0.5	0.8	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]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	
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Middle East, North Africa, Afghanistan, and Pakistan	**1.8**	**1.5**	**3.2**	**10.4**	**9.7**	**9.3**	**2.3**	**–0.9**	**–0.7**	**. . .**	**. . .**	**. . .**
Oil Exporters[4]	**0.6**	**0.4**	**2.8**	**9.2**	**9.0**	**8.8**	**5.3**	**0.9**	**1.0**	**. . .**	**. . .**	**. . .**
Saudi Arabia	2.2	1.8	2.1	2.5	–0.7	2.2	8.3	3.5	2.8	. . .	. . .	. . .
Iran	–3.9	–6.0	0.2	31.2	37.2	31.0	4.3	–0.4	–0.6	13.9	15.4	16.1
United Arab Emirates	1.7	2.8	3.3	3.1	2.1	2.1	6.6	5.9	5.1	. . .	. . .	. . .
Algeria	2.1	2.3	1.8	4.3	5.6	6.7	–9.1	–12.5	–9.3	11.7	12.6	13.7
Iraq	0.6	2.8	8.1	0.4	2.0	2.0	4.9	–6.7	–2.9	. . .	. . .	. . .
Qatar	2.2	2.6	3.2	0.2	0.1	3.7	9.3	4.6	4.1	. . .	. . .	. . .
Kuwait	1.7	2.5	2.9	0.7	2.5	2.7	12.7	7.4	8.0	1.3	1.3	1.3
Oil Importers[5]	**4.2**	**3.6**	**4.0**	**12.8**	**11.0**	**10.2**	**–6.5**	**–6.1**	**–5.3**	**. . .**	**. . .**	**. . .**
Egypt	5.3	5.5	5.9	20.9	14.5	12.3	–2.4	–2.4	–1.7	10.9	9.6	8.3
Pakistan	5.2	2.9	2.8	3.9	7.6	7.0	–6.1	–5.2	–4.3	6.1	6.1	6.2
Morocco	3.1	3.2	3.8	1.9	1.4	2.0	–4.5	–4.1	–3.5	9.8	9.2	8.9
Sudan	–2.1	–2.3	–1.3	63.3	49.6	58.1	–11.5	–9.9	–10.0	19.5	21.4	20.9
Tunisia	2.5	2.7	3.2	7.3	7.5	5.6	–11.2	–10.1	–9.1	15.6	. . .	. . .
Lebanon	0.2	1.3	2.0	6.1	2.0	2.3	–27.0	–28.2	–28.4	. . .	. . .	. . .
Jordan	2.0	2.2	2.4	4.5	2.0	2.5	–7.4	–8.2	–8.0	18.3	. . .	. . .
Memorandum												
Middle East and North Africa	1.4	1.3	3.2	11.4	10.0	9.6	3.1	–0.5	–0.4	. . .	. . .	. . .
Israel[6]	3.3	3.3	3.3	0.8	0.9	1.7	1.9	1.7	1.4	4.0	4.0	4.0
Maghreb[7]	3.4	2.8	2.5	5.1	5.2	5.7	–6.8	–8.3	–7.4	. . .	. . .	. . .
Mashreq[8]	4.8	5.0	5.5	18.8	13.0	11.1	–7.0	–6.8	–6.1	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]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	
	2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
Sub-Saharan Africa	**3.0**	**3.5**	**3.7**	**8.5**	**8.1**	**7.4**	**–2.6**	**–3.7**	**–3.7**	**. . .**	**. . .**	**. . .**
Oil Exporters[4]	**1.3**	**2.0**	**2.6**	**12.9**	**11.8**	**10.9**	**1.5**	**–1.2**	**–0.6**	**. . .**	**. . .**	**. . .**
Nigeria	1.9	2.1	2.5	12.1	11.7	11.7	2.1	–0.4	–0.2	22.6	. . .	. . .
Angola	–1.7	0.4	2.9	19.6	17.5	11.1	1.3	–3.8	–1.9	. . .	. . .	. . .
Gabon	1.2	3.1	3.9	4.8	3.0	2.5	–1.9	–3.6	–1.2	. . .	. . .	. . .
Chad	3.1	4.5	6.0	2.5	2.9	3.0	–4.8	–6.1	–4.3	. . .	. . .	. . .
Republic of Congo	0.8	5.4	1.5	1.2	1.5	1.8	5.5	4.7	5.9	. . .	. . .	. . .
Middle-Income Countries[5]	**2.7**	**3.4**	**3.3**	**4.6**	**5.1**	**5.3**	**–3.2**	**–3.2**	**–3.5**	**. . .**	**. . .**	**. . .**
South Africa	0.8	1.2	1.5	4.6	5.0	5.4	–3.4	–3.4	–3.7	27.1	27.5	27.8
Ghana	5.6	8.8	5.8	9.8	9.1	8.4	–3.2	–3.0	–3.5	. . .	. . .	. . .
Côte d'Ivoire	7.4	7.5	7.2	0.3	2.0	2.0	–3.4	–3.0	–2.8	. . .	. . .	. . .
Cameroon	4.0	4.3	4.7	0.9	1.2	1.5	–4.0	–3.7	–3.4	. . .	. . .	. . .
Zambia	3.5	3.1	2.9	7.0	10.7	12.0	–5.0	–2.9	–2.7	. . .	. . .	. . .
Senegal	6.2	6.9	7.5	0.5	1.3	1.5	–7.2	–7.3	–10.2	. . .	. . .	. . .
Low-Income Countries[6]	**5.9**	**5.3**	**5.7**	**7.7**	**7.4**	**5.7**	**–6.8**	**–7.3**	**–7.8**	**. . .**	**. . .**	**. . .**
Ethiopia	7.7	7.7	7.5	13.8	9.3	8.0	–6.5	–6.0	–5.4	. . .	. . .	. . .
Kenya	6.0	5.8	5.9	4.7	4.4	5.0	–5.4	–5.0	–4.9	. . .	. . .	. . .
Tanzania	6.6	4.0	4.2	3.5	3.5	4.5	–3.7	–3.9	–4.2	. . .	. . .	. . .
Uganda	6.2	6.3	6.2	2.6	3.6	4.4	–6.8	–8.2	–9.1	. . .	. . .	. . .
Madagascar	5.2	5.2	5.3	7.3	6.7	6.3	0.3	–1.4	–3.5	. . .	. . .	. . .
Democratic Republic of the Congo	3.9	4.3	4.4	29.3	8.4	6.7	–0.5	–1.8	–2.9	. . .	. . .	. . .
Memorandum												
Sub-Saharan Africa Excluding South Sudan	3.1	3.4	3.7	8.2	8.1	7.4	–2.6	–3.7	–3.7	. . .	. . .	. . .

Note: Data for some countries are based on fiscal years. Please refer to Table F in the Statistical Appendix for a list of economies with exceptional reporting periods.
[1]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, Eswatini, Lesotho, Mauritius, Namibia, and Seychelles.
[6]Includes Benin, Burkina Faso, Burundi, the Central African Republic, Comoros, Eritrea, The Gambia, Guinea, Guinea-Bissau, Liberia, Malawi, Mali, Mozambique, Niger, Rwanda, São Tomé and Príncipe, Sierra Leone, Togo, and Zimbabwe.

Annex Table 1.1.7. Summary of World Real per Capita Output

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

	Average									Projections		
	2001–10	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2024
World	**2.4**	**3.0**	**2.0**	**2.2**	**2.3**	**2.1**	**2.1**	**2.5**	**2.4**	**2.1**	**2.4**	**2.5**
Advanced Economies	**1.1**	**1.2**	**0.7**	**0.9**	**1.6**	**1.7**	**1.2**	**1.9**	**1.8**	**1.3**	**1.3**	**1.2**
United States	0.8	0.8	1.5	1.1	1.7	2.1	0.8	1.6	2.2	1.6	1.2	0.9
Euro Area[1]	0.8	1.3	–1.1	–0.5	1.1	1.7	1.7	2.3	1.7	1.0	1.4	1.2
Germany	1.0	3.7	0.5	0.3	1.8	0.6	1.3	2.1	1.2	0.7	1.4	1.3
France	0.6	1.7	–0.2	0.1	0.4	0.7	0.9	1.9	1.4	0.8	1.0	1.1
Italy	–0.2	0.2	–3.2	–2.3	–0.3	0.9	1.3	1.7	1.1	–0.3	0.9	0.7
Spain	0.8	–1.4	–3.0	–1.3	1.7	3.8	3.2	3.0	2.4	1.7	1.4	1.3
Japan	0.6	–0.3	1.7	2.2	0.5	1.3	0.6	2.1	1.0	1.2	0.8	1.0
United Kingdom	1.0	0.8	0.8	1.4	2.2	1.5	1.0	1.2	0.7	0.6	0.8	1.1
Canada	0.8	2.1	0.7	1.3	1.8	–0.1	0.1	1.7	0.4	0.2	1.0	0.7
Other Advanced Economies[2]	2.6	2.5	1.3	1.6	2.2	1.4	1.6	2.2	1.9	1.5	1.8	1.7
Emerging Market and Developing Economies	**4.6**	**4.9**	**3.6**	**3.6**	**3.2**	**2.8**	**3.1**	**3.3**	**3.2**	**3.0**	**3.5**	**3.6**
Commonwealth of Independent States (CIS)	5.3	4.6	3.2	2.0	1.3	–2.5	0.4	1.9	2.4	1.8	2.0	2.2
Russia	5.1	5.0	3.6	1.7	0.6	–2.6	0.2	1.6	2.4	1.7	1.8	1.8
CIS Excluding Russia	6.7	4.6	2.6	3.3	2.5	–1.7	1.2	3.3	3.1	2.7	2.9	3.3
Emerging and Developing Asia	7.2	6.7	5.9	5.9	5.8	5.7	5.7	5.6	5.5	5.4	5.4	5.3
China	9.9	9.0	7.4	7.3	6.7	6.4	6.1	6.2	6.2	5.9	5.8	5.5
India[3]	5.9	5.2	4.1	5.0	6.0	6.6	6.8	5.8	5.7	5.9	6.1	6.3
ASEAN-5[4]	3.7	3.1	4.7	3.7	3.3	3.6	3.8	4.2	4.1	3.9	4.0	4.1
Emerging and Developing Europe	3.5	6.2	2.1	4.3	3.5	4.3	2.9	5.6	3.0	0.2	2.3	2.6
Latin America and the Caribbean	1.9	3.4	1.7	1.7	0.2	–0.9	–1.8	0.1	0.1	0.4	1.6	2.0
Brazil	2.5	3.1	1.0	2.1	–0.3	–4.4	–4.1	0.3	0.4	1.3	1.8	1.7
Mexico	0.2	2.4	2.4	0.2	1.7	2.2	1.9	1.0	1.0	0.7	1.0	1.9
Middle East, North Africa, Afghanistan, and Pakistan	1.8	3.8	0.6	–0.1	0.0	0.4	2.9	–0.4	–0.2	–0.5	1.2	0.8
Saudi Arabia	0.3	6.8	2.5	–0.1	1.1	3.3	–0.7	–3.2	0.2	–0.2	0.1	0.3
Sub-Saharan Africa	2.9	2.5	1.6	2.5	2.4	0.5	–1.3	0.2	0.4	0.9	1.1	1.3
Nigeria	6.0	2.1	1.5	2.6	3.5	–0.1	–4.2	–1.9	–0.8	–0.6	–0.2	–0.2
South Africa	2.2	1.8	0.7	1.0	0.3	–0.4	–1.2	–0.2	–1.3	–0.4	–0.1	0.2
Memorandum												
European Union	1.2	1.5	–0.6	0.1	1.6	2.0	1.8	2.5	1.9	1.3	1.5	1.4
Low-Income Developing Countries	3.8	3.6	1.7	3.7	3.7	2.2	1.2	2.6	2.4	2.7	2.9	3.1

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

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