CHAPTER 1

GLOBAL PROSPECTS AND POLICIES

Global Economy Climbing Out of the Depths, Prone to Setbacks

The months after the release of the June 2020 *World Economic Outlook* (WEO) *Update* have offered a glimpse of how difficult rekindling economic activity will be while the pandemic surges. During May and June, as many economies tentatively reopened from the Great Lockdown, the global economy started to climb from the depths to which it had plunged in April. But with the pandemic spreading and accelerating in places, many countries slowed reopening, and some are reinstating partial lockdowns. While the swift recovery in China has surprised on the upside, the global economy's long ascent back to pre-pandemic levels of activity remains prone to setbacks.

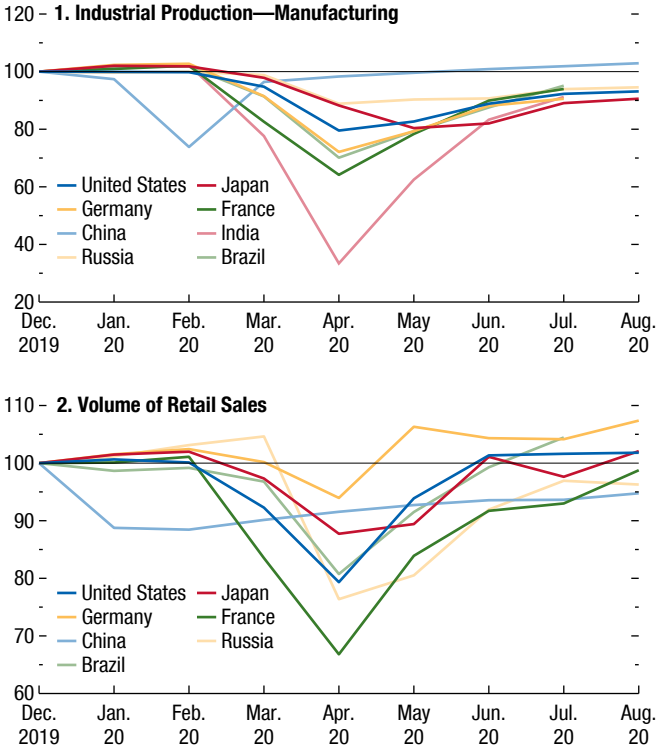
- *Activity picked up in May and June as economies reopened.* The strengthening from the trough in April was most evident, not surprisingly, in retail sales, where discretionary consumer spending rose with reopening (Figure 1.1). Firms, however, remained cautious in responding to this revival: industrial production in many countries is still well below December levels.
- *Second quarter GDP outturns, on balance, delivered positive surprises.* As economies reopened and released constraints on spending, overall activity normalized faster than anticipated in the June 2020 WEO *Update*. GDP outturns for the second quarter surprised on the upside in China (where, after lockdowns eased in early April, public investment helped boost activity to return to positive growth in the second quarter) and the United States and euro area (where both economies contracted at a historic pace in the second quarter, but less severely than projected, with government transfers supporting household incomes). The news, however, was not uniformly positive. Second quarter GDP was weaker than projected, for instance, where domestic demand plunged following a very sharp compression in consumption and a collapse in investment (such as in India), where the pandemic continued to spread (such as in Mexico), where soft external demand weighed particularly heavily on exporting sectors (for example, in Korea), and where significant weakening of remittance flows weighed on domestic spending (for example, in the Philippines).
- *Global trade* began recovering in June as lockdowns were eased (Figure 1.2). China is an important contributor. Its exports recovered from deep declines earlier in the year, supported by an earlier restart of activity and a strong pickup in external demand for medical equipment and for equipment to support the shift to remote working.
- *The pandemic continues to spread.* By late September, the number of confirmed infections worldwide exceeded 33 million, with over a million deaths—up from more than 7 million infections and 400,000 deaths at the time of the June 2020 WEO *Update*. Confirmed cases rose dramatically in the United States, Latin America, India, and South Africa. Moreover, there were renewed upticks in places that had previously flattened the infection curve: Australia, Japan, Spain, and France.
- *Reopening has stalled.* Confronting renewed upticks, countries slowed their reopening during August and reinstated partial lockdowns in some cases (Figure 1.3).

The deep wounds to the global economy from the pandemic recession are further evident in labor market indicators and inflation outcomes.

- *Labor market.* According to the International Labour Organization, the global reduction in work hours in the second quarter of 2020 compared with the fourth quarter of 2019 was equivalent to the loss of 400 million full-time jobs, deepening from equivalent 155 million full-time jobs lost in the first quarter. Women in the labor force, particularly those informally employed, have been disproportionately affected by the pandemic and lockdowns needed to slow the spread of the virus: the International Labour Organization estimates that 42 percent of informally employed women work in severely affected sectors of the economy, compared with about 32 percent of men in informal employment. Consistent with the pattern for global activity

Figure 1.1. Industrial Production and Retail Sales
(Index, December 2019 = 100; seasonally adjusted)

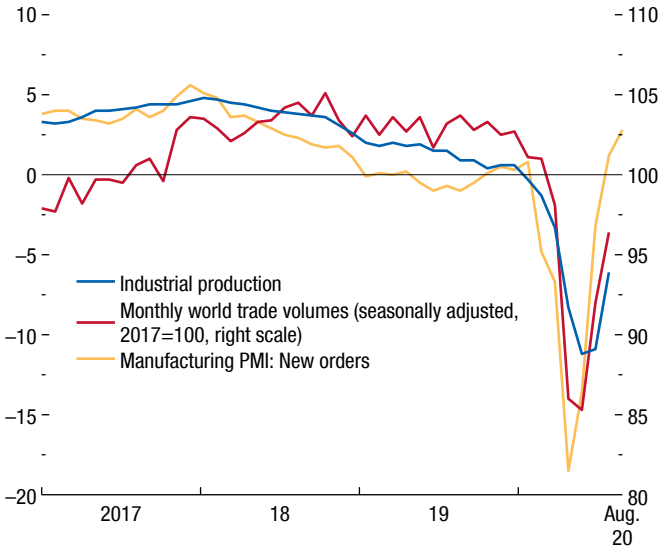
Retail sales have generally recovered stronger than industrial production.



Sources: Haver Analytics; and IMF staff calculations.

Figure 1.2. Global Activity Indicators
(Three-month moving average, annualized percent change; deviations from 50 for manufacturing PMI, unless noted otherwise)

Global trade and industrial production picked up as lockdowns were eased.



Sources: CPB Netherlands Bureau for Economic Policy Analysis; Haver Analytics; Markit Economics; and IMF staff calculations.
Note: PMI = purchasing managers' index.

and trade, employment and labor force indicators have improved since May. For example, the unemployment rate fell substantially and job creation increased in the United States, applications to Germany's *Kurzarbeit* reduced-hours work program slowed sharply in May and continued declining steadily throughout August, and female labor force participation had partially recovered in Japan as of July after close to 1 million women left the labor force from January to April.

- *Inflation.* While prices of such items as medical supplies increased and commodity prices lifted from their April trough (Commodities Special Feature; Figure 1.4), the effects of weak aggregate demand appear to have outweighed the impact of supply interruptions.[1] In sequential terms, inflation in advanced economies remains below pre-pandemic levels (Figure 1.5). In emerging market and developing economies inflation declined sharply in the initial stages of the pandemic, although it has since picked up in some countries (India, for example, reflecting supply disruptions and a rise in food prices).

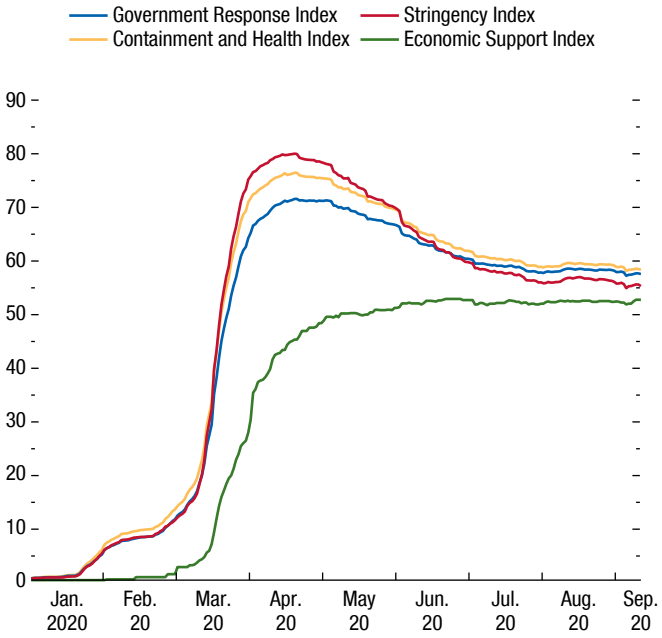
A unique recession. The downturn triggered by the COVID-19 pandemic has been very different from past recessions. In previous downturns, service-oriented sectors have tended to suffer smaller growth declines than manufacturing. In the current crisis, the public health response needed to slow transmission, together with behavioral changes, has meant that service sectors reliant on face-to-face interactions—particularly wholesale and retail trade, hospitality, and arts and entertainment—have seen larger contractions than manufacturing (Figure 1.6). The scale of disruption indicates that, without a vaccine and effective therapies to combat the virus, such sectors face a particularly difficult path back to any semblance of normalcy.

A strong rebound in the third quarter, but slowing momentum entering the fourth quarter. High-frequency indicators suggest a strong, albeit partial, rebound in

[1]The assessment is subject to an important caveat. The basket of goods and services used to measure consumer price inflation may not be representative of actual consumption patterns during the pandemic and may underestimate the true increase in the cost of living.

Figure 1.3. Government Lockdowns and Economic Responses to COVID-19: Global Index

Reopening has slowed as new infections have increased.

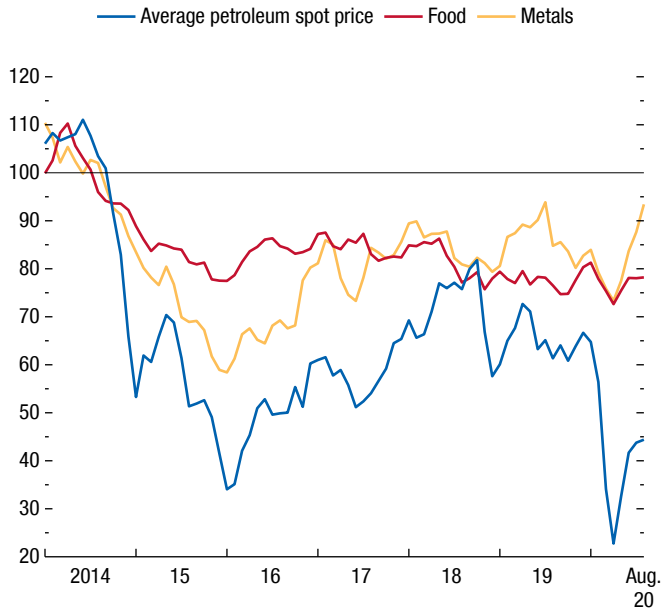


Source: Oxford COVID-19 Government Response Tracker.

Figure 1.4. Commodity Prices

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

Commodity prices have lifted since April.

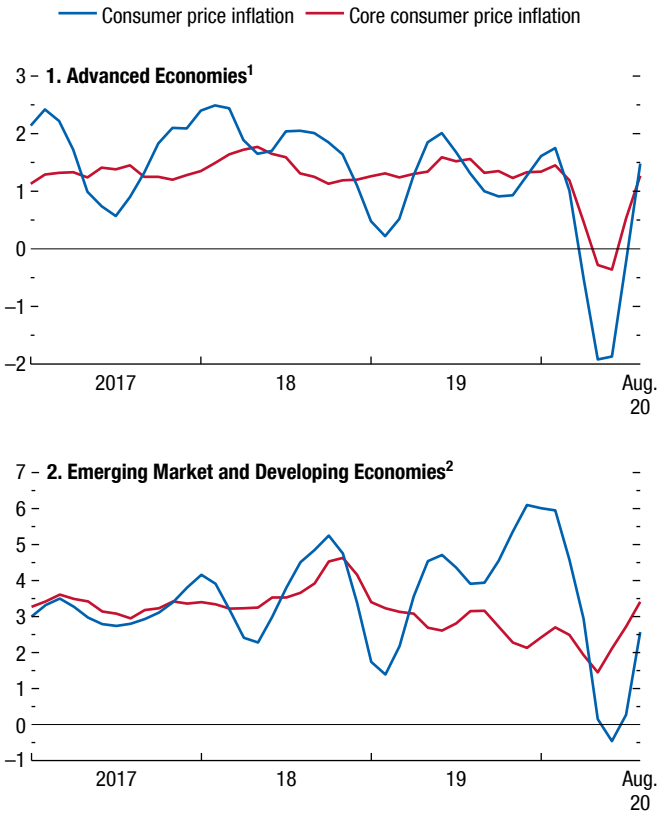


Sources: IMF, Primary Commodity Price System; and IMF staff calculations.

Figure 1.5. Global Inflation

(Three-month moving average; annualized percent change)

Inflation generally remains below pre-pandemic levels.

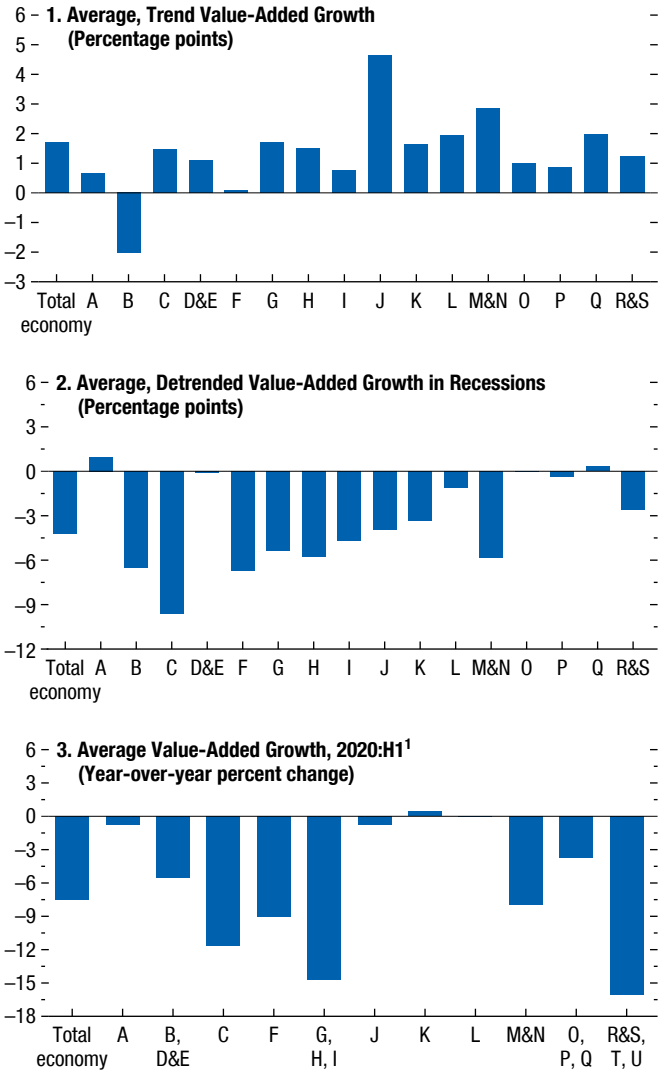


Sources: Consensus Economics; Haver Analytics; and IMF staff calculations.
Note: Country lists use International Organization for Standardization (ISO) country codes.
[1]Advanced economies are AUT, BEL, CAN, CHE, CZE, DEU, DNK, ESP, EST, FIN, FRA, GBR, GRC, HKG, IRL, ISR, ITA, JPN, KOR, LTU, LUX, LVA,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

activity in the third quarter, after the trough in the second quarter. However, momentum going into the fourth quarter appears to be slowing. Business surveys of purchasing managers show firms in the United States, euro area, China, and Brazil, for example, expanded output successively in July and August compared with the previous month, whereas the opposite was true elsewhere (for instance, in India, Japan, and Korea)—(Figure 1.7). For September, these indicators point to stronger activity in manufacturing but some setback for services, most likely reflecting the increase in infections. Other high-frequency data suggest a leveling off in activity—as reflected, for example, in daily consumer spending in the United States (see the Opportunity Insights Economic Tracker 2020).

Figure 1.6. Sectoral Growth and the Business Cycle

In the COVID-19 recession, service sectors have seen larger contractions than has manufacturing.

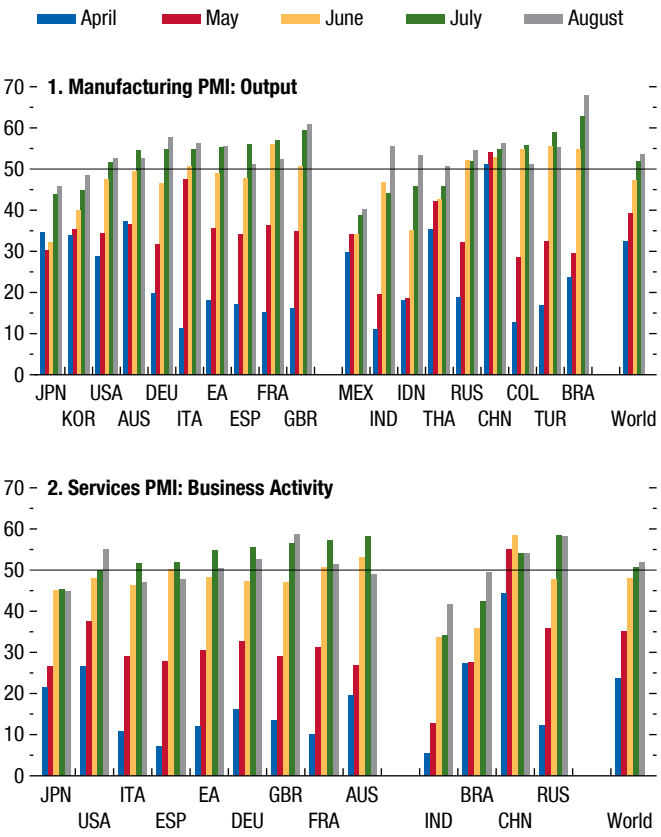


Sources: EU KLEMS; Organisation for Economic Co-operation and Development; US Bureau of Economic Analysis; and IMF staff calculations.
Note: Underlying data in panels 1 and 2 are annual for 1995–2017. Sector groupings in panel 3 are slightly different from those in panels 1 and 2 because of reporting differences in the quarterly sectoral national data. Recessions are years of negative total value-added growth. "Total economy" indicates value added for the economy as a whole. Country sample comprises Austria, Belgium, Finland, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Spain, the United Kingdom, and the United States. Sectors are ISIC rev.4: A = agriculture, forestry, and fishing; B = mining and quarrying; C = manufacturing; D&E = utilities; F = construction; G = wholesale and retail trade; H = transportation; I = accommodation and food services; J = information and communication; K = financial and insurance activities; L = real estate; M&N = professional and administrative services; O = public administration and defense; P = education; Q = human health and social work; R&S = arts, entertainment, recreation, and other services; T = activities of households as employers and undifferentiated goods-and-services-producing activities of households for own use; U = activities of extraterritorial organizations and bodies.
[1]Excludes Japan due to lack of sectoral detail. 2020:Q1 year-over-year growth is used for the United States in panel 3 calculations due to lack of data on 2020:Q2.

Figure 1.7. Purchasing Managers' Indices, 2020

(Index; 50+ = expansion)

Business surveys of purchasing managers suggest a strong but only partial rebound in activity after the trough in the second quarter.



Sources: IHS Markit; and IMF staff calculations.
Note: EA = euro area; PMI = purchasing managers' indices. Data labels use International Organization for Standardization (ISO) country codes.

Moreover, weekly initial jobless claims in the United States continued close to 1 million into late September, indicating sustained widespread layoffs and adverse impacts on household income.

Massive policy support has prevented worse outcomes. The bleak numbers that mark the COVID-19 recession would have constituted far worse signposts had massive policy support not thwarted further slides in activity. As discussed in the October 2020 *Fiscal Monitor*, discretionary revenue and spending measures announced so far in advanced economies amount to more than 9 percent of GDP, with another 11 percent in various forms of liquidity support, including equity injections, asset purchases, loans, and credit guarantees. The response in emerging market and developing

economies is smaller but still sizable: about 3.5 percent of GDP in discretionary budget measures and more than 2 percent in liquidity support.

New policy initiatives have also helped lift sentiment. Beyond their sheer scale, the novelty of the policy actions has also supported sentiment. Prominent examples of new initiatives include the €750 billion European Union pandemic recovery package–fund (more than half of it grant-based) and a wide range of temporary lifeline policies worldwide. The latter have included cash and in-kind transfers to affected firms and households; wage subsidies to maintain employment; expanded unemployment insurance coverage; tax deferrals; and regulatory initiatives to ease classification rules and provisioning requirements for banks' nonperforming loans, together with the release of buffers to help absorb losses. Central bank actions in advanced economies have involved more diverse, larger scales of asset purchases and relending facilities, supporting credit provision to a wide range of borrowers. The Federal Reserve also announced changes in its monetary policy strategy, moving to a flexible average inflation target of 2 percent over time. Emerging market central banks' responses combined interest rate cuts, new relending facilities, and, for the first time in many cases, asset purchases (see Chapter 2 of the October 2020 *Global Financial Stability Report* [GFSR]).

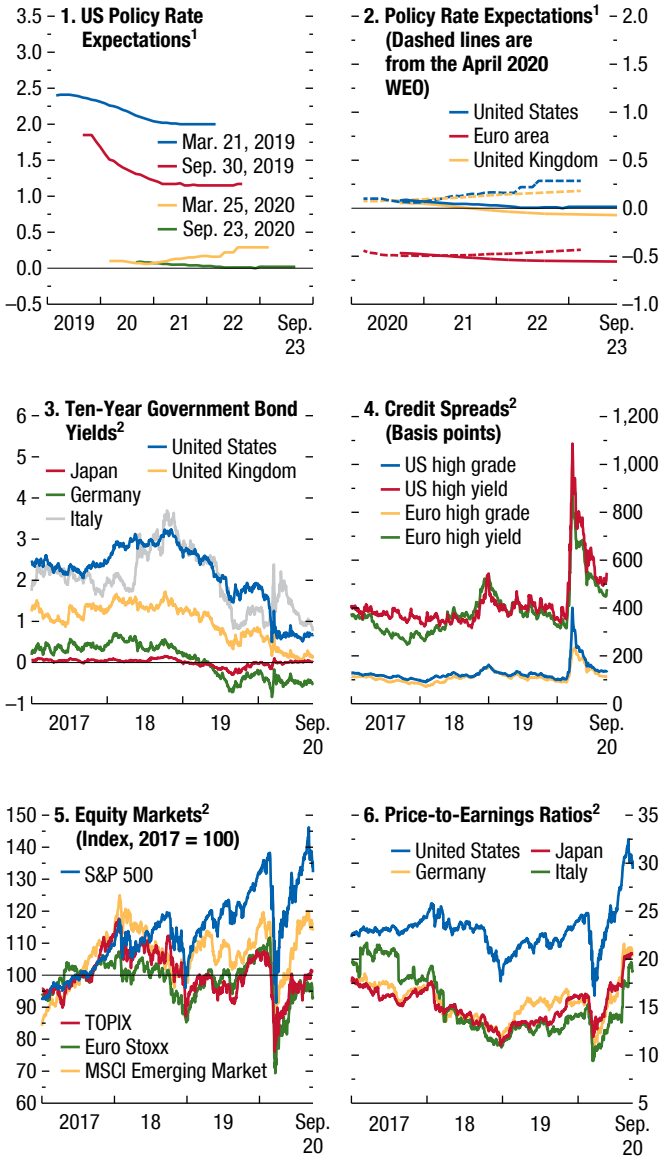
Financial conditions have generally continued to ease. These aggressive policy countermeasures have played a vital role in supporting sentiment and preventing further amplification of the COVID-19 shock through the financial system. Financial conditions have eased since June for advanced economies and for most emerging market and developing economies, implying a continuing disconnect between financial markets and the real economy that partly reflects the unprecedented policy support (as discussed in the October 2020 GFSR).

- Equity markets in advanced economies have mostly regained (and in some cases exceeded) their levels from the start of the year, sovereign bond yields are broadly unchanged or have declined further since June (as seen in Italy since the European Union's pandemic recovery package was established and the European Central Bank's pandemic emergency purchase program was expanded), and corporate spreads have dropped further, particularly for high-yield credit (benefiting, in the United States, from the Federal Reserve's targeted lending facilities), as shown in Figure 1.8. The decline in interest rates reflects a combination of a lower return on

Figure 1.8. Advanced Economies: Monetary and Financial Market Conditions

(Percent, unless noted otherwise)

Financial conditions imply a continuing disconnect between financial markets and the real economy.



Sources: Bloomberg Finance L.P.; Haver Analytics; Refinitiv Datastream; and IMF staff calculations.
Note: MSCI = Morgan Stanley Capital International; S&P = Standard & Poor's; TOPIX = Tokyo Stock Price Index; WEO = *World Economic Outlook*.
[1]Expectations are based on the federal funds rate futures for the United States, the sterling overnight interbank average rate for the United Kingdom, and the euro interbank offered forward rate for the euro area; updated September 23, 2020.
[2]Data are through September 23, 2020.

safe assets (consistent with expectations of central bank policy rates remaining low into the foreseeable future) and compression of risk premiums—as shown in panels 1 through 4 of Figure 1.8.

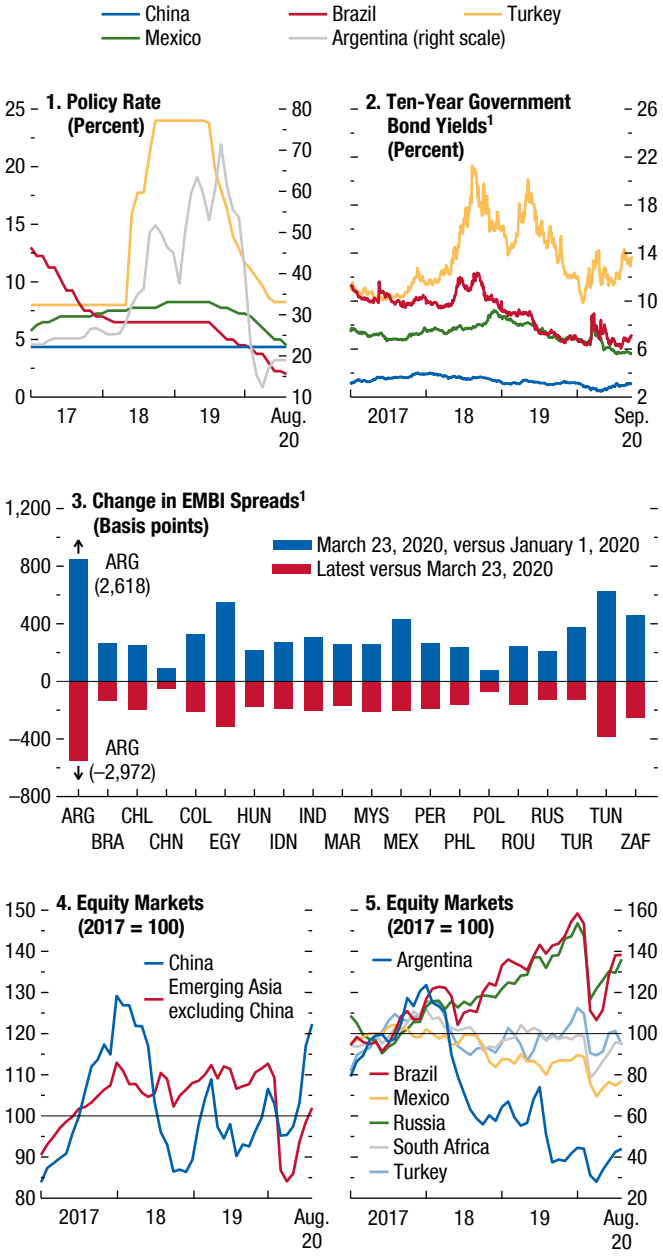
- Sovereign yields in emerging markets have generally declined in recent months. Spreads over US Treasury securities, which had begun falling after the Federal Reserve's aggressive actions in March to offset tighter financial conditions and dollar liquidity shortages, have continued to compress since June in line with stronger risk appetite (Figure 1.9). Equity markets in emerging market and developing economies have also generally firmed up since June (notably in China). Steps to support dollar liquidity (such as central bank swap lines), together with the recovery under way in China, have helped rekindle portfolio flows to some emerging markets after the sharp reversal in March (Figure 1.10). Nonetheless, as noted in the October 2020 GFSR, the recovery in portfolio flows is uneven, with some countries continuing to experience large outflows.
- Among major currencies, the dollar depreciated by over 4 ½ percent in real effective terms between April and late September, reflecting improving global risk sentiment and concerns about the impact of rising COVID-19 cases on the speed of the US recovery. During the same period, the euro appreciated by close to 4 percent on improving economic prospects and slower increases in COVID-19 cases. The currencies of commodity exporters among advanced economies strengthened as commodity prices firmed. Most emerging market currencies recovered between April and June, after the severe pressures during the market turmoil in March. Since then the Chinese renminbi has strengthened and the currencies of other Asian emerging market economies have generally remained stable in real effective terms. In contrast, the Russian ruble depreciated on geopolitical factors and the currencies of countries severely affected by the pandemic or with a vulnerable external or fiscal position (such as Argentina, Brazil, and Turkey) have also weakened (Figure 1.11).

Considerations for the Forecast

Fundamental uncertainty regarding the pandemic and associated factors. The full extent of the contraction in the second quarter of 2020 has become clearer since the June 2020 WEO *Update*, providing a more informed basis for the near-term forecast. But the persistence

Figure 1.9. Emerging Market Economies: Monetary and Financial Conditions

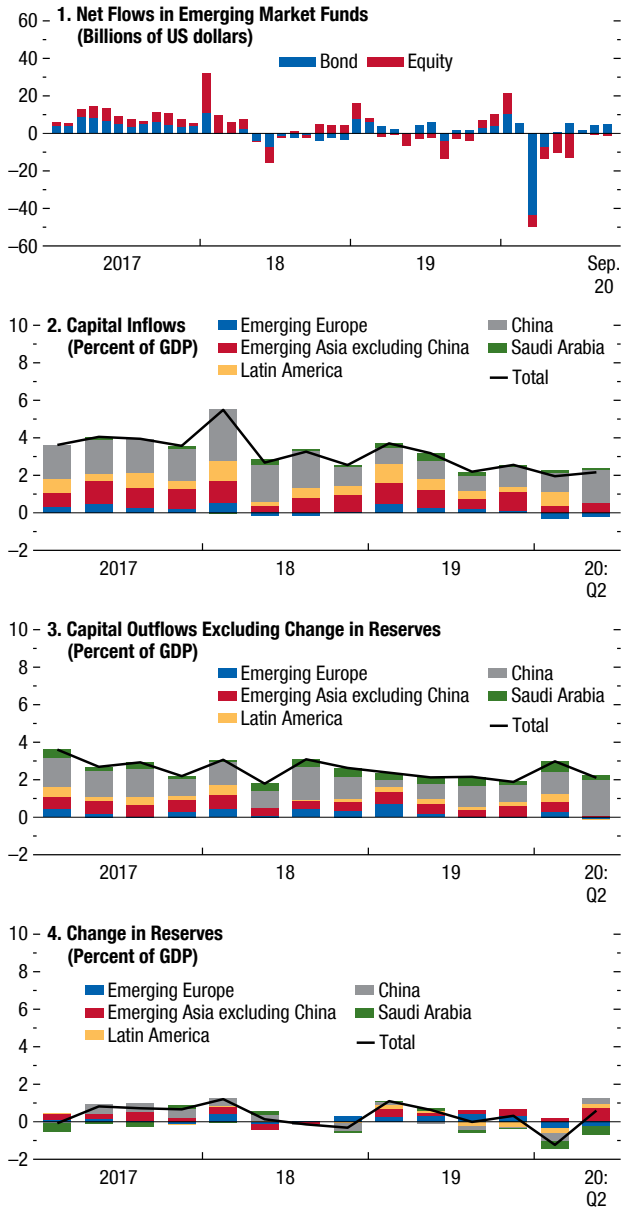
Emerging market sovereign spreads over US Treasury securities declined after the Federal Reserve's actions in March to offset tighter financial conditions and dollar liquidity shortages.



Sources: Bloomberg Finance L.P.; Haver Analytics; IMF, *International Financial Statistics;* Refinitiv 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]Data are through September 22, 2020.

Figure 1.10. Emerging Market Economies: Capital Flows

The recovery in portfolio flows to emerging markets has been uneven, with some continuing to experience large outflows.

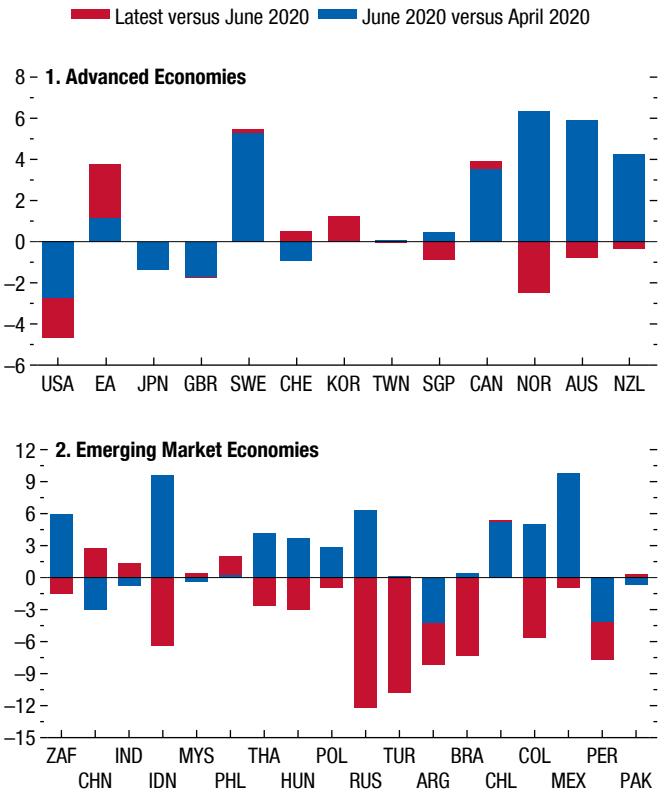


Sources: EPFR Global; Haver Analytics; IMF, *International Financial Statistics;* and IMF staff calculations.
Note: Capital inflows are net purchases of domestic assets by nonresidents. Capital outflows are net purchases of foreign assets by domestic residents. Emerging Asia excluding China comprises India, Indonesia, Malaysia, the Philippines, and Thailand; emerging Europe comprises Hungary, Poland, Romania, Russia, and Turkey; Latin America comprises Brazil, Chile, Colombia, Mexico, and Peru.

Figure 1.11. Real Effective Exchange Rate Changes, April–September 2020

(Percent)

Major currency movements have reflected shifts in risk sentiment.



Source: IMF staff calculations.
Note: EA = euro area. Latest data available are for September 25, 2020. Data labels use International Organization for Standardization (ISO) country codes.

of the shock remains uncertain and relates to factors inherently difficult to predict, including the path of the pandemic, the adjustment costs it imposes on the economy, the effectiveness of the economic policy response, and the evolution of financial sentiment.

The baseline forecast rests on the following considerations and assumptions:

- *Stronger-than-anticipated GDP outturns in the second quarter.* The developments discussed in the previous section suggest that the worst may be over for now, but nothing is assured while the pandemic worsens and stalls reopening. A slightly less severe hit to activity than previously projected for the second quarter implies an upward revision to the 2020 forecast. But other considerations weigh on the forecast for 2021 and beyond.

- *Persistent social distancing and enhanced workplace safety standards.* The baseline projection assumes that social distancing will continue into 2021 but will then fade over time as vaccine coverage expands and therapies improve, with local transmission brought to low levels everywhere by the end of 2022. Vaccine trials have progressed at an unprecedented rate, and some have reached the final testing phase prior to approval or rejection. Nonetheless, even after approval, vaccine coverage is likely to expand only gradually as it will take time to scale up production and distribute adequate doses worldwide at affordable prices. In countries where infection rates appear to have gone past their peak, persistent behavioral changes, together with enhanced workplace hygiene and safety standards, are assumed to keep new infections at a level that allows health care systems to cope with the caseload and without requiring a return to economy-wide lockdowns. For other countries where infections are still rising, the baseline also assumes the possibility of renewed lockdowns for particular zones, even if stringent nationwide shutdowns are not repeated.
- *Scarring.* As in the WEO forecasts in April and June, the baseline also assumes that the deep downturn this year will damage supply potential to varying degrees across economies. The impact will depend on various factors discussed in the section on the medium-term growth outlook, including the extent of firm closures, exit of discouraged workers from the labor force, and resource mismatches (sectoral, occupational, and geographic).
- *Policy support and financial conditions.* Fiscal policy settings in the baseline reflect the $6 trillion direct tax and spending measures announced and implemented worldwide so far in response to the crisis (see the October 2020 *Fiscal Monitor*). Major central banks are assumed to maintain their current settings throughout the forecast horizon to the end of 2025. The baseline forecast is consistent with financial conditions remaining broadly at current levels.
- *Commodity prices.* Average petroleum spot prices per barrel are projected at $41 in 2020 and $43.8 in 2021, higher than in the April and June forecasts. Oil futures curves indicate that prices are expected to rise thereafter toward $48, some 25 percent below the 2019 average. Nonfuel commodity prices are expected to rise faster than assumed in April and June.

Partial Recovery from Deep Recession Expected in 2021

Global growth is projected at –4.4 percent in 2020, 0.8 percentage point above the June 2020 WEO *Update* forecast (Table 1.1). The stronger projection for 2020 compared with the June 2020 WEO *Update* reflects the net effect of two competing factors: the upward impetus from better-than-anticipated second quarter GDP outturns (mostly in advanced economies) versus the downdraft from persistent social distancing and stalled reopenings in the second half of the year. As explained in Box 1.1, the global growth forecast and the forecast for regional aggregates in Table 1.1 use an updated set of purchasing-power-parity weights for individual economies following the release of the 2017 survey of the International Comparison Program.[2]

As discussed, a recovery has taken root in the third quarter of 2020. It is expected to strengthen gradually over 2021. The recovery is likely to be characterized by persistent social distancing until health risks are addressed (as discussed in Chapter 2)—and countries may have to again tighten mitigation measures depending on the spread of the virus (see also Online Annex 1.2 of the October 2020 *Fiscal Monitor*). Global growth is projected at 5.2 percent in 2021, 0.2 percentage point lower than in the June 2020 WEO *Update*. The projected 2021 rebound following the deep 2020 downturn implies a small expected increase in global GDP over 2020–21 of 0.6 percentage point relative to 2019.

Growth in the *advanced economy* group is projected at –5.8 percent in 2020, 2.3 percentage points stronger than in the June 2020 WEO *Update*. The upward revision reflects, in particular, the better-than-foreseen US and euro area GDP outturns in the second quarter. In 2021 the advanced economy growth rate is projected to strengthen to 3.9 percent, leaving 2021 GDP for the group some 2 percent below what it was in 2019. The US economy is projected to contract by 4.3 percent, before growing at 3.1 percent in 2021. A deeper contraction of 8.3 percent is projected for

[2]The main shift in global weights compared with the previous set is an increase of 3 percentage points in the relative weight of advanced economies (from 40 percent to 43 percent for 2019), offset by a reduction in the relative weight of emerging market and developing economies, most notably China and India. Because the new set increases the weight attached to slower-growing advanced economies, the aggregation of the June 2020 WEO *Update* country forecasts with the new purchasing-power-parity weights yields a slightly lower projection for world growth in 2020 (–5.2 percent) than the one shown in June (–4.9 percent).

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

(Percent change, unless noted otherwise)

		Projections		Difference from June 2020 WEO *Update*[1]		Difference from April 2020 WEO[1]	
	2019	2020	2021	2020	2021	2020	2021
World Output	**2.8**	**–4.4**	**5.2**	**0.8**	**–0.2**	**–1.1**	**–0.5**
Advanced Economies	**1.7**	**–5.8**	**3.9**	**2.3**	**–0.9**	**0.3**	**–0.6**
United States	2.2	–4.3	3.1	3.7	–1.4	1.6	–1.6
Euro Area	1.3	–8.3	5.2	1.9	–0.8	–0.8	0.5
Germany	0.6	–6.0	4.2	1.8	–1.2	1.0	–1.0
France	1.5	–9.8	6.0	2.7	–1.3	–2.6	1.5
Italy	0.3	–10.6	5.2	2.2	–1.1	–1.5	0.4
Spain	2.0	–12.8	7.2	0.0	0.9	–4.8	2.9
Japan	0.7	–5.3	2.3	0.5	–0.1	–0.1	–0.7
United Kingdom	1.5	–9.8	5.9	0.4	–0.4	–3.3	1.9
Canada	1.7	–7.1	5.2	1.3	0.3	–0.9	1.0
Other Advanced Economies[2]	1.7	–3.8	3.6	1.1	–0.6	0.8	–1.0
Emerging Market and Developing Economies	**3.7**	**–3.3**	**6.0**	**–0.2**	**0.2**	**–2.1**	**–0.5**
Emerging and Developing Asia	5.5	–1.7	8.0	–0.9	0.6	–2.7	–0.5
China	6.1	1.9	8.2	0.9	0.0	0.7	–1.0
India[3]	4.2	–10.3	8.8	–5.8	2.8	–12.2	1.4
ASEAN-5[4]	4.9	–3.4	6.2	–1.4	0.0	–2.8	–1.5
Emerging and Developing Europe	2.1	–4.6	3.9	1.2	–0.3	0.6	–0.3
Russia	1.3	–4.1	2.8	2.5	–1.3	1.4	–0.7
Latin America and the Caribbean	0.0	–8.1	3.6	1.3	–0.1	–2.9	0.2
Brazil	1.1	–5.8	2.8	3.3	–0.8	–0.5	–0.1
Mexico	–0.3	–9.0	3.5	1.5	0.2	–2.4	0.5
Middle East and Central Asia	1.4	–4.1	3.0	0.4	–0.5	–1.3	–1.0
Saudi Arabia	0.3	–5.4	3.1	1.4	0.0	–3.1	0.2
Sub-Saharan Africa	3.2	–3.0	3.1	0.2	–0.3	–1.4	–1.0
Nigeria	2.2	–4.3	1.7	1.1	–0.9	–0.9	–0.7
South Africa	0.2	–8.0	3.0	0.0	–0.5	–2.2	–1.0
Memorandum							
Low-Income Developing Countries	5.3	–1.2	4.9	–0.2	–0.3	–1.6	–0.7
Middle East and North Africa	0.8	–5.0	3.2	0.7	–0.5	–1.8	–1.0
World Growth Based on Market Exchange Rates	2.4	–4.7	4.8	1.4	–0.5	–0.5	–0.6
World Trade Volume (goods and services)	**1.0**	**–10.4**	**8.3**	**1.5**	**0.3**	**0.6**	**–0.1**
Imports							
Advanced Economies	1.7	–11.5	7.3	1.7	0.1	0.0	–0.2
Emerging Market and Developing Economies	–0.6	–9.4	11.0	0.0	1.6	–1.2	1.9
Exports							
Advanced Economies	1.3	–11.6	7.0	2.0	–0.2	1.2	–0.4
Emerging Market and Developing Economies	0.9	–7.7	9.5	1.6	0.2	1.9	–1.5
Commodity Prices (US dollars)							
Oil[5]	–10.2	–32.1	12.0	9.0	8.2	9.9	5.7
Nonfuel (average based on world commodity import weights)	0.8	5.6	5.1	5.4	4.3	6.7	5.7
Consumer Prices							
Advanced Economies	1.4	0.8	1.6	0.5	0.5	0.3	0.1
Emerging Market and Developing Economies[6]	5.1	5.0	4.7	0.5	0.1	0.3	0.2
London Interbank Offered Rate (percent)							
On US Dollar Deposits (six month)	2.3	0.7	0.4	–0.2	–0.2	0.0	–0.2
On Euro Deposits (three month)	–0.4	–0.4	–0.5	0.0	–0.1	0.0	–0.1
On Japanese Yen Deposits (six month)	0.0	0.0	0.0	0.0	0.1	0.1	0.1

Source: IMF staff estimates.

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during July 24–August 21, 2020. 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, June 2020 WEO *Update*, and April 2020 WEO forecasts. Global and regional growth figures are based on new purchasing-power-parity weights derived from the recently released 2017 International Comparison Program survey (see Box) and are not comparable to the figures reported in the April 2020 WEO.

[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.

Table 1.1 ***(continued)***
(Percent change, unless noted otherwise)

	Year over Year				Q4 over Q4[7]			
			Projections				Projections	
	2018	2019	2020	2021	2018	2019	2020	2021
World Output	**3.5**	**2.8**	**–4.4**	**5.2**	**3.1**	**2.7**	**–2.6**	**3.7**
Advanced Economies	**2.2**	**1.7**	**–5.8**	**3.9**	**1.7**	**1.5**	**–4.9**	**3.8**
United States	3.0	2.2	–4.3	3.1	2.5	2.3	–4.1	3.2
Euro Area	1.8	1.3	–8.3	5.2	1.1	1.0	–6.6	4.8
Germany	1.3	0.6	–6.0	4.2	0.3	0.4	–5.2	4.6
France	1.8	1.5	–9.8	6.0	1.4	0.8	–6.7	4.0
Italy	0.8	0.3	–10.6	5.2	0.1	0.1	–8.0	3.4
Spain	2.4	2.0	–12.8	7.2	2.1	1.8	–10.8	6.6
Japan	0.3	0.7	–5.3	2.3	–0.3	–0.7	–2.3	0.7
United Kingdom	1.3	1.5	–9.8	5.9	1.4	1.1	–6.4	3.7
Canada	2.0	1.7	–7.1	5.2	1.8	1.5	–5.9	4.9
Other Advanced Economies[2]	2.7	1.7	–3.8	3.6	2.3	2.1	–4.2	5.0
Emerging Market and Developing Economies	**4.5**	**3.7**	**–3.3**	**6.0**	**4.3**	**3.8**	**–0.5**	**3.6**
Emerging and Developing Asia	6.3	5.5	–1.7	8.0	6.1	5.1	2.2	3.6
China	6.7	6.1	1.9	8.2	6.6	6.0	5.8	3.9
India[3]	6.1	4.2	–10.3	8.8	5.5	3.1	–4.0	1.4
ASEAN-5[4]	5.3	4.9	–3.4	6.2	5.3	4.6	–2.1	5.2
Emerging and Developing Europe	3.3	2.1	–4.6	3.9	. . .	. . .	. . .	. . .
Russia	2.5	1.3	–4.1	2.8	2.9	2.2	–4.5	2.8
Latin America and the Caribbean	1.1	0.0	–8.1	3.6	–0.2	–0.3	–6.5	2.1
Brazil	1.3	1.1	–5.8	2.8	0.8	1.6	–4.7	1.7
Mexico	2.2	–0.3	–9.0	3.5	1.2	–0.8	–7.0	2.7
Middle East and Central Asia	2.1	1.4	–4.1	3.0	. . .	. . .	. . .	. . .
Saudi Arabia	2.4	0.3	–5.4	3.1	4.3	–0.3	–5.2	6.6
Sub-Saharan Africa	3.3	3.2	–3.0	3.1	. . .	. . .	. . .	. . .
Nigeria	1.9	2.2	–4.3	1.7	. . .	. . .	. . .	. . .
South Africa	0.8	0.2	–8.0	3.0	0.2	–0.6	–5.5	1.0
Memorandum								
Low-Income Developing Countries	5.1	5.3	–1.2	4.9	. . .	. . .	. . .	. . .
Middle East and North Africa	1.2	0.8	–5.0	3.2	. . .	. . .	. . .	. . .
World Growth Based on Market Exchange Rates	3.1	2.4	–4.7	4.8	2.6	2.3	–3.0	3.7
World Trade Volume (goods and services)	**3.9**	**1.0**	**–10.4**	**8.3**	**. . .**	**. . .**	**. . .**	**. . .**
Imports								
Advanced Economies	3.6	1.7	–11.5	7.3	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	5.0	–0.6	–9.4	11.0	. . .	. . .	. . .	. . .
Exports								
Advanced Economies	3.5	1.3	–11.6	7.0	. . .	. . .	. . .	. . .
Emerging Market and Developing Economies	4.1	0.9	–7.7	9.5	. . .	. . .	. . .	. . .
Commodity Prices (US dollars)								
Oil[5]	29.4	–10.2	–32.1	12.0	9.5	–6.1	–26.1	6.2
Nonfuel (average based on world commodity import weights)	1.3	0.8	5.6	5.1	–2.3	4.9	10.3	–0.5
Consumer Prices								
Advanced Economies	2.0	1.4	0.8	1.6	1.9	1.4	0.8	1.5
Emerging Market and Developing Economies[6]	4.9	5.1	5.0	4.7	4.5	5.1	3.5	4.1
London Interbank Offered Rate (percent)								
On US Dollar Deposits (six month)	2.5	2.3	0.7	0.4	. . .	. . .	. . .	. . .
On Euro Deposits (three month)	–0.3	–0.4	–0.4	–0.5	. . .	. . .	. . .	. . .
On Japanese Yen Deposits (six month)	0.0	0.0	0.0	0.0	. . .	. . .	. . .	. . .

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

[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 $61.39 in 2019; the assumed price, based on futures markets, is $41.69 in 2020 and $46.70 in 2021.

[6]Excludes Venezuela. See country-specific note for Venezuela in the "Country Notes" section of the Statistical Appendix.

[7]For World Output, the quarterly estimates and projections account for approximately 90 percent of annual world output at purchasing-power-parity weights. For Emerging Market and Developing Economies, the quarterly estimates and projections account for approximately 80 percent of annual emerging market and developing economies' output at purchasing-power-parity weights.

Table 1.2. Overview of the *World Economic Outlook* Projections at Market Prices
(Percent change)

		Projections		Difference from June 2020 WEO *Update*[1]		Difference from April 2020 WEO[1]	
	2019	2020	2021	2020	2021	2020	2021
World Output	**2.4**	**–4.7**	**4.8**	**1.4**	**–0.5**	**–0.5**	**–0.6**
Advanced Economies	**1.7**	**–5.8**	**3.8**	**2.3**	**–1.0**	**0.4**	**–0.7**
Emerging Market and Developing Economies	**3.6**	**–3.0**	**6.2**	**0.1**	**0.1**	**–1.7**	**–0.6**
Emerging and Developing Asia	5.7	–0.7	8.0	–0.4	0.4	–1.7	–0.7
Emerging and Developing Europe	2.1	–4.5	3.8	1.3	–0.5	0.7	–0.3
Latin America and the Caribbean	–0.5	–8.1	3.6	1.3	–0.1	–2.8	0.2
Middle East and Central Asia	1.0	–5.7	3.2	0.3	–0.4	–2.1	–1.1
Sub-Saharan Africa	2.8	–3.5	3.1	0.2	–0.3	–1.5	–0.9
Memorandum							
Low-Income Developing Countries	5.1	–1.4	4.7	–0.1	–0.3	–1.6	–0.7

Source: IMF staff estimates.

Note: The aggregate growth rates are calculated as a weighted average, where a moving average of nominal GDP in US dollars for the preceding three years is used as the weight. WEO = *World Economic Outlook*.

[1]Difference based on rounded figures for the current, June 2020 WEO *Update*, and April 2020 WEO forecasts.

the euro area in 2020, reflecting a sharper downturn than in the United States in the first half of the year. The growth bounce-back of 5.2 percent projected for 2021 is accordingly stronger from a lower base. Asian advanced economies are projected to have somewhat more moderate downturns than those of Europe, in light of the more contained pandemic, also reflected in smaller GDP declines during the first half of 2020.

Among *emerging market and developing economies*, growth is forecast at –3.3 percent in 2020, 0.2 percentage point weaker than in the June 2020 WEO *Update*, strengthening to 6 percent in 2021. Prospects for China are much stronger than for most other countries in this group, with the economy projected to grow by about 10 percent over 2020–21 (1.9 percent this year and 8.2 percent next year). Activity normalized faster than expected after most of the country reopened in early April, and second quarter GDP registered a positive surprise on the back of strong policy support and resilient exports.

For many *emerging market and developing economies excluding China*, prospects continue to remain precarious. This reflects a combination of factors: the continuing spread of the pandemic and overwhelmed health care systems; the greater importance of severely affected sectors, such as tourism; and the greater dependence on external finance, including remittances. All emerging market and developing economy regions are expected to contract this year, including notably emerging Asia, where large economies, such as India and Indonesia, continue to try to bring the pandemic under control. Revisions to the forecast are particularly large for India, where GDP contracted much more severely than expected in the second quarter. As a result, the economy is projected to contract by 10.3 percent in 2020, before rebounding by 8.8 percent in 2021. Regional differences remain stark, with many countries in Latin America severely affected by the pandemic facing very deep downturns, and large output declines expected for many countries in the Middle East and Central Asia region and oil-exporting countries in sub-Saharan Africa affected by low oil prices, civil strife, or economic crises. Growth for emerging market and developing economies excluding China is projected at –5.7 percent for 2020 and 5 percent for 2021. The projected rebound in 2021 is not sufficient to regain the 2019 level of activity by next year. Growth among low-income developing countries is projected at –1.2 percent in 2020, strengthening to 4.9 percent in 2021. Higher population growth and low starting levels of income imply that even this more modest contraction compared with most emerging market economies will take a very heavy toll on living standards, especially for the poor (Box 1.2).

Table 1.2 provides alternative projections for global and key group aggregate growth rates using GDP at market exchange rates as weights.[3] The market exchange rate weights allocate significantly higher global GDP shares to slower-growing advanced economies than the purchasing-power-parity weights used in Table 1.1. Because of the difference in weights the global growth projection (–4.7 percent for 2020 and 4.8 percent for 2021) is lower than in Table 1.1.

[3]Specifically, the projections use a three-year trailing moving average of nominal US dollar GDP as weights.

Unemployment. The growth projections imply wide negative output gaps this year and in 2021 as well as elevated unemployment rates across both advanced and emerging market economies (Annex Tables 1.1.1 to 1.1.5). Including those in reduced-hours work programs and those counted in involuntary part-time employment, the share of workers underemployed in some advanced economies is significantly higher than the fraction of headline unemployed. Labor market data are less comprehensive for emerging market economies. Nonetheless, based on surveys and available official estimates, unemployment rates in several emerging market economies are projected to increase significantly this year.

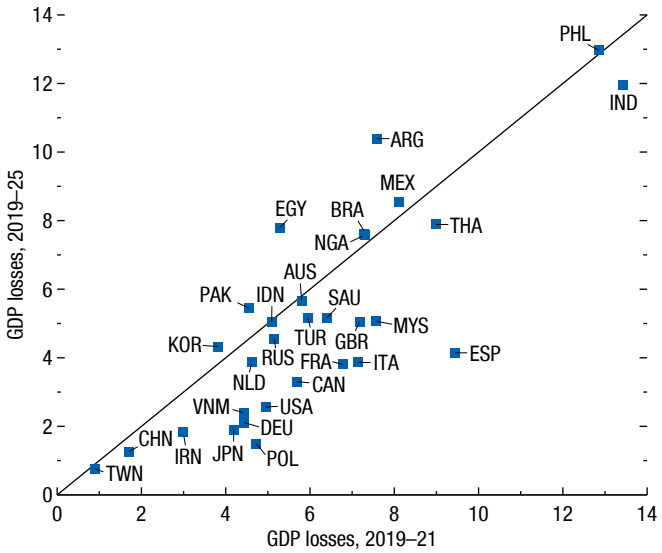
Medium-Term Growth Reflects Damage to Supply Potential

After the rebound in 2021, the baseline forecast for the global economy envisages growth to slow to about 3.5 percent into the medium term. This implies that both advanced and emerging market and developing economies will only modestly progress toward the 2020–25 path of economic activity projected before the COVID-19 pandemic (Figure 1.12), pointing to a severe setback to the projected pace of improvement in average living standards across all country groups (Figure 1.13).

Medium-term projections incorporate the expected impact of the COVID-19 shock on supply potential. As noted, the projections rely on economies adapting and operating in ways compatible with social distancing for the initial forecast years and being affected by scarring (including through bankruptcies, lower labor force participation, and obstacles to resource reallocation). This may entail large structural change, including redeploying resources away from sectors where activity will be constrained by distancing, workplace changes to raise safety standards, and the adoption of new technologies that support remote working. As firms make the needed adjustments to modes of production and distribution while consumers adapt to new modes of consumption (such as increasingly shifting to

Figure 1.12. GDP Losses: 2019–21 versus 2019–25
(Percent difference between January 2020 WEO Update *and October 2020 WEO projections)*

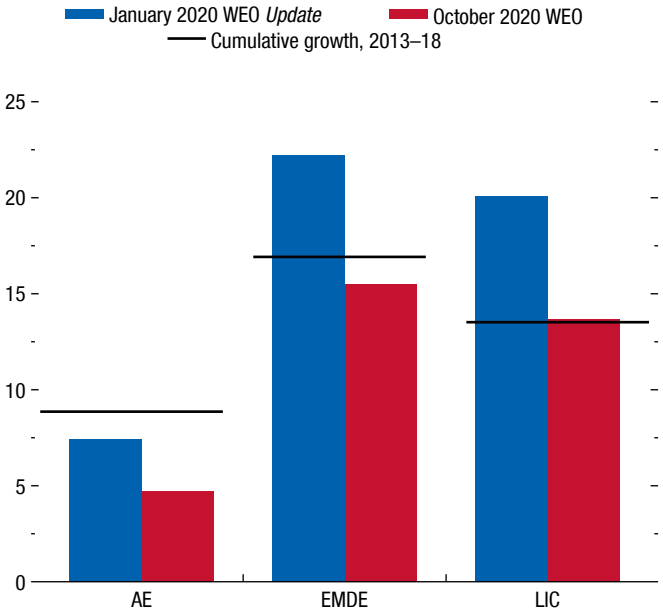
Over the medium term, advanced and emerging market and developing economies will only modestly progress toward the 2020–25 path of economic activity projected before the COVID-19 pandemic.



Source: IMF staff estimates.
Note: WEO = *World Economic Outlook*. Data labels use International Organization for Standardization (ISO) country codes.

Figure 1.13. Per Capita GDP: Cumulative Growth, 2019–25
(Percent)

Subdued medium-term growth prospects imply a severe setback to the projected pace of improvement in average living standards across all country groups.



Source: IMF staff estimates.
Note: AE = advanced economy; EMDE = emerging market and developing economy; LIC = low-income country; WEO = *World Economic Outlook*.

online purchases), the changes are expected to have persistent effects on potential output across economies.

Among the 10 largest advanced economies, potential GDP in the medium term is expected, on average, to remain 3.5 percent below what had been projected in the January 2020 WEO (pre-pandemic) forecast. Among the 10 largest emerging markets, the decline is even larger, at 5.5 percent, on average.

In the *advanced economy* group, growth is expected to slow to 1.7 percent over the medium term. Beyond the impact of the pandemic on potential growth, the macroeconomic effects of demographic change (aging and slower population growth) weigh on the medium-term forecast for the group.

Among *emerging market and developing economies*, growth is projected to decline to 4.7 percent by 2025, well below the 5.6 percent average of 2000–19. Key features shaping the medium-term outlook for the group include the structural slowdown in China that preceded the pandemic and is expected to continue following the strong cyclical rebound in 2021; a subdued path for commodity prices; weak prospects for external demand related to the expected moderation in advanced economy growth; and, for tourism-dependent economies, persistently lower cross-border travel.

Challenges to Debt Sustainability

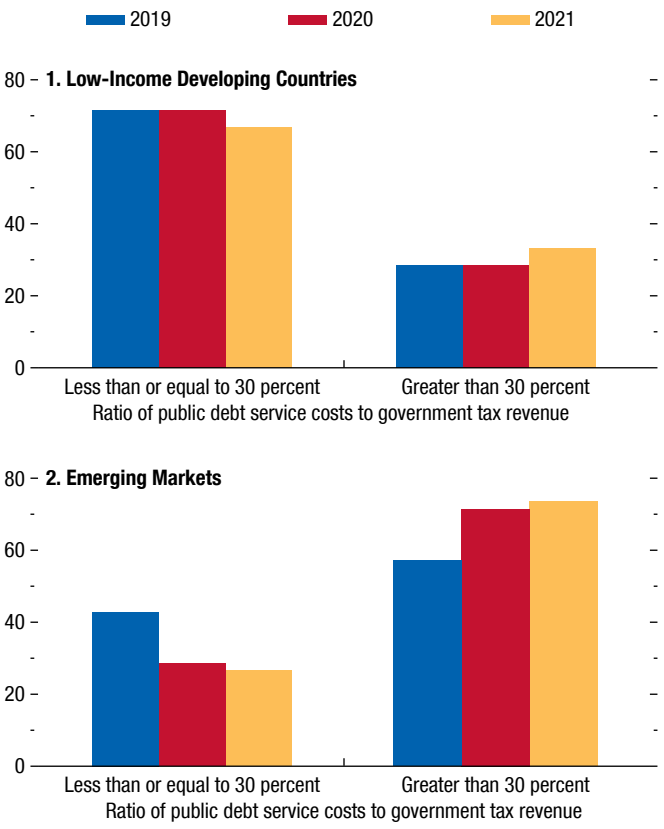
The subdued outlook for medium-term growth comes with a significant projected increase in the stock of sovereign debt—which was high to begin with. Downward revisions to potential output also imply a smaller tax base over the medium term than previously envisaged, compounding difficulties in servicing debt obligations.

As discussed in the October 2020 *Fiscal Monitor*, sovereign debt to GDP in advanced economies is projected to rise by 20 percentage points to about 125 percent of GDP by the end of 2021. Over the same period, sovereign debt to GDP in emerging market and developing economies is projected to rise by more than 10 percentage points to about 65 percent of GDP.

Although low interest rates are expected to contain debt service, this is a mitigating factor mostly for advanced economies with a large fraction of negative-yielding sovereign bonds. The ratio of sovereign debt service to tax revenue is anticipated to increase for several emerging markets and low-income countries (Figure 1.14).

Figure 1.14. Ratio of Public Debt Service Costs to Government Tax Revenue
(Share of countries in group, percent)

The ratio of sovereign debt service to tax revenue is anticipated to increase for several emerging markets and developing economies.



Source: IMF staff estimates.
Note: Shares by country groups are calculated based on countries for which data are available.

The high fraction of tax revenue absorbed by debt service will necessarily mean that there is less revenue left over for critical areas, including social spending needs. These needs will be elevated after the crisis period to address rising poverty, tackle growing inequality, and correct setbacks to human capital accumulation.

Poverty, Inequality, and Setbacks to Human Capital Accumulation

Poverty. The pandemic will reverse the progress made since the 1990s in reducing global poverty. People who rely on daily wage labor and are outside the formal safety net faced sudden income losses when mobility restrictions were imposed. Among them, migrant

workers who live far from home had even less recourse to traditional support networks. As a consequence, close to 90 million people could fall below the $1.90 a day income threshold of extreme deprivation this year (Box 1.2, October 2020 *Fiscal Monitor*, and WB 2020a).

Inequality. As discussed in Chapter 2, the pandemic is having particularly adverse effects on economically more vulnerable people, including younger workers and women. The burden of the crisis has fallen unevenly across sectors. Differentiating jobs based on attributes that make them amenable to telework, workers most affected by the pandemic are employed in accommodation and food services, transportation, retail, and wholesale (Brussevich, Dabla-Norris, and Khalid 2020). Moreover, younger workers, those in less secure work arrangements, and those employed in small and medium enterprises appear more vulnerable to layoffs. In general, low-wage earners are at an appreciably higher risk of losing their jobs than those in upper quintiles of the wage distribution (see, for example, Shibata 2020 on the United States). Similar outcomes are seen in emerging market and developing economies, where informally employed workers are more likely to become unemployed than those with formal contracts (see, for example, Jain and others 2020 on South Africa).

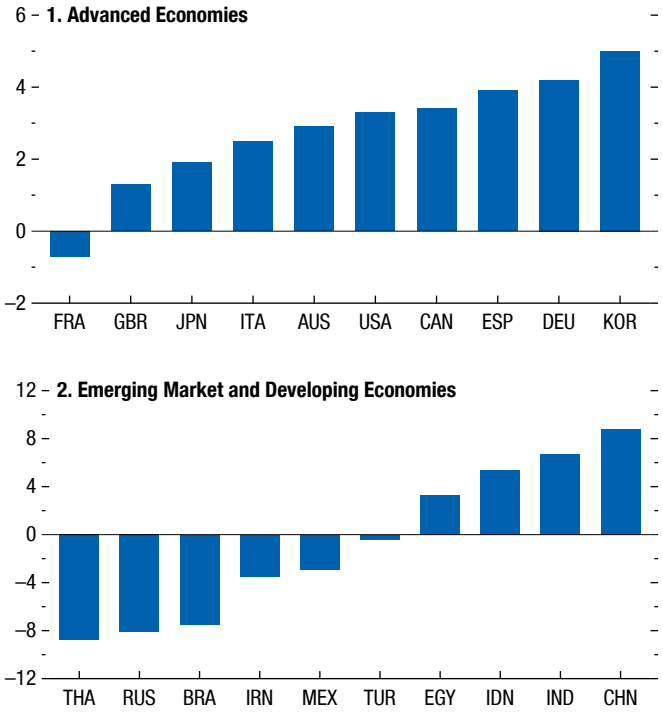
Such developments will exacerbate preexisting trends. Entering the crisis, income inequality had risen significantly compared with the early 1990s in many advanced economies and among some fast-growing emerging market and developing economies (Figure 1.15; also see Annex 1.1 of the October 2020 *Fiscal Monitor*). These developments reflect a combination of factors, including skill-biased technological change that favored those with high educational attainment, the decline of unions, the increase in firms' monopsony power in the labor market because of rising market concentration and the associated decrease in the bargaining power of employees, and regressive tax policy changes that have resulted in lower marginal taxes on the highest earners as well as lower corporate taxes over the past several years.

Human Capital Accumulation. An additional aspect, with bearing on the current labor market outcomes of parents and prospects for their children, follows from the extensive school closures during the pandemic. UNESCO (2020) estimates that more than 1.6 billion learners worldwide have been affected by school and university closures. Gaps in childcare limit parents' ability to work, particularly that of mothers (see Chapter 2). For children, schooling interruptions reduce learning opportunities. This is particularly true for underprivileged students, whose parents may not be as well placed as affluent parents to provide supplementary instruction for their children. Evidence suggests that the loss of learning increases with the duration of interruption (Quinn and Polikoff 2017). Online and distance learning can act as a temporary bridge, but are not an effective substitute (Baytiyeh 2018).

School closures exacerbate fundamental divisions in the access to nutrition and safe environments for children. Because many schools provide free or subsidized meals to children from low-income households, closures may result in greater food insecurity and poorer

Figure 1.15. Change in Income Inequality since 1990
(Change in Gini coefficient for disposable income[1])

Entering the COVID-19 pandemic, income inequality had risen significantly compared with the early 1990s in many advanced economies and among some fast-growing emerging market and developing economies.



Sources: IMF Fiscal Affairs Department Gini database; Standardized World Income Inequality database; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes.
[1]Change is calculated as latest available minus Gini coefficient in 1990.

nutrition for children from those homes (Anderson, Gallagher, and Ramirez Ritchie 2017; Ralston and others 2017). Children home from school are also more likely to be exposed to violence and exploitation. In some countries, past evidence suggests school closures are associated with earlier marriages, children forced into militias, sexual exploitation, teen pregnancies, and child labor (Korkoyah and Wreh 2015; UNDP 2015; UNESCO 2020).

The closures are likely to have long-lasting consequences for future social and economic outcomes absent actions to try to regain the human capital accumulation lost. Lower lifetime schooling is associated with lower lifetime income (Card 1999). Interrupted schooling is also associated with lower earnings trajectories (Light 1995; Holmlund, Liu, and Skans 2008).

In short, the subdued medium-term growth outlook for the global economy comes with the prospect of elevated debt, more poverty, higher inequality, and severe setbacks to human capital accumulation. Policymakers will also have to confront additional complexities related to the outlook for inflation and trade, the subject of the next two sections.

Inflation Is Expected to Remain Low

As with the growth outlook, considerable uncertainty surrounds the inflation projections for the projection horizon. Competing forces will shape price developments in the years ahead (see Ebrahimy, Igan, and Martinez Peria 2020).

- Price pressures could increase, for example, due to the release of pent-up demand as consumers increase spending on items that they had been forced to delay consuming because of lockdowns and restrictions on movement. They could also increase due to higher production costs from persistent supply disruptions. The credibility of monetary policy frameworks can also affect price developments. Credibility can suffer where central banks are regarded as conducting monetary policy to keep government borrowing costs low rather than to ensure price stability ("fiscal dominance"). In those contexts, inflation expectations can increase very quickly once governments begin running large fiscal deficits.
- Counterbalancing such forces are those that will weigh on demand. These include a persistent increase in consumers' precautionary saving prompted by higher perceived risk of joblessness and falling sick; transfers of purchasing power to lenders with lower propensities to spend as borrowers service the high debt incurred during the pandemic; and concerns about the limits of monetary policy's ability to stimulate demand (particularly in advanced economies), which cause inflation expectations to slide and lead to disinflation.

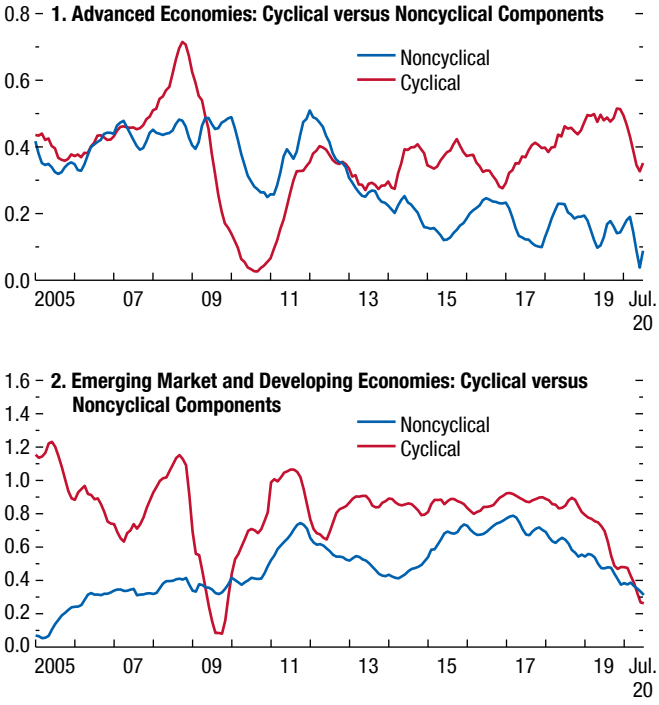
A sectoral decomposition of inflation in the period leading up to the pandemic and in the first six months of the pandemic offers clues about what to expect. Across a sample of advanced economies and large emerging market economies, the decline in inflation appears broad-based (Freitag and Lian, forthcoming). It reflects weak price pressures in sectors where price developments have historically responded to aggregate demand (furnishing, housing excluding energy, recreation, restaurants, and hotels) as well as in "noncyclical" sectors, where price movements typically are less sensitive to demand fluctuations (clothing and footwear, communications, education, health, transportation services, and miscellaneous goods and services), as shown in Figure 1.16. With aggregate demand expected to be relatively weak and economies projected to operate with considerable slack into 2022, price pressures in the cyclically sensitive sectors are expected to stay muted. Moreover, inflation in the noncyclical group has been on a long-standing downward trend. The trend is expected to continue, given that these sectors are unlikely to experience supply constraints or rising unit labor costs on account of slowing innovation.

Market participants generally expect subdued inflation in advanced economies (Figure 1.17). Among emerging market economies, inflation expectations remain relatively low compared with historical averages. Even as some emerging market central banks have embarked on asset purchases, these actions have so far not unanchored inflation expectations. Possible reasons include more credible monetary policy frameworks and communications explaining that the actions are also intended to support market functioning, consistent with price stability mandates.

In line with the subdued outlook for activity, inflation is expected to remain relatively low over the forecast horizon. Inflation in the advanced economy group is projected at 0.8 percent in 2020, rising to 1.6 percent in 2021 as the recovery gains hold, and broadly stabilizing thereafter at 1.9 percent. In the emerging market and developing economy group,

Figure 1.16. Contribution to Headline Inflation
(Percentage points)

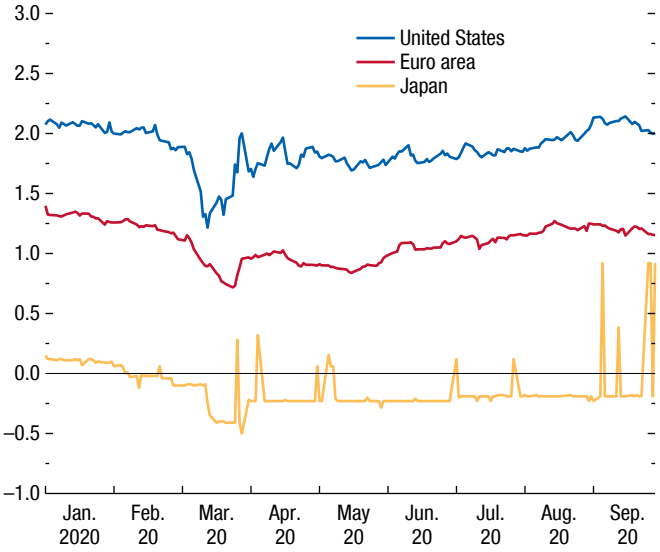
The decline in inflation appears broad based, encompassing sectors where price developments have historically responded to aggregate demand as well as in those in which price movements typically are less sensitive to demand fluctuations.



Sources: Eurostat; Haver Analytics; Organisation for Economic Co-operation and Development; and IMF staff calculations.
Note: The figure plots the time fixed effects of regressions in which three-month trailing averages of contributions to headline inflation are regressed on country and time fixed effects, with the weights being the GDP in purchasing-power-parity terms. The contribution of a component is defined as its year-on-year price change multiplied by its weight in the headline consumer price index basket. Country fixed effects account for different timing of countries entering the sample, and the time fixed effects are normalized to equal the contribution in January 2005. Cyclical components include furnishing, household equipment and routine household maintenance, housing (excluding utilities whenever the data permit), recreation and culture, and restaurants and hotels. Noncyclical components include clothing and footwear, communication, education, health, and miscellaneous goods and services. The definition of cyclical components follows the results of Stock and Watson (2019), except that furnishing, household equipment, and routine household maintenance are not included in their construction of cyclically sensitive inflation. Food and energy components are excluded to better reveal underlying trends. Transportation services are a noncyclical component in Stock and Watson (2019) and excluded here, as it was volatile in 2020 for advanced economies, and cannot be constructed without being combined with the fuel component for many emerging market and developing economies. The post–global financial crisis downward trend of noncyclical components remains if transportation services are included. Advanced economies comprise Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovenia, South Korea, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Emerging market and developing economies comprise Algeria, Chile, China, Colombia, Egypt, Hungary, India, Kazakhstan, Malaysia, Morocco, Myanmar, Nigeria, Pakistan, Peru, the Philippines, Poland, Qatar, Romania, Russia, Serbia, Slovak Republic, South Africa, Thailand, Ukraine, the United Arab Emirates, and Vietnam.

Figure 1.17. Five-Year, Five-Year Inflation Swaps
(Percent; market-implied average inflation rate expected over the five-year period starting five years from date shown)

Inflation in advanced economies is generally expected to remain subdued.



Sources: Bloomberg Finance L.P.; and IMF staff calculations.

inflation is projected at 5 percent this year, declining to 4.7 percent next year, and moderating thereafter to 4 percent over the medium term, below the historical average for the group.

Subdued Trade Flows, Smaller Deficits and Surpluses

Global trade growth is projected to weaken significantly. Global trade is expected to contract by over 10 percent this year—a pace similar to during the global financial crisis in 2009, despite the contraction in activity being much more pronounced this year. The current recession reflects a particularly sharp contraction in contact-intensive sectors with much smaller trade intensity than manufacturing, which generally contracts sharply in recessions as demand for capital goods and consumer durables plummets. As noted in the 2020 *External Sector Report*, the expected decline in trade volumes largely reflects weak final demand from consumers and firms in the synchronized global downturn. Trade restrictions (for example on medical supplies) and supply chain disruptions are expected to play limited roles in accounting for the collapse.

Consistent with the projected recovery in global activity, trade volumes are expected to grow by about 8 percent in 2021 and by slightly more than 4 percent, on average, in subsequent years. Subdued trade volumes also reflect, in part, possible shifts in supply chains as firms reshore production to reduce perceived vulnerabilities from reliance on foreign producers. A reflection of this anticipated development is that foreign direct investment flows as a share of global GDP are expected to remain well below their levels of the pre-pandemic decade (Figure 1.18, panel 1).

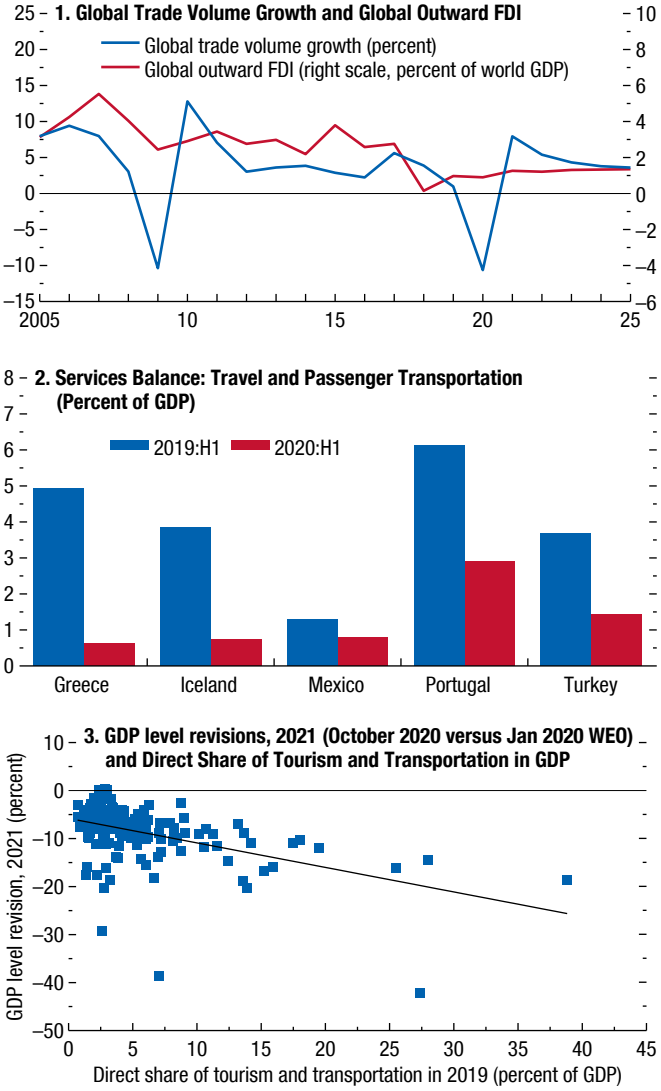
While all countries are expected to suffer large drops in exports and imports, the incidence is uneven. The trade outlook is particularly bleak for tourism-dependent economies, where restrictions on international travel, together with consumers' fear of contagion, are likely to weigh heavily on tourism activity even in situations where the pandemic appears contained for now (economies in the Caribbean, for example). Balance of payments data for the first half of the year show a collapse in net revenues from tourism and travel for countries in which these sectors play an important role (for instance, Greece, Iceland, Portugal, and Turkey; Figure 1.18, panel 2). And as Figure 1.18, panel 3 shows, countries where tourism and travel account for a larger share of GDP are projected to suffer larger declines in activity during 2020–21 compared with pre-COVID-19 forecasts. In addition, oil exporters have suffered a severe terms-of-trade shock with the decline in oil prices and face a more difficult external outlook.

Remittances. Remittance flows contracted sharply during the early lockdown period but have shown signs of recovery. Nonetheless, the risk of a decline in payments and transfers from migrant workers back to their home countries is very significant, particularly for such countries as Bangladesh, Egypt, Guatemala, Pakistan, the Philippines, and those in sub-Saharan Africa more broadly.

Global current account deficits and surpluses are projected to shrink in 2020 to the lowest level in the past two decades and to remain broadly stable thereafter (Figure 1.19). Among creditor countries, surpluses are projected to decline in east Asia and to a lesser extent in Germany and the Netherlands, reflecting the weaker external environment, while the surplus in oil exporters is projected to turn into a modest deficit. These offset a modest increase in the projected surplus for China. Among debtor countries, smaller deficits are projected for Latin America, despite negative terms-of-trade shocks, mainly reflecting pronounced weakness in domestic demand, as well as for India and the United Kingdom on the back of lower oil prices and weak domestic demand. Creditor and debtor positions as a share of GDP are instead projected

Figure 1.18. Global Trade Volume Growth, Global Outward Foreign Direct Investment, and Travel-Related Trade Services

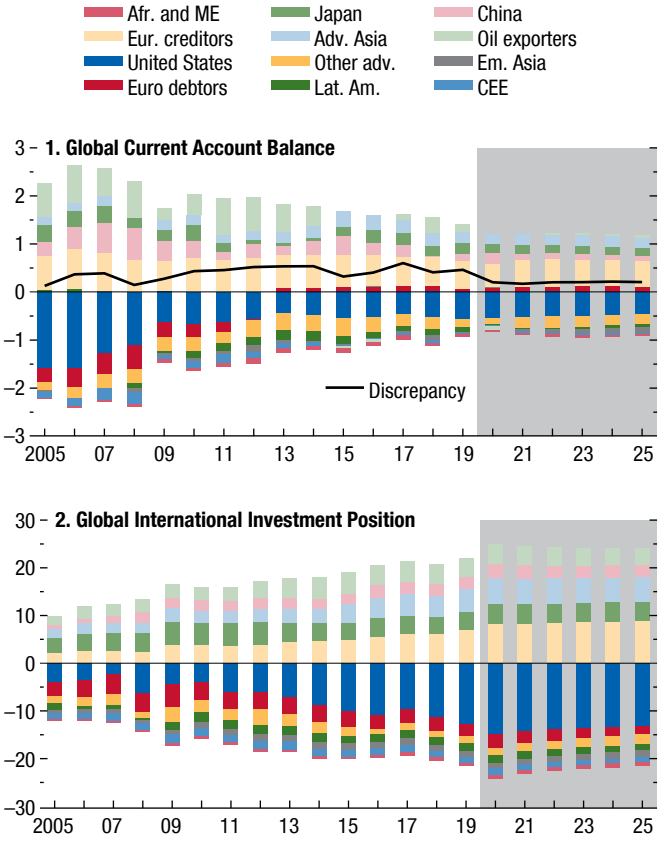
The contraction in global trade in 2020 reflects a sharp collapse in tourism and travel. Countries where these sectors account for a larger share of GDP are projected to suffer bigger declines in activity during 2020–21 compared with pre-pandemic forecasts.



Sources: World Travel and Tourism Council; and IMF staff estimates.
Note: FDI = foreign direct investment; WEO = *World Economic Outlook*.

Figure 1.19. Current Account and International Investment Positions
(Percent of world GDP)

Global current account deficits and surpluses are projected to shrink in 2020 to the lowest level in the past two decades.



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); Euro debtors = euro area 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).

to widen in 2020: the increase in the ratios follows from the drop in the denominator, reflecting the sharp decline in activity. The ratios are then projected to gradually shrink over the projection horizon as GDP recovers and current account imbalances remain subdued.

Significant Risks of More Severe Growth Outcomes

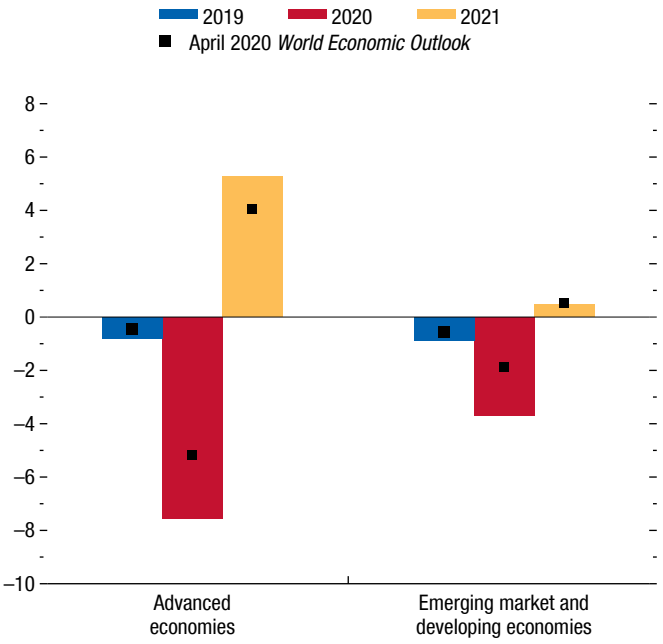
Fundamental uncertainty regarding the evolution of the pandemic makes it difficult to provide a quantitative assessment of the balance of risks around the baseline forecast described above.

On the *upside:*

- *The recession could turn out to be less severe* than projected if economic normalization proceeds faster than currently expected in areas that have reopened, without rekindling infections.
- *Extensions of fiscal countermeasures.* The current forecast factors in only the measures implemented and announced so far. As such, the overall fiscal policy stance in advanced and emerging market economies is expected to turn significantly less accommodative in 2021, in line with the projected handoff to private-activity-led growth (Figure 1.20). Extensions of fiscal countermeasures would lift global growth above the projected baseline in 2021.
- *Faster productivity growth* could be engendered by changes in production, distribution, and payment

Figure 1.20. Fiscal Stance, 2019–21
(Change in structural primary fiscal balance, percent of potential GDP)

Extensions of fiscal countermeasures represent an upside risk to global growth.



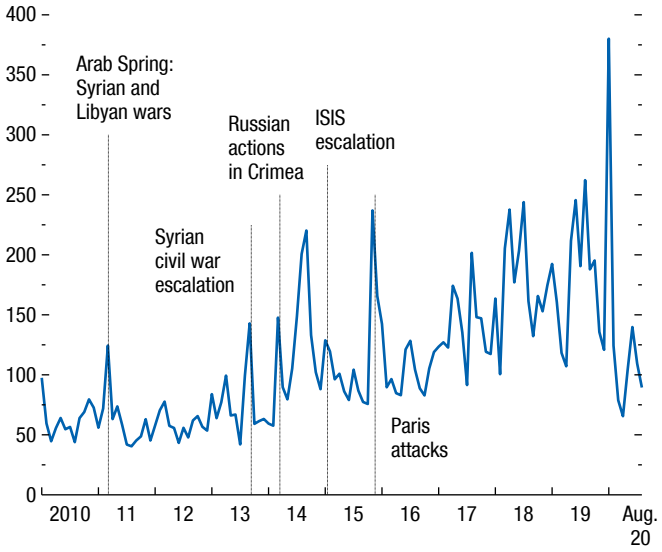
Source: IMF staff estimates.

systems—from new techniques in medicine to new data-enabled services and remote working across broader sectors of the economy.
- *Advances in therapies* may allow health care systems to better manage infection loads, while changes in the workplace and by consumers to reduce transmission may allow activity to return more quickly to pre-pandemic levels without triggering repeated waves of infection.
- *Production of a safe, effective vaccine* would prevail over all other upside risk factors. If produced at the needed scale and distributed worldwide at affordable prices, such a vaccine would lift sentiment and yield better growth outcomes than in the baseline, including by allowing for a fuller recovery in contact-intensive sectors and travel. Some of these aspects are featured in Scenario Box 1, which presents growth projections under alternative scenarios.

Downside risks, however, remain significant. They include the following:
- *Outbreaks* could recur in places. If the virus resurges, and progress on treatments and vaccines is slower than anticipated or countries' access to them remains unequal, economic activity could be lower than expected, with renewed social distancing and tighter lockdowns. Cross-border spillovers from weaker external demand could further magnify the impact of country- or region-specific shocks on global growth.
- *Premature withdrawal of policy support*, or poor targeting of measures because of design and implementation challenges, could lead to the dissolution of otherwise viable and productive economic relationships, exacerbating misallocation.
- *Financial conditions may again tighten*, as in March, exposing vulnerabilities. A sudden stop in new lending (or failure to roll over existing debt) would tip some economies into debt crises and slow activity further.
- *Liquidity shortfalls and insolvencies.* Deep recessions invariably entail widespread liquidity shortfalls as firms suffer immediate revenue losses but still have to meet payroll expenses, cover fixed costs, and fulfill debt service obligations. Prolonged liquidity shortfalls can readily translate into bankruptcies and firm closures. This time around, there have been a few prominent bankruptcies, for example in retail and rental car sectors, and the rate of corporate bond defaults more broadly is at its highest since the global financial crisis (June 2020 GFSR *Update*). However, the aggressive and swift policy countermeasures have so far likely prevented even more widespread bankruptcies. But considering the severity of the recession and the possible withdrawal of some of the emergency support in some countries, the risk of a wider cross-section of firms experiencing deep liquidity shortfalls and bankruptcies is tangible (Box 1.3). Such events would lead to large job and income losses, further weakening demand. At the same time, they would deplete bank capital buffers and constrain credit supply, compounding the downturn.
- *Intensifying social unrest.* Instances of social unrest increased globally in 2019 before declining during the early part of the pandemic (Box 1.4). While ultimate causes vary across countries, in many cases, these include declining trust in established institutions and lack of representation in governance structures, as well as a perceived disconnect between leaders' priorities and the problems faced by the public. In June, social unrest increased in the United States and quickly spread worldwide in protests against institutional racism and racial inequality. More widespread or longer-lived protests could hurt sentiment and further weigh on activity. Intensifying social unrest may also complicate the political economy of reform efforts, to the detriment of medium-term growth or the sustainability of public finances.
- *Geopolitical tensions.* While seeming to de-escalate during the pandemic (Figure 1.21), geopolitical tensions could again flare up. Moreover, frayed ties among the OPEC+ coalition of oil producers (Organization of the Petroleum Exporting Countries, including Russia and other non-OPEC oil exporters) pose risks for global oil supply. A renewed plunge in prices as seen in March would severely hurt activity in oil exporters and lead to weaker growth than projected.
- *Trade policy uncertainty and technology frictions.* Despite the recent reaffirmation of the Phase One trade deal between the United States and China signed at the start of the year, tensions between the world's two largest economies remain elevated on numerous fronts. Moreover, the United Kingdom's transitional arrangement with the European Union expires on December 31, 2020. If the two sides fail to agree and ratify a trade deal before then, trade barriers between them are set to rise significantly,

Figure 1.21. Geopolitical Risk Index
(Index)

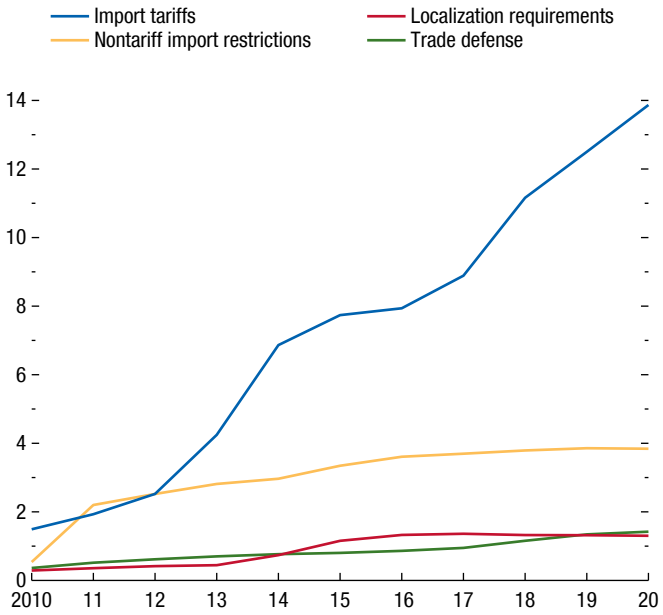
Geopolitical tensions seemed to de-escalate during the pandemic but could again flare up.



Source: Caldara and Iacoviello 2018.
Note: 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 over the 2000–09 decade. ISIS = Islamic State.

Figure 1.22. Share of World Imports Affected by Countries' Own Import Restrictions
(Percent)

The bulk of the distortionary tariff and nontariff barriers instituted over the past two years remain in place.



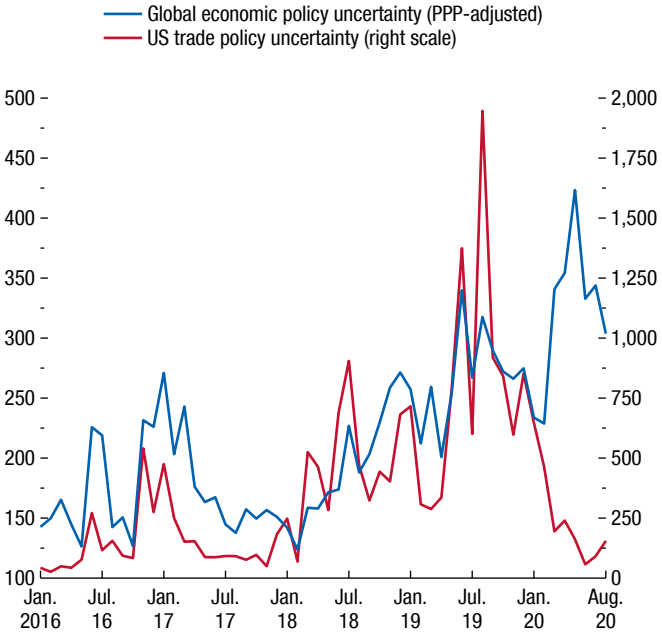
Source: Global Trade Alert.

which would increase business costs and could disrupt long-standing cross-border production arrangements. In addition, the bulk of the distortionary tariff and nontariff barriers instituted over the past two years remain in place (Figure 1.22). The World Trade Organization Appellate Body has ceased functioning because of the impasse over appointments, casting doubt over the enforceability of World Trade Organization legal commitments. Moreover, with the spread of trade disputes to the technology domain, global supply chains face additional threats from a bifurcation of technology standards and platforms. On the positive side, the trade agreement between Canada, Mexico, and the United States came into force on July 1, helping to lower near-term trade policy uncertainty (Figure 1.23). But lingering frictions (for example, on aluminum, rules of origin in the auto sector, and dairy trade) could hamper implementation. Trade policy uncertainty could increase again in these contexts or in discussions involving other trading partners, weighing on global growth.

- *Weather-related natural disasters.* The increased frequency and intensity of weather-related natural disasters, such as tropical storms, floods, heat waves, droughts, and wildfires has inflicted a devastating humanitarian toll and widespread livelihood loss on many regions in recent years (for example, Australia, the Caribbean, eastern and southern Africa, south Asia). Climate change, a principal driver of more frequent and intense weather-related disasters, already has had visible impacts—and not just in regions where the disasters strike. The disasters could also contribute to cross-border migration and financial stress (for example, in the insurance sector) or add to disease burdens. Moreover, they can have persistent effects long after the event itself (as seen, for example, in parts of eastern Africa, where heavy rainfall in late 2019 and earlier this year have contributed to an extreme locust infestation—the worst in decades—that has imperiled food supplies in the region).

Figure 1.23. Policy Uncertainty and Trade Tensions
(Index)

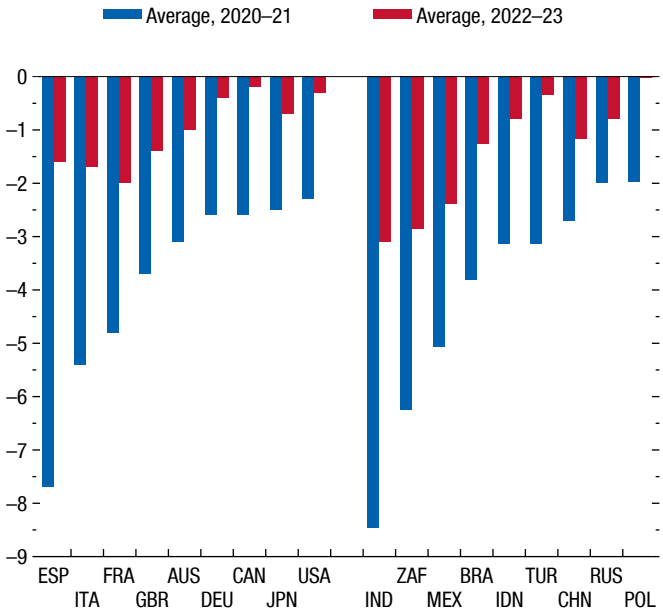
Trade policy uncertainty has declined recently, but trade tensions remain elevated.



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 GEPU from 1997 to 2015 = 100; mean US trade policy uncertainty index from 1985 to 2010 = 100. PPP = purchasing power parity.

Figure 1.24. Output Gap Projections, 2020–23
(Percent)

Economies are expected to operate well below capacity over 2020 and 2021.



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

Near-Term Policy Priorities: Ensure Adequate Resources for Health Care, Limit Economic Damage

The global economy is in the grip of the most devastating public health crisis and its worst recession in decades. All major economies are expected to operate well below capacity over 2020 and 2021 (Figure 1.24). Moreover, downside risks are significant. The immediate dual priority for policy is to ensure adequate resources for health care systems and to limit the economic damage.

Difficult Trade-Offs: Near-Term Imperatives, Medium-Term Challenges

Besides combating the deep near-term recession, policymakers will have to address complex challenges to place economies on a path of higher productivity growth while ensuring that gains are shared evenly and debt remains sustainable. Many countries already face very difficult trade-offs between implementing measures to support near-term growth and avoiding a further buildup of debt that will be difficult to service down the road, considering the crisis's hit to potential output. Policies to support the economy in the near term should therefore be designed with an eye to furthering these broader objectives of guiding economies to paths of stronger, equitable, and resilient growth.

Tax and spending measures should privilege initiatives that can help lift potential output, ensure participatory growth that benefits all, and protect the vulnerable. The additional debt incurred to finance such endeavors is more likely to pay for itself down the road by increasing the overall size of the economy and future tax base than if the borrowing were done to finance ill-targeted subsidies or wasteful current spending. Investments in health, education, and high-return infrastructure projects that also help move the economy to lower carbon dependence can further those objectives. Research spending can facilitate innovation

and technology adoption, the principal drivers of long-term productivity growth. Moreover, safeguarding critical social spending can ensure the most vulnerable are protected while also supporting near-term activity, since the outlays will go to groups with a higher propensity to spend their disposable income than more affluent individuals. In all instances, adhering to the highest standards of debt transparency will be essential to avoid future rollover difficulties and higher sovereign risk premiums that raise borrowing costs across the economy.

Enhancing Multilateral Cooperation

The global nature of the shock, its cross-border spillovers, and the resulting shared challenges point to a need for significant multilateral efforts toward fighting the health and economic crisis.

Multilateral cooperation to support health care systems. National efforts on health will have to be supplemented with extensive multilateral cooperation. A key priority is to fund advance purchase commitments of vaccines undergoing trials to encourage rapid scaling up of the manufacture and distribution of affordable doses worldwide (examples of such coordinated, multilateral initiatives include the Coalition for Epidemic Preparedness Innovations and Gavi, the Vaccine Alliance). The uncertainty and risk of failure associated with the search for effective and safe vaccines make global funding particularly important. A related priority is to support countries with limited health care capacity. Their ability to avoid a catastrophic human toll depends critically on the international community stepping up medical assistance to them. Countries should also continue to remove trade restrictions on essential medical supplies and share information on the pandemic as well as on the search for vaccines and therapies.

Financial support for constrained countries. Beyond assistance with medical equipment and know-how, several emerging market and developing economies—low-income countries in particular—require support from the international community through debt relief, grants, and concessional financing. Building on the Group of Twenty initiative for a temporary standstill on official debt service payments by low-income countries, private creditors should extend similar treatment as well so that those countries can conserve international liquidity and direct resources to priority health care spending and relief measures. Where debt restructuring is needed, all creditors and low-income country and emerging market borrowers should quickly agree on mutually acceptable terms. The global financial safety net can further help countries facing external funding shortfalls. As part of its response to the COVID-19 crisis, the IMF has expanded its lending toolkit to include a renewable and replenishable credit line for members with strong policy frameworks and fundamentals, provided new financing through other lending facilities, temporarily increased access limits to its emergency financing facilities, and improved its ability to provide grant-based debt service relief.

National-Level Policies

Creating room to accommodate elevated spending on crisis countermeasures. A sizable and aggressive economic policy response is already under way in several countries, notably in advanced economies where their status as issuers of reserve currencies provides more latitude for countering the crisis compared with emerging market and developing economies. The longer this crisis persists, the greater will be the fiscal demands on governments—including by way of health care spending, unemployment benefits, cash transfers, and countercyclical initiatives to revive activity. While the crisis lasts, governments should do all that they can to mitigate the deep downturn and be ready to adapt strategy to respond to the evolution of the pandemic and its impact on activity. Where fiscal rules may constrain action, temporary suspension of the rules would be warranted, combined with a commitment to a gradual consolidation path after the crisis abates to restore compliance with the rules over the medium term. Room for immediate spending needs could be created by prioritizing crisis countermeasures and reducing wasteful and poorly targeted subsidies. Prudent debt management—extending maturities on government borrowing and locking in low interest rates to the extent possible—can save debt service expenses and free up resources within the fiscal envelope to redirect toward crisis mitigation efforts (see also the recommendations in IMF 2020). Although instituting new revenue measures during the crisis will be difficult, governments may need to consider raising progressive taxes on more affluent individuals and those relatively less affected by the crisis (including increasing tax rates on higher income brackets, high-end property, capital gains, and wealth) as well as changes to corporate taxation that ensure firms pay taxes commensurate

with profitability (see also Chapter 1 of the October 2020 *Fiscal Monitor*). Countries should also cooperate on the design of international corporate taxation to respond to the challenges of the digital economy. While implementing such initiatives, fiscal authorities should also clearly communicate their commitment to ensuring that public finances remain on a sustainable footing, drawing up credible consolidation plans that can be implemented after the crisis recedes.

These policy objectives are shared across all countries confronting the health and economic crisis, with particularly severe impacts on those heavily dependent on tourism, oil exports, and external remittances. The magnitude of the challenge is in general far greater in countries that entered this crisis with large preexisting vulnerabilities, limited policy space, and a high degree of informality that limits the extent to which relief measures can reach vulnerable people through existing tax registries and banking channels. Such features typically correlate with tighter borrowing constraints. Without strong external support, those economies—particularly low-income countries with fragile health care systems, food and medical supply shortages, and volatile security situations—could be overwhelmed by the health and economic crisis.

Resources for health care. With the pandemic continuing to spread, all countries—including those where infections appear to have peaked—need to ensure that their health care systems can cope with the elevated demand for their services. This means securing adequate resources and prioritizing health care spending as needed, including on testing; contact tracing; personal protective equipment; life-saving equipment, such as ventilators; and facilities such as emergency rooms, intensive care units, and isolation wards.

Policies to limit economic damage where the pandemic is accelerating. The foremost priority in countries where infections continue to rise unabated is to slow transmission. As Chapter 2 shows, lockdowns are effective in bringing down infections. A necessary investment in public health, they pave the way for eventual economic recovery from the severe downturn brought on by mobility constraints.

- Economic policy countermeasures in such cases should limit the damage by cushioning income losses for people and firms. Among particularly effective measures in this regard are targeted temporary tax breaks for affected people and firms, wage subsidies for furloughed workers, cash transfers, allowances for postponements of financial payments, and paid sick and family leave. Expanded eligibility criteria for unemployment insurance and better coverage of self-employed workers should also be considered among efforts to strengthen the broader safety net. Such measures have already supported disposable income in many advanced economies and, to an extent, across emerging market and developing economies, preventing even further deep declines in spending. Where needed, temporary credit guarantees and loan restructuring can help solvent-but-illiquid firms remain afloat and preserve employment relationships likely to remain viable after the pandemic fades.
- At the same time, retraining and reskilling should be pursued to the extent feasible so that workers can look for jobs in other sectors, as needed. Because the transition may take a while, displaced workers will need extended income support as they retrain and search for jobs.
- Complementing the targeted measures, broad-based monetary, financial regulatory, and fiscal responses can help prevent deeper and longer-lasting downturns, even if mobility restrictions hamper their ability to stimulate spending to the extent typical in other recessions. These broader responses can boost credit provision (for example, through central bank liquidity support and targeted relending facilities for affected firms or regulatory actions to temporarily ease loan classification standards and provisioning requirements). Increases in borrowing costs can be contained through central bank policy rate cuts where interest rates are not already at their effective lower bound, or through asset purchases and forward guidance where interest rates are already at that limit. Among emerging market central banks that launch asset purchases, it is important to communicate clearly the objectives of the program and its consistency with price stability objectives. Doing so would mitigate the risks of perceived fiscal dominance, inflation, and capital flight. Fiscal stimulus through public infrastructure investment or across-the-board tax cuts (where financing constraints permit) can support confidence, protect corporate cash flow, and limit bankruptcies.

As the pandemic evolves, its effects on different sectors become more obvious, and policymakers learn more about what is most effective, the economic policy response for limiting the damage will have to adjust as well. It will need to avoid locking people and inputs

into sectors unlikely to return to pre-pandemic vitality, while at the same time supporting the vulnerable.

Supporting the recovery where reopening is under way. As noted earlier, many economies that began reopening in May and June have since slowed or paused that process. Workplace closures remain, but are not as widespread as a few months ago. As countries reopen, policies must support the recovery by gradually removing targeted support, continuing to facilitate reallocation to sectors less affected by social distancing, and providing stimulus to the extent possible.

- The unwinding of measures such as wage subsidies, cash transfers, enhanced unemployment benefits, and credit guarantees for small and medium enterprises should be calibrated to the pace of the recovery and start only after activity picks up durably. Premature scaling back of such lifelines, especially while infections are surging and may require renewed containment measures, risks pushing the economy back into recession. Moreover, the pace at which particular measures are unwound depends on the structure of the economy. For instance, in economies with a large share of self-employed people and significant informality, cash and in-kind transfers to households may need to continue for longer while other measures are scaled back. In economies where medium and large enterprises account for a large share of employment, credit guarantees and liquidity support for firms and wage subsidies for employed workers may need to be maintained to avoid sudden increases in joblessness, even as other lifelines are gradually withdrawn.
- As fiscal resources are freed from targeted support, some should be redeployed to public investment. Examples include investments in renewable energy, improvements in the efficiency of power transmission, and retrofitting buildings to reduce their carbon footprint (see also Chapter 2 of the October 2020 *Fiscal Monitor*). Moreover, as lifelines are unwound, social spending should be expanded to protect the most vulnerable. For example, where gaps exist and as needed, authorities could enhance safety net measures, such as paid and family sick leave, expanded eligibility for unemployment insurance, and strengthened health care benefit coverage.
- Complementing these efforts, hiring subsidies and additional spending on retraining, coupled with income support for displaced workers, can help smooth the transition. Measures to reduce labor market rigidities that deter firms from hiring can also help reallocate employment toward growing sectors. Moreover, an important part of the reallocation will involve balance sheet repair (see details in the section on policies to address medium- and long-term challenges).
- During the transition, where inflation expectations are anchored, accommodative monetary policy can help by ensuring that borrowing costs remain low and credit conditions supportive. The prospects of relatively low inflation over the medium term suggest that central banks have room to allow the recovery to take root firmly before they exit their current settings.

Limiting the damage in countries with large informal sectors. Many of the measures discussed so far rely on well-established tax registries and widespread access to bank accounts to ensure that relief reaches those who need it. But such infrastructure is often missing in economies with a large share of informal employment. In those countries, government relief can be delivered through digital payment systems, for instance as was done in Benin and Côte d'Ivoire (see also Díez and others 2020). In some countries, centralized databases with assigned identification numbers have been used to provide targeted assistance to market traders, taxi drivers, and others most affected during shutdowns (for example, in Togo). Additional challenges arise where individuals do not have mobile phones or identification numbers and may therefore not be covered by digital payments. In such cases, workarounds to deliver relief can include in-kind support of food, medicine, and other essentials delivered through local governments, community organizations, and specialized stores that stock subsidized goods (Prady 2020).

To counter further shocks, policymakers should also strengthen mechanisms for automatic, timely, and temporary support in downturns. As discussed in the April 2020 WEO, rules-based fiscal stimulus triggered by deteriorating macroeconomic conditions—such as temporary targeted cash transfers to liquidity-constrained low-income households that activate when unemployment or jobless claims rise above a certain threshold—can help dampen downturns.

Policies to Address Medium- and Long-Term Challenges

The COVID-19 pandemic is a transformational event unlike any seen since World War II. The damages to supply potential, the buildup of debt,

and implications for inequality discussed above are likely to exacerbate issues that predate the pandemic, and the setback to human capital accumulation is a new challenge. This section discusses policy priorities to address these challenges.

Catalyzing Stronger, Environmentally Sustainable Growth

Productivity growth had already slowed across both advanced and emerging market and developing economies in the 15 years before the pandemic, going back to before the global financial crisis (Adler and others 2017; October 2018 WEO, Chapter 2). The damage to supply potential in the medium-term projections reflects in part a continuation of forces that had dragged productivity growth lower in the years leading up to the pandemic: relatively slow investment growth weighing on physical capital accumulation, more modest improvements in human capital, and slower efficiency gains in combining technology with available factors of production, partly reflecting sectoral mismatches.

Policy initiatives that can counteract these forces include repairing balance sheets and disposing of distressed debt so that investment can recover quickly. Policymakers should also address labor market rigidities and reduce barriers to entry that may hamper redeployment of resources to growing sectors. In this regard, the corporate sector shake-up induced by the pandemic—particularly the exit of smaller firms—risks reinforcing the trend of broad-based increases in concentration and market power across the economy (Chapter 3 of the April 2019 WEO), posing a threat to dynamism and innovation. Competition policy frameworks and scrutiny of corporate mergers need to ensure that such developments do not lead to abuses of market power and that small start-ups can continue competing on a level playing field with incumbents.

Facilitating new growth opportunities, including to speed the transition to a low-carbon economy. In addition, as discussed in Chapter 3, a green investment push to increase reliance on renewables, improve efficiency of the grid, and retrofit buildings to increase energy conservation could also spur capital spending in such sectors as construction materials and energy-efficient heating systems, while speeding the transition to a lower-carbon growth path. The European Union's agreement to target 30 percent of the Next Generation recovery fund to climate-change-related spending is a step in this direction. More broadly, efforts to promote investment in new growth areas would also help with the post-pandemic reorganization of the economy as firms take advantage of new opportunities. An emerging cluster of growth opportunities during the pandemic relates to the accelerated shift to e-commerce, increasing digitalization of the economy, and possible innovation of new data-enabled services. Another cluster relates to medicine and biotechnology.

Boosting Human Capital Accumulation

The global loss of learning as schools and universities stay closed for a large part of 2020 is likely to be one of the most enduring legacies of the COVID-19 crisis. Virtual learning may not be an adequate substitute, even in locations with widespread high-speed internet connectivity where consumers have adequate access to online learning and supplementary instruction is available at home. Loss of learning can have long-lasting consequences on individuals' lifetime earning potential and economy-wide productivity growth. Policymakers will have to devise makeup strategies for use when the pandemic is under control and it is safe to resume full-time schooling. Options could include setting aside funding to accommodate adjustments to the length of the school year, training teachers on remedial approaches to correct learning losses, and instituting or expanding supplementary after-school tutoring programs (see WB 2020b). At the same time, educational and vocational programs will need to accommodate training needs in jobs that are likely to be in high demand (emergency first responders, nurses, and lab technicians and digital literacy more broadly, so that more and more people can take advantage of teleworking opportunities). Even with these adaptations in vocational programs, take-up may still fall short if the training involves acquiring a substantively different and challenging set of skills, raising the possibility of a persistent increase in dropouts and large numbers of people in neither education, employment, nor training.

Making Gains More Equitable

The setback to human capital accumulation is one dimension along which inequality is likely to increase as a result of the pandemic, as already discussed. Among the social spending measures beyond education to counter the increase in inequality are strengthening

social assistance (for example, conditional cash transfers, food stamps and in-kind nutrition, medical payments for low-income households), expanding social insurance (relaxing eligibility criteria for unemployment insurance, extending the coverage of paid family and sick leave), and investments in retraining and reskilling programs to boost reemployment prospects for displaced workers.

Resolving Debt Overhangs

The scope for actions to boost productivity growth, accelerate the transition to a low-carbon economy, and reduce inequality is limited in many instances because elevated debt levels entering the crisis are set to rise further.

Sovereign debt overhang. Governments with large debt stocks will need to consider options to raise revenues and gradually decrease expenditures over the medium term. These include measures to increase progressivity in the tax code discussed earlier. Efforts to expand the tax base can include reducing corporate tax breaks, applying tighter caps on personal income tax deductions, instituting value-added taxes where not part of the code, and improving the coverage of tax registries and electronic filing of returns. On the spending side, scaling back such outlays as poorly targeted and wasteful subsidies would help with consolidation. In some cases, restructuring of sovereign debt may be needed to alleviate financing pressures and restore debt sustainability, although this brings its own challenges, including potentially long-lasting impacts on a sovereign's credibility. Where available, collective action clauses may need to be activated to speed up the process. Restructuring options could include maturity extensions, interest rate reductions, principal reductions (haircuts), and other debt swaps (with renegotiated terms).

Corporate debt overhang. Resolving the likely large corporate debt overhang coming out the crisis will first require triaging business cases into those that are considered ultimately viable and can be restructured versus those that are unviable. In the case of systemically important firms, equity injections may be considered. If a firm's business model appears viable over the medium term, restructuring its balance sheet and providing liquidity support are appropriate. Special out-of-court restructuring frameworks may need to be strengthened (or established) to help deal with the expected high number of cases. Standardized restructuring solutions and incentives (deadlines for agreements, fines for creditors, threat of liquidation to debtors) will be needed to expedite restructuring (Liu, Garrido, and DeLong 2020). To help deal with a potential rise in nonperforming loans, supervisors should enhance regulatory oversight (for example, through more robust provisioning, write-offs, and income recognition), whereas banks should strengthen their internal nonperforming loan management capabilities. The development of distressed debt markets can be supported by increasing access to debtor information, removing regulatory barriers (for example, enabling nonbanks to own and manage nonperforming loans) and improving the quality of collateral valuations. Tax rules that inhibit debt restructurings or write-offs should also be amended (Aiyar and others 2015; Awad and others 2020).

The scale of the COVID-19 shock and potential for larger spillovers from bankruptcies than in normal recessions argue for providing more ample solvency support than usual, except for firms that were already insolvent before the crisis began. Tax measures, such as loss carrybacks, could help support previously viable firms. For large firms, support can take the form of direct equity injections or junior debt claims with warrants that allow the public purse to benefit from eventual return to profitability. For unlisted small and medium enterprises, where direct equity injections are not an option, support could involve grants today that are partially recovered by a temporarily higher corporate tax rate in future.

Where long-lived or structural shifts in consumption and production chains are taking place and a firm's medium-term prospects are poor, liquidation to enable reallocation of capital and labor to better uses may be needed. For firms rendered unviable by persistent structural changes, it is essential to have an efficient and equitable corporate bankruptcy framework that can apportion losses across investors, banks, and owners.

Multilateral Policies to Ensure a Sustained Global Recovery

Beyond the current pandemic, as noted in the section on risks, intensifying trade and technology tensions between countries could drag global growth starkly lower than the baseline projection.

Effective multilateral cooperation to defuse these tensions and address gaps in the rules-based multilateral trading system would go a long way toward preventing such outcomes.

Countries must also act collectively to implement their climate change mitigation commitments. As discussed in Chapter 3, joint action—particularly by the largest emitters—that combines a green investment push, together with steadily rising carbon prices, is needed to achieve emission reductions consistent with limiting global temperature increases to the targets of the 2015 Paris Agreement. A broadly adopted, growth-friendly mitigation package could raise global activity through investment in green infrastructure over the near term, with modest output costs over the medium term as economies transition away from fossil fuels toward cleaner technologies. Relative to unchanged policies, such a package would significantly boost incomes in the second half of the century by avoiding damages and catastrophic risks from climate change. The global community should also take urgent steps to strengthen its defenses against calamitous health crises, for instance by augmenting stockpiles of protective equipment and essential medical supplies, financing research, and ensuring adequate ongoing assistance to countries with limited health care capacity, including through support of international organizations.

Scenario Box 1. Alternative Scenarios

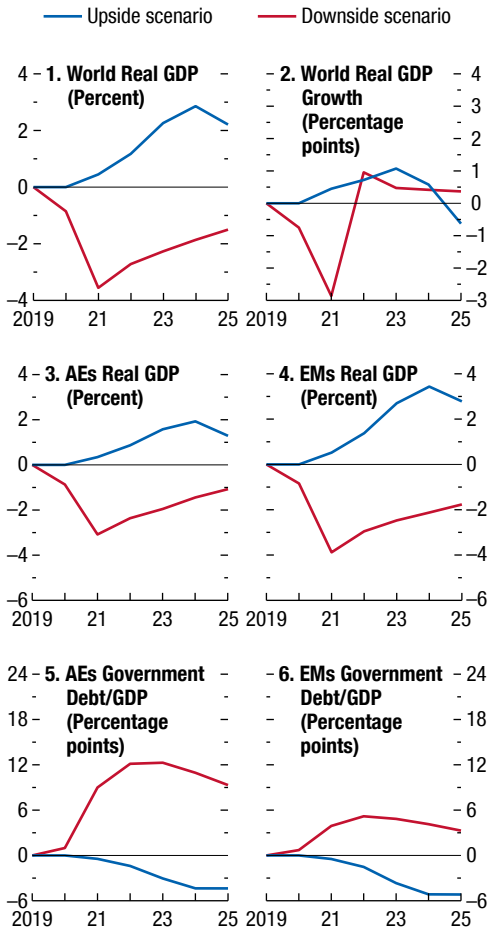
Here, the G20 Model[1] is used to estimate the potential impact on activity of two alternative paths for the evolution of the fight against COVID-19. In the first alternative—the downside—containing the virus proves to be a more difficult and protracted struggle until a vaccine is widely available. In the second alternative—the upside—it is assumed that all dimensions of the fight against the virus go well.

Downside Scenario: Containment Proves Much More Difficult

For the downside scenario (red line in Scenario Figure 1), it is assumed that measures to contain the spread—either mandated or voluntary—slightly increase the direct drag on activity in the second half of 2020 as the virus proves more difficult to contain. Further, it is assumed that in 2021 progress on all fronts in the fight against the virus proves to be slower than assumed in the baseline, including progress on vaccines, treatments, and adherence to social distancing guidelines to contain the virus's spread. This leads to a deterioration in activity in contact-intensive sectors, with the associated income effects spilling over to other sectors. These domestic demand effects are then amplified via trade. Financial conditions are also assumed to tighten, with corporate spreads rising in advanced economies and both corporate and sovereign spreads widening in emerging market economies. The increase in 2020 is quite mild but grows to be more substantive in 2021 as the weakness in activity persists. Financial conditions gradually return to baseline beyond 2022. Fiscal authorities in advanced economies are assumed to respond with an increase in transfers beyond standard automatic stabilizers, while those in emerging market economies are assumed to be more constrained, with only automatic stabilizers operating. Monetary authorities in advanced economies with constraints on conventional policy space are assumed to use unconventional measures to contain increases in long-term interest rates. The more protracted weakness in activity is assumed to create additional, persistent damage to economies' supply capacity, with a loss in productive capital, a persistent rise in the natural rate of unemployment, and temporarily weaker productivity growth. These scarring effects are assumed to be largely felt in 2022 and beyond. Panel 1 in Scenario Figure 2 contains a decomposition of the impact on global GDP of the four key layers of the downside scenario.

Relative to the baseline, global growth in 2020 is roughly ¾ percentage point weaker and almost 3 percentage points weaker in 2021 under the downside scenario. Emerging market economies are more

Scenario Figure 1. Alternative Evolutions in the Fight against the COVID-19 Virus
(Deviation from baseline)



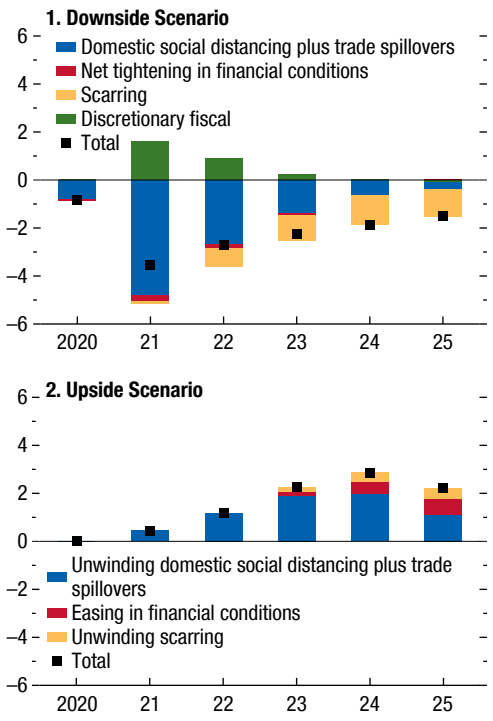
Source: IMF, G20 Model simulations.
Note: AEs = advanced economies; EMs = emerging market economies.

The authors of this box are Ben Hunt and Susanna Mursula.

[1]The G20 Model is a global, structural model of the world economy, capturing international spillovers and key economic relationships among the household, corporate, and government sectors, including monetary policy.

Scenario Box 1 *(continued)*

Scenario Figure 2. Downside and Upside Scenarios: Global Real GDP
(Percent deviation from baseline)



Source: IMF G20 simulations.

negatively impacted than are advanced economies, given that limited fiscal space constrains their ability to support incomes. Consequently, even tighter financial conditions for emerging market economies exacerbate the difference, which is further reinforced by more substantive scarring. After 2021 growth rises above baseline for several years, but the level of global GDP is still roughly 1.5 percent below baseline by the end of the *World Economic Outlook* horizon in 2025. The negative impact on the level of GDP is roughly twice as large for emerging market economies as for advanced economies. The more protracted negative impact on activity, combined with the additional fiscal expenditures to support incomes, leads to a marked increase in public indebtedness. Debt-to-GDP ratios rise by well above 10 percentage points, on average, for advanced economies, but by a more modest 5 percentage points for emerging market economies by 2022.

Upside Scenario: All Dimensions of the Fight against the Virus Go Well

Under the upside scenario, (blue line in Scenario Figure 1) it is assumed that all things in the fight against COVID-19 go much better than assumed in the baseline. On the treatment front, advances quickly start to reduce the fatality rate, reducing fear and helping to restore confidence. An early and substantial ramp-up in investment in vaccine production capabilities and cooperation agreements in the associated global supply chain lead to earlier, widespread vaccine availability. Complete openness and transparency in the underlying science increase confidence in vaccine efficacy and safety, leading to widespread vaccinations. All these advances will allow activity in the contact-intensive sectors, which have been most adversely affected, to bounce back more quickly than assumed in the baseline. In addition, the overall improvement in confidence will lead to higher spending across other sectors as uncertainty about future income prospects subsides. More buoyant activity will in turn lead to improved prospects for firms and less deterioration in fiscal positions, driving an easing in risk premiums. Further, the faster bounce-back will lead to fewer bankruptcies, less labor market dislocation, and a milder slowing in productivity growth than assumed in the baseline. The improvements in these supply side factors start in 2023 and grow. On the policy front, with the improvement in activity, fiscal withdrawal is assumed to be only in terms of automatic stabilizers, and monetary authorities everywhere are assumed to be able to accommodate the faster growth without imperiling their price stability objectives. Panel 2 in Scenario Figure 2 contains a decomposition of the impact on global GDP of the three key layers under the upside scenario.

Global growth under the upside scenario gradually accelerates relative to the baseline, with growth roughly ½ percentage point higher in 2021, rising to roughly 1 percentage point higher by 2023. In 2024 the pickup moderates, with growth slightly below baseline by 2025. Although both advanced and emerging market economies see marked improvements in activity, emerging market economies benefit more, as the baseline assumes that the impact of limited progress in measures to fight the virus falls more heavily on these economies. Further, the difference is magnified by the larger relative easing in risk premiums and a larger unwinding of the scarring embedded in the baseline.

Scenario Box 1 *(continued)*

By 2025 the level of global GDP is roughly 2 percent above the baseline, with the improvement in emerging market economies almost double that in advanced economies. The faster growth leads to an improvement in fiscal positions, with both advanced and emerging market economies seeing debt-to-GDP ratios falling by roughly 5 percentage points by the end of the *World Economic Outlook* horizon. Should fiscal authorities also take advantage of the stronger upside growth to unwind discretionary measures faster than assumed in the baseline, debt-to-GDP positions could improve even more.

Box 1.1. Revised *World Economic Outlook* Purchasing-Power-Parity Weights

The International Comparison Program (ICP), maintained and published by the World Bank in coordination with the Organisation for Economic Co-operation and Development and other international organizations, released new purchasing power parities (PPPs) for the reference year 2017 in May 2020 for the 176 economies that participated. Revised results for the preceding reference year, 2011, and estimates of annual PPPs for 2012–16 were also released.[1] PPPs are used to convert different currencies to a common currency and equalize their purchasing power by eliminating differences in price levels between economies. They show, with reference to a base economy (the United States), the relative price of a given basket of goods and services across economies.

Estimates of regional and world output and growth, along with forecasts, are key macroeconomic indicators reported in many of the IMF's flagship publications, including the *World Economic Outlook* (WEO). The revised PPPs used in the October 2020 WEO are based on 2011–17 data from the ICP 2017 survey, which are then extended forward and backward by using the growth rates in relative GDP deflators (the GDP deflator of a country divided by the GDP deflator of the United States). These generate PPP-based GDP, which is used as weights to compute regional and global real GDP growth and other real sector aggregates, including inflation.[2]

The authors of this box are Jungjin Lee and Evgenia Pugacheva, with contributions from Angela Espiritu and Mahnaz Hemmati.

[1]See ICP 2017 Report for more information on the results and methodology of the 2017 ICP exercise.

[2]See WEO FAQ for more information on the aggregation method and use of PPPs in the WEO.

Table 1.1.1. Changes in World GDP Shares from Purchasing-Power-Parity Revisions
(Percent, unless noted otherwise)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	World GDP Share							
	New (ICP 2017)			Old (ICP 2011)			Difference[2]	USD GDP Share
	2011	2017	2019[1]	2011	2017[1]	2019[1]	2019	2019
Advanced Economies	**45.3**	**44.0**	**43.1**	**45.2**	**41.3**	**40.3**	**2.8**	**59.1**
United States	16.3	16.1	15.9	16.3	15.2	15.1	0.9	24.4
Euro Area[3]	13.2	12.9	12.5	13.2	11.5	11.2	1.3	15.2
Japan	4.8	4.3	4.1	4.8	4.2	4.0	0.0	5.8
Other Advanced Economies[4]	7.0	6.9	6.8	6.9	6.6	6.5	0.3	8.4
Emerging Market and Developing Economies	**54.7**	**56.0**	**56.9**	**54.8**	**58.7**	**59.7**	**–2.8**	**40.9**
Emerging and Developing Asia	26.5	29.9	31.5	26.7	32.4	34.1	–2.6	24.1
China	14.4	16.3	17.4	14.5	18.1	19.2	–1.8	16.8
India	5.9	6.8	7.1	6.1	7.5	7.8	–0.7	3.5
Emerging and Developing Europe	7.5	7.6	7.6	7.7	7.2	7.1	0.5	4.5
Russia	3.4	3.1	3.1	3.6	3.2	3.1	0.0	1.9
Latin America and the Caribbean	8.7	8.0	7.6	8.7	7.7	7.2	0.3	5.9
Brazil	3.1	2.5	2.4	3.1	2.5	2.4	–0.1	2.1
Mexico	2.0	2.0	2.0	2.0	1.9	1.8	0.1	1.4
Middle East and Central Asia	9.0	7.4	7.1	8.7	8.4	8.1	–0.9	4.5
Saudi Arabia	1.7	1.3	1.2	1.4	1.4	1.3	–0.1	0.9
Sub-Saharan Africa	3.0	3.1	3.1	3.1	3.1	3.1	0.0	2.0
Nigeria	0.9	0.8	0.8	0.9	0.9	0.9	–0.1	0.5
South Africa	0.7	0.6	0.6	0.7	0.6	0.6	0.0	0.4

Sources: June 2020 WEO *Update*; and IMF staff calculations.
Note: New shares are based on the June 2020 WEO *Update* revised with ICP 2017; old shares are from the June 2020 WEO *Update*; ICP = International Comparison Program; USD = US dollar; WEO = *World Economic Outlook*.
[1]Extrapolations.
[2]Difference between column 3 and column 6; percentage points.
[3]Aggregate of member countries.
[4]Excludes the Group of Seven and euro area countries.

Box 1.1 *(continued)*

PPP Weight Changes for Regions and Economies

Table 1.1.1 shows that the share of emerging market and developing economies in world GDP rises, while that of advanced economies falls during 2011–19 based on ICP 2017 (columns 1–3), as was the case based on ICP 2011 (columns 4–6). However, the focus here is on the weight revisions for a given year, with the main change being a shift in the relative weight of advanced economies, whose share of the global economy for 2019 is now estimated at 43 percent—higher than the previous calculation of 40 percent. Looking at changes for different regions and economies, euro area countries and the United States are estimated to have higher shares in 2019 than before. Meanwhile, revisions for China and India together mostly account for the smaller shares of emerging Asia and emerging market and developing economies as a whole in new weights. Latin America and the Caribbean and emerging Europe have a slightly larger global weight, while the Middle East and Central Asia region has a smaller global weight. The weight of sub-Saharan Africa is virtually unchanged.

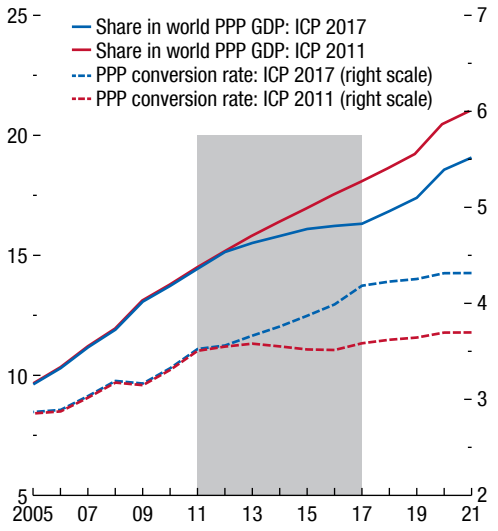
The country shares in world GDP used as weights to derive world output growth could differ, depending on whether the GDP shares are valued at PPP or market exchange rates.[3] Revisions in PPPs notwithstanding, emerging market and developing economies represent a much smaller fraction of global GDP at market exchange rates of 41 percent than at PPP of 57 percent for 2019, reflecting their more limited purchasing power in international markets.

Factors behind PPP Weight Revision

Sizable discrepancies can arise between PPPs from a new cycle and extrapolated PPPs from a previous cycle as the new cycle brings forth additional and updated information on the world. The six-year gap between ICP cycles resulted in notable differences for some economies.[4] One of the assumptions underlying PPP extrapolations for GDP is that the structure of each country's economy is similar to that of the numeraire country and changes in the same way over time. In practice, however, structures and changes can be very different. This is significant, particularly when developing economies are compared with an advanced economy. For example, the Chinese economy has been developing rapidly in recent years, and its structure has changed in a significantly different way from that of the United States.

Although the ICP provides revised 2011 PPP values with ICP 2017 results, 2011 revisions are small, and the new 2017 estimates drive the changes in PPP paths over 2011–17 compared with those extrapolated from the 2011 ICP vintage. Figure 1.1.1 shows that China's 2019 GDP share has been revised down, with the PPP conversion rate depreciating relative to previous estimates. This implies that the increase in overall prices in China was underestimated with extrapolation derived from ICP 2011. In ICP 2017, the relative price level in China in 2019 is now higher, and GDP converted at the PPP rate is therefore smaller. This in turn leads to a lower 2019 PPP share for China in the global economy using

Figure 1.1.1. Purchasing-Power-Parity Revision for China
(Percent; local currency per US dollar on right scale)



Sources: June 2020 *World Economic Outlook Update*; IMF staff calculations.
Note: Shaded area denotes the years of the new estimates from the ICP 2017 survey. ICP = International Comparison Program; PPP = purchasing power parity.

[3]Table 1.1 of the WEO report presents both measures of world output.

[4]While the extrapolation methodology used is robust, the estimates based on extrapolation—for example, the 2017 value derived from ICP 2011—should not be expected to match the corresponding year in the new ICP 2017 survey. See McCarthy (2013) and Deaton and Aten (2017).

Box 1.1 *(continued)*

ICP 2017 (17.4 percent) compared with the share estimated using ICP 2011 (19.2 percent). This implies that increases in overall prices exceed differences in GDP deflators.

Impact of PPP Revision on Aggregate Growth

As an illustration of how the change in weights can affect the calculation of aggregate growth rates, Table 1.1.2 compares the aggregation of the June 2020 WEO *Update* country forecasts based on ICP 2011 with those based on ICP 2017. The lower weight of fast-growing emerging Asia and the larger weight of advanced economies under ICP 2017 imply that global growth calculated with the new weights is slightly lower. Average global growth is estimated at 3.2 percent for 2018–19 and 3.6 percent for 2011–17, some 0.1 percentage point lower than with the old weights. For 2020 the aggregation of the June 2020 WEO *Update* country forecasts with the new weights yields an aggregate global growth rate projection of –5.2 percent for 2020 (compared with the projection of –4.9 percent in the June 2020 WEO *Update,* which used the old weights).[5] The reduction in the relative weight of its fastest-growing region also implies slightly lower average growth for emerging market and developing economies using the ICP 2017 weights compared with the estimate using the ICP 2011 weights.

[5]GDP share and aggregate growth calculations based on ICP 2017 presented here are based on the most recent data of the June 2020 WEO *Update* and may differ from the final estimates in the October 2020 WEO.

Table 1.1.2. Revisions to Real GDP Growth of *World Economic Outlook* Aggregates
(Percent, unless noted otherwise)

	2011–17	2018	2019	2020	2021
June 2020 WEO Revised with ICP 2017					
World	3.6	3.5	2.8	–5.2	5.4
Advanced Economies	1.9	2.2	1.7	–8.1	4.8
Emerging Market and Developing Economies	5.0	4.5	3.6	–3.1	5.8
June 2020 WEO Based on ICP 2011					
World	3.7	3.6	2.9	–4.9	5.4
Advanced Economies	1.9	2.2	1.7	–8.0	4.8
Emerging Market and Developing Economies	5.1	4.5	3.7	–3.0	5.9
Difference (percentage points)					
World	–0.05	–0.08	–0.08	–0.24	–0.04
Advanced Economies	0.00	0.00	0.00	–0.07	0.04
Emerging Market and Developing Economies	–0.04	–0.03	–0.05	–0.13	–0.05

Sources: June 2020 WEO *Update*; and IMF staff calculations.
Note: ICP = International Comparison Program; WEO = *World Economic Outlook*.

Box 1.2. Inclusiveness in Emerging Market and Developing Economies and the Impact of COVID-19

This box documents the possible implications of the pandemic for poverty reduction, improvements in life expectancy, and progress toward greater equality in emerging market and developing economies. The number of people in extreme poverty is likely to rise substantially this year, for the first time in more than 20 years, and income inequality, on average, across these economies could rise back to levels seen in 2008, reversing gains since the global financial crisis. Life expectancy is less likely to be affected, although there are downside risks related to the fragile state of health care systems and interruptions in treatments of other life-threatening illnesses.

In the two decades prior to the COVID-19 crisis, emerging market and developing economies grew by 4.1 percent on average—one percentage point higher than during the preceding two decades (1980–99). With slowing population growth, per capita growth shows a sharper contrast: 2.4 percent in 2000–19 versus 1.0 percent in 1980–99. A key question is how much progress has been made in the past 20 years toward enhancing inclusiveness (in poverty reduction, improvements in life expectancy, and greater equality) within countries.[1]

With the pandemic, real GDP in emerging market and developing economies is expected to decline by 3.3 percent in 2020. This crisis is disproportionately affecting vulnerable workers, putting at risk much of the progress achieved before the crisis and likely exacerbating remaining gaps. Against this backdrop, a second key question is how the pandemic will affect inclusiveness in these economies.

Stocktaking: Progress on Inclusiveness prior to the Pandemic

Remarkable progress was made on poverty reduction since 2000 until the pandemic started.[2] The share of people living on less than $1.90 a day (in 2011 purchasing-power-parity terms) in the total population declined from 25 percent in 2002 to 12 percent in 2018, on average, with stronger progress in low-income developing countries (Figure 1.2.1, panel 1).[3] On top of improvements in the extensive margin of poverty (headcount measure), the poverty gap index (how far below the poverty line the poor in a given country fall) points to improvements in the intensive margin (average distance from $1.90 a day among people living in poverty), indicating that the average annual money transfer per person living in poverty necessary to end extreme poverty declined from $240 to $184 (for perfectly targeted transfers).

Health-related indicators also showed significant progress before the crisis. Life expectancy exhibited strong "convergence"—levels substantially increased for almost all emerging market and developing economies, and the increase was stronger for countries with lower life expectancy, most of which are low-income developing countries (Figure 1.2.1, panel 2).[4] The convergence can also be seen within countries: inequality in life expectancy across people in a country was reduced, though to a lesser extent. Other health indicators also showed significant progress, including mortality under age five, maternal mortality, and access to clean water. Nevertheless, challenges remain in health care systems in many of these economies and make them particularly vulnerable to the pandemic (see WB 2019).

Despite advances in poverty reduction and improvement in life expectancy, progress in reducing income inequality has been slow over the past two decades. The Gini coefficient (a measure of statistical dispersion intended to represent income inequality) declined only gradually, by 3 percentage points—from 44 to 41, on average—during this period (Figure 1.2.2, panel 1). Wide gaps with respect to the average level of advanced economies remain for many emerging market and developing economies, while some others in this country group have already reached that level. Progress has been weaker for low-income developing countries, with one-third of them seeing an increase in income inequality. Similarly, the Palma ratio shows that the total income of the top 10 percent is twice as large as the total income of the bottom 40 percent in

The authors of this box are Gabriela Cugat and Futoshi Narita, with contributions from the authors of Brussevich, Dabla-Norris, and Khalid (2020) and Bannister and Mourmouras (2017) as well as Albe Gjonbalaj. This box is part of a research project on macroeconomic policy in low-income countries supported by the United Kingdom's Foreign, Commonwealth and Development Office (FCDO). The views expressed here do not necessarily represent the views of the FCDO.

[1]For further discussion focused on low-income developing countries, see Fabrizio and others (2017); Chapter 1 of the April 2020 *Sub-Saharan Africa Regional Economic Outlook* discusses progress made in sub-Saharan African countries.

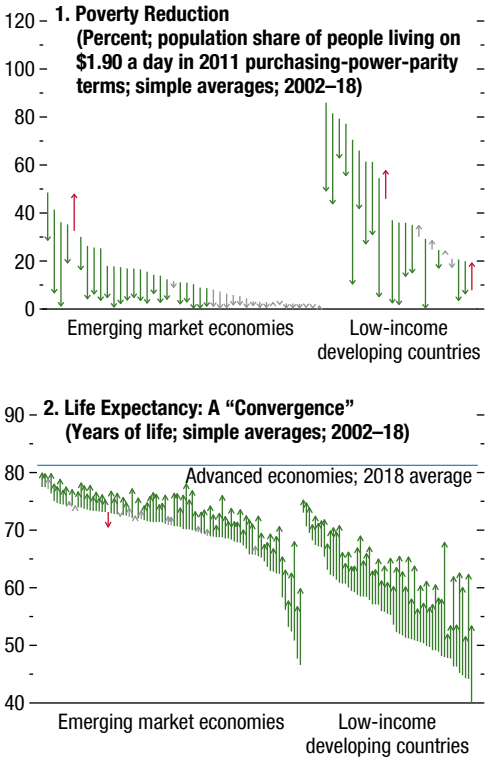
[2]For further discussion, see WB (2018).

[3]As the data examined in this box are mostly sparse, data points for a given year are averaged over the year and the previous four years.

[4]For further discussion, see UNDP (2019).

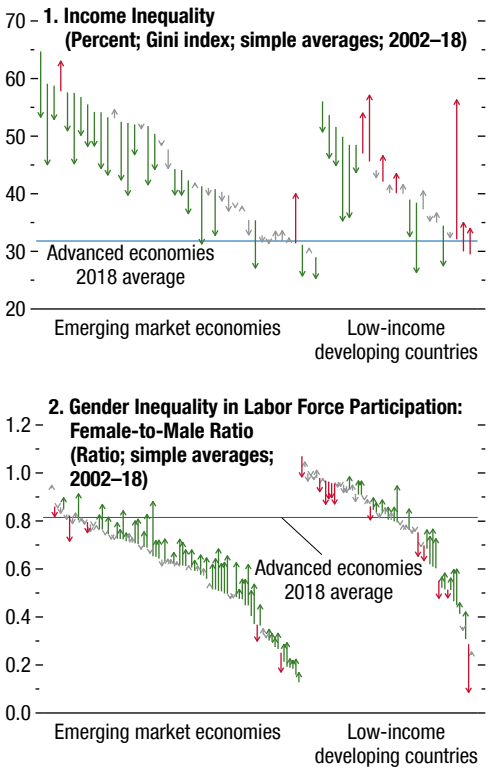
Box 1.2 *(continued)*

Figure 1.2.1. Positive Developments



Source: World Bank, World Development Indicators database.
Note: Each arrow represents a country, beginning at the level of the corresponding variable in 2002 and ending at the level in 2018. Green (red) color indicates improvements (deteriorations) larger than half a standard deviation. Data points for a given year are averaged over the year and the previous four years.

Figure 1.2.2. Remaining Gaps



Sources: International Labour Organization; World Bank, World Development Indicators database; and IMF staff calculations.
Note: Each arrow represents a country, beginning at the level of the corresponding variable in 2002 and ending at the level in 2018. Green (red) color indicates improvements (deteriorations) larger than half a standard deviation. Data points for a given year are averaged over the year and the previous four years. The definition of the Gini index varies depending on household surveys across countries (for example, income or consumption).

emerging market and developing economies, whereas the difference is only 25 percent for advanced economies, on average.

Several other dimensions of inclusiveness, related to inequality of opportunity, have also seen slow progress. The share of inactive youth (that is, youth not in education nor in employment) has hovered around 20 percent.[5] Inequality in education (that is, inequality in the distribution of years of schooling within a country) has only marginally declined, leaving wide gaps in most of these economies compared with the average in advanced economies.[6] Gender equality has been promoted in recent years, but the gender gap remains high in labor force participation (Figure 1.2.2, panel 2).[7] In some economies, lack of progress in female labor force participation is related to higher

[5]For a discussion of youth labor markets in these economies, see Ahn and others (2019). For a discussion of labor market policies in these economies, see Duval and Loungani (2019).

[6]The education inequality index is compiled by the United Nations Human Development Report Office. For further discussion, see UNDP (2019).

[7]For a discussion of gender inequality in economic issues, see Brussevich and others (2018), Ostry and others (2018), and Sahay and Cihak (2018).

Box 1.2 *(continued)*

female enrollment in education. However, educational attainment of women also remains lower than that of men in most of these economies, especially in low-income countries.

The Impact of the Pandemic on Inclusiveness

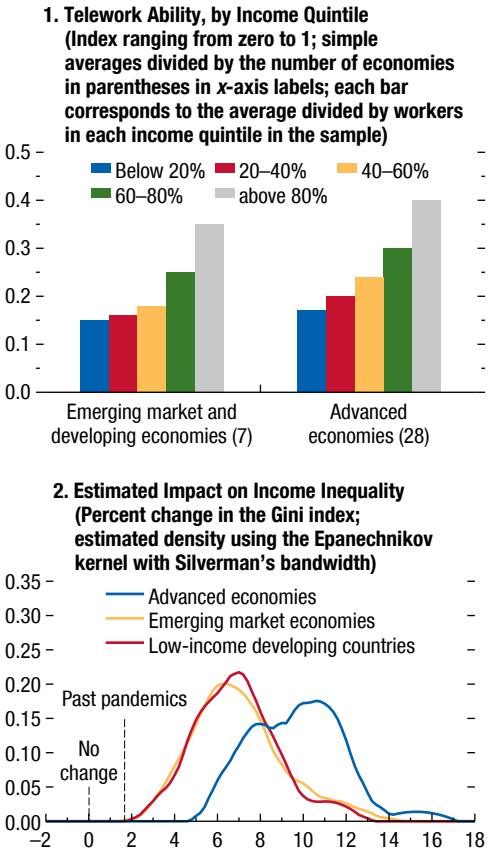
The COVID-19 pandemic is expected to both halt the improving trends and widen existing gaps in inclusiveness. The World Bank estimates that, compared with pre-pandemic projections, the COVID-19 pandemic will increase the global share of people living on less than $1.90 a day by 1.14 percentage points, which represents almost 90 million people newly living in extreme poverty—the first increase since 1998.[8] In terms of life expectancy, the COVID-19 impact is currently projected to be moderate.[9] However, downside risk factors are related to more fragile health care systems than in advanced economies and interruptions in other health services to treat and prevent HIV, malaria, and tuberculosis (see Hogan and others 2020). Income inequality widened during past pandemics, especially over the medium term (see Furceri and others 2020). Furthermore, the impact on inequality is expected to be much larger than in the past because the COVID-19 crisis and associated containment measures are disproportionately affecting the most vulnerable (see Adams and others 2020 and Shibata 2020). Gender equality is also being undermined and could experience a sharp setback under the current circumstances (see Alon and others 2020 and Georgieva and others 2020).

Although it is difficult to quantify distributional impacts of the pandemic on many economies in a comparable way, a parsimonious estimate based on lower telework ability for lower-paying jobs indicates a strong setback in progress made on income inequality since the global financial crisis. Brussevich, Dabla-Norris, and Khalid 2020 estimate the degree of telework ability across 35 economies and finds that it is generally lower for low-income earners than high-income earners (Figure 1.2.3, panel 1). Other real-time survey data also show that more tele-workable sectors saw a smaller loss of employment

[8]See WB (2020a). The estimate corresponds to the baseline projection without change in inequality.

[9]With younger populations (of a median age of 27 years) being less vulnerable to the disease so far, the mortality burden is several times smaller than in advanced economies (Decerf and others 2020).

Figure 1.2.3. Telework Ability and Income Inequality



Sources: Bick, Blandin, and Mertens 2020; Brussevich and others 2020; World Bank, World Development Indicators database; and IMF staff calculations.
Note: In panel 2, the impact on the Gini index is estimated by distributing the aggregate income shock (based on the IMF's real GDP projections) to the income quintile shares, in proportion to telework ability, whose magnitude is calibrated using the estimated coefficient of telework ability in the regression of employment loss across sectors using the data by Bick, Blandin, and Mertens (2020, Appendix Table C1). Percent changes in the Gini index are obtained as the changes in an approximated Gini index based only on the income quintile shares. The (closest) economy group average is used when the telework ability index is missing. Data points for a given year are averaged over the year and the previous four years. The vertical line for "past pandemics" corresponds to 1¼ percent, based on the findings of Furceri and others (2020) on the net Gini index.

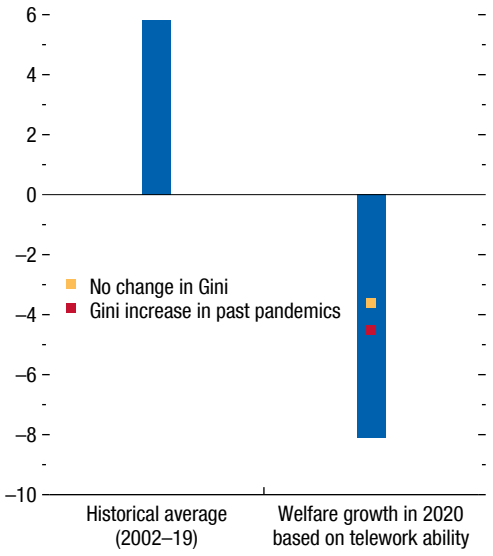
Box 1.2 *(continued)*

from February to May 2020 in the United States (see Bick, Blandin, and Mertens 2020). Extrapolating these findings to emerging market and developing economies, the aggregate decrease in income (taken from the IMF's latest real GDP projections) can be distributed among the groups of people divided by income quintiles for each economy, in proportion to telework ability.[10] The resultant impact (without reflecting any redistribution policies or other factors) on the income shares by income quintile are used to estimate a percent change in the Gini coefficient in 2020. These show that the average Gini coefficient for emerging market and developing economies would increase by 2.6 percentage points to 42.7, broadly comparable to the level in 2008, implying that gains since the global financial crisis could be reversed (Figure 1.2.3, panel 2).

A simple welfare measure that goes beyond GDP indicates that there was good progress before the pandemic and that a strong reversal due to this crisis can be expected. The measure, proposed by Jones and Klenow (2016), takes into account four factors: (1) real consumption per capita, (2) life expectancy, (3) leisure time, and (4) consumption inequality.[11] Combining these factors, the average welfare improvement in 56 emerging market and developing economies with available data from 2002 to 2019 was equivalent to a 6 percent increase in annual consumption levels in every year (Figure 1.2.4). This exceeded per capita real GDP growth in the same period by 1.3 percentage points. The excess welfare growth stems almost entirely from longer life expectancy. A setback in welfare in 2020 could exceed 8 percent, driven in large part by the excess change in inequality, as indicated by parsimonious estimates.

Since 2000 emerging market and developing economies have made appreciable progress in poverty reduction and increasing life expectancy. COVID-19 threatens to set back such progress, particularly in terms of poverty reduction, and to widen existing gaps in terms of income inequality, access to education, and gender equality. Redistribution policies and measures to support affected people and firms are essential to mitigate sizable adverse impacts on inequality and on welfare more generally.

Figure 1.2.4. Beyond GDP Welfare Growth
(Percent; annualized per capita growth relative to 2002; simple averages across 45 economies)



Sources: Penn World Table (9.1); World Bank, World Development Indicators database; and IMF staff calculations.
Note: The welfare measure is based on Jones and Klenow (2016, equation 7). For different scenarios on inequality in 2020, the "no change in Gini" scenario uses the latest observations; the "Gini increase in past pandemic" scenario applies a 1¼ percent increase to all economies, based on the findings of Furceri and others (2020) on the net Gini index; and the "telework ability" scenario is based on parsimonious estimates using various levels of telework ability across income groups within countries (see Figure 1.2.3, panel 2). Macroeconomic data are extrapolated from the IMF's latest projections. The impacts on life expectancy and employment are estimated using a multigroup susceptible-infected-removed model. Data points for a given year are averaged over the year and the previous four years.

[10]How the shock affects the income quintile shares depending on telework ability is calibrated using the estimated coefficient of telework ability in the regression of employment loss across sectors using the data from Bick and others (2020, Appendix Table C1). The (closest) economy group average is used when the telework ability index is missing.

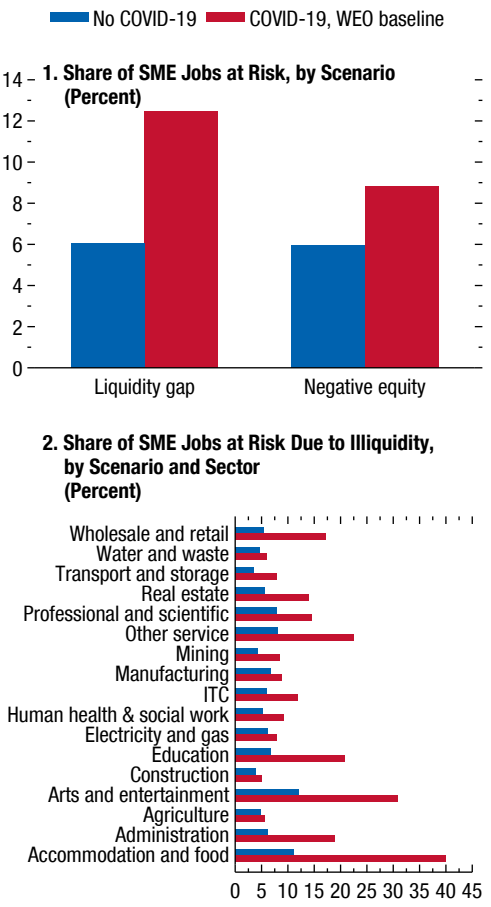
[11]See Jones and Klenow (2016), which proposes a welfare measure in percent of annual consumption, based on the lifetime expected utility of an imaginary person just before she or he is born in a country in a given year, under many strong assumptions that are needed to compute this measure for a large set of countries with only aggregate-level data. See the online appendix of Jones and Klenow (2016) for a detailed discussion on caveats regarding this measure. In addition, for an extension to reflect net welfare losses from environmental issues, see Bannister and Mourmouras (2017).

Box 1.3. Rising Small and Medium Enterprise Bankruptcy and Insolvency Risks: Assessment and Policy Options

The COVID-19 recession will affect small and medium enterprises (SMEs) particularly hard. These firms typically are more vulnerable than their larger counterparts, reflecting, among other factors, their limited buffers and access to credit. However, the effects of the current crisis on SMEs are likely to be even more severe than in previous crises because SMEs are most prevalent among the hardest-hit sectors, such as restaurants, hotels, and arts and entertainment. Consequently, liquidity and solvency risks are bound to increase, putting both SME jobs and debt at risk. This box assesses jobs at risk and discusses policy options to address rising bankruptcy risks among SMEs. Using the same data and framework, Chapter 1 of the October 2020 *Global Financial Stability Report* assesses implications for financial stability, with particular focus on SME debt at risk.

The analysis builds on the methodology proposed by Gourinchas and others (2020) and uses Orbis data for SMEs across 21 (mostly advanced) economies.[1] To assess the liquidity risks, the analysis considers whether a firm has enough cash available at the end of 2020 to cover its operational and financial expenses, under the assumption that it can roll over maturing debt but cannot take on additional debt. Likewise, for insolvency risks, the analysis focuses on whether a firm's net equity is projected to become negative at the end of 2020. The analysis shows that firms in distress account for 9 to 13 percent of total SME (in sample) employment, depending on the stress measure chosen—insolvency or illiquidity. This represents almost a doubling of SME jobs at risk due to liquidity risks (and a 50 percent increase due to insolvency risks) vis-à-vis a scenario without COVID-19 (see Figure 1.3.1, panel 1). Using illiquidity as a distress measure, the share of jobs at risk climbs to 30 and 40 percent for the "arts and entertainment" and "food and accommodation" sectors, respectively, reflecting their comparatively larger drop in output and greater job intensity (Figure 1.3.1, panel 2).[2]

Figure 1.3.1. Small and Medium Enterprises' Liquidity and Solvency Concerns under COVID-19 in 2020



Sources: Orbis; and IMF staff calculations.
Note: The bars measure the share of SME jobs at risk due to firms facing a liquidity gap or negative equity under a scenario without COVID-19 in 2020 (blue bars) and with COVID-19 using the WEO baseline projections at the country level (red bars). Data are aggregated from the firm to the country level using sectoral weights, and across countries using GDP weights. ITC = information technology and communication; SME = small and medium enterprise; WEO = *World Economic Outlook*.

The authors of this box are Federico Díez and Chiara Maggi.

[1]The countries included are Australia, Austria, Belgium, the Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

[2]Accounting for the massive government support provided by most countries dampens these projections. This support is difficult to quantify because it has come in multiple forms with widely different take-up rates across firms and countries. Bearing these limitations in mind, preliminary simulations suggest that the announced government support could have significantly dampened the rise in liquidity shortages and insolvency rates in some European countries (Chapter 3 of the October 2020 *Regional Economic Outlook: Europe*).

Box 1.3 *(continued)*

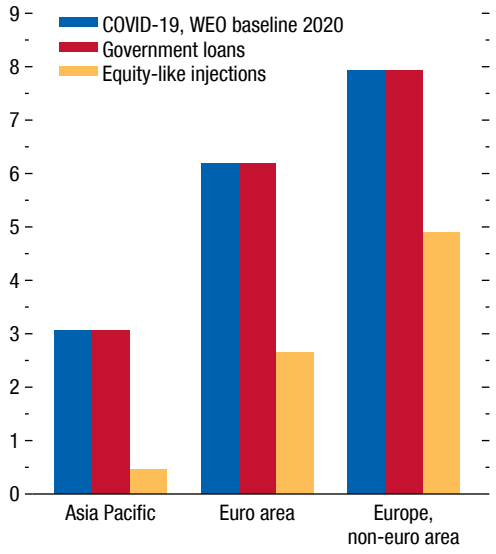
The large projected increased risks call for further government support. While standard advice involves providing liquidity to illiquid but solvent firms, and restructuring insolvent firms to facilitate swift resource reallocation, this time is different. The magnitude of the shock, the uncertainty about its duration, and the macro-financial amplifiers associated with mass bankruptcies justify ampler-than-usual recourse to solvency support. This comes over and above the need to cut the legal and financial costs of bankruptcy procedures to alleviate risks of overwhelming bankruptcy courts.

The multiple ways governments provide solvency support to firms can involve important trade-offs—such as balancing the reach and cost-effectiveness of support, minimizing unwarranted bankruptcies, and containing fiscal costs, as well as promoting firms (and jobs) preservation and resource reallocation. Figure 1.3.2 shows the impact on projected insolvency rates of two illustrative options—giving all SMEs 5 percent of their pre-pandemic annual revenues (accounting for more than 4 percent of GDP) in the form of either government loans or equity(-like) injections. Only the equity(-like) injections would reduce insolvency risks—and, further, they would reduce the share of jobs at risk by almost 3 percentage points relative to panel 1 of Figure 1.3.1.[3] This benefit comes at the cost of greater fiscal risks, particularly if firms still end up defaulting, given that equity(-like) claims would then be junior to debt claims.

Overall, rising risks and the associated drag on the recovery make a case for extending support to firms for longer and for equity(-like) interventions—at least in countries with available fiscal space. For larger firms, options include direct equity injections or junior debt claims together with warrants, for example. For SMEs, combining grants with a temporarily higher future corporate tax rate would act like an equity injection; such an approach could raise tax administration challenges and would need to be carefully calibrated. All these options would entail larger fiscal risks, however, given that equity-like injections into SMEs may attract not only viable firms but also those that are unviable and gambling for resurrection.

[3]Both types of policy imply a cash transfer of a similar amount and thereby are equally effective at easing liquidity risks.

Figure 1.3.2. Change in Share of Small and Medium Enterprises with Negative Equity, by Policy Scenario and Region
(Percentage points)



Sources: Orbis; and IMF staff calculations.
Note: The bars measure the change in the share of SME firms with negative equity under a scenario with no policy intervention (blue bars), government loans (red bars), and equity-like injections (yellow bars). The changes are computed comparing the WEO baseline scenario with COVID-19 to a counterfactual scenario for 2020 without COVID-19. Data are aggregated from the firm to the country level using sectoral weights, and across countries using GDP weights. SME = small and medium enterprise; WEO = *World Economic Outlook*.

Box 1.4. Social Unrest during COVID-19

Social unrest has decreased in recent months as mobility has declined. This is consistent with past experience immediately following epidemics. However, unrest was high and rising before the COVID-19 crisis started. As the crisis passes, unrest may yet reemerge in countries where progress on underlying social and political issues has stalled and where the crisis exposes or exacerbates preexisting problems.

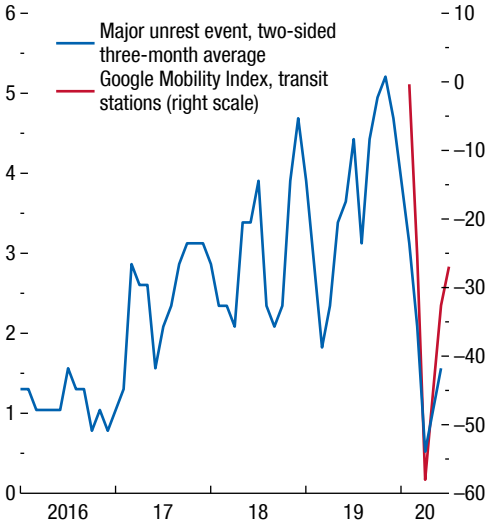
Social unrest has fallen markedly as lockdowns and social distancing have been introduced. The Reported Social Unrest Index (RSUI), which counts media reports of social unrest, has fallen dramatically since March 2020.[1] The frequency of major unrest events—defined by country-specific spikes in the RSUI—fell to its lowest in almost five years. The decline in social unrest corresponds closely with a generalized decline in mobility driven by regulations, such as shelter-in-place orders and voluntary social distancing, as shown in Figure 1.4.1 (in line with the findings of Chapter 2). Notable exceptions include the United States, where protests against police violence grew rapidly at the start of June (Figure 1.4.2), and Lebanon.[2]

Before the COVID-19 outbreak, unrest had been rising for several years. Late 2019 and early 2020 saw major protests, most notably in the Middle East and South America but also elsewhere, including in Belarus, Bolivia, Chile, France, Hong Kong Special Administrative Region, India, Iran, and Iraq. This was the continuation of a longer trend since 2016 (Figure 1.4.1), which itself reversed a gradual decline in unrest following a peak after the Arab Spring of 2011.

Historically, countries with more epidemics experience more frequent unrest. Table 1.4.1. presents cross-sectional evidence on the number of social unrest events and epidemics since 1990. Data on epidemics are from EM-DAT, a database reporting information on the timing and location of more than 1,200 country-year epidemic events since 1990. The results show a positive and statistically significant cross-country relationship between the two variables. This result holds within regions and is robust for both the frequency and severity of epidemics.

Figure 1.4.1. Monthly Share of Countries Experiencing Unrest Implied by the Reported Social Unrest Index

(Percent; percent deviation from baseline on right scale)



Sources: Factiva; Google Community Mobility Reports; and IMF staff calculations.
Note: The Google mobility index is a simple average of all countries' transit mobility deviation from baseline, expressed monthly.

However, this cross-sectional relationship is likely not causal. For example, common factors, such as geography or income level, may lead to more unrest and more or more serious epidemics. To explore this possibility, Table 1.4.2. presents results from a dynamic panel regression.[3] This accounts for some of the common drivers, including country- and time-specific effects and recent protests. The results show very weak

The authors of this box are Philip Barrett and Sophia Chen. Luisa Calixto provided research assistance.

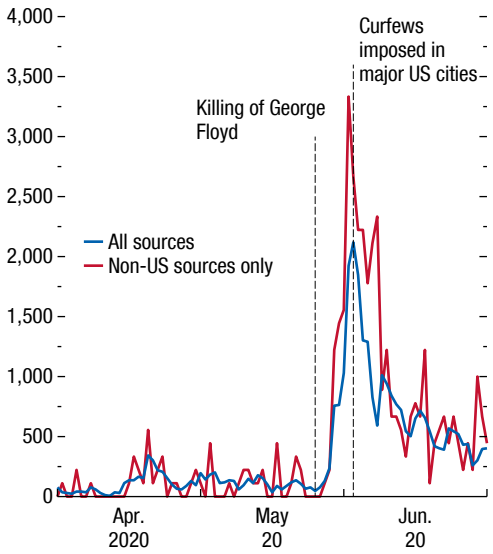
[1]The RSUI is a measure of social unrest constructed from media reports. Details about the index and how it can be used to identify major events are discussed in Barrett and others (2020).

[2]That media reports reacted strongly in the US case is also evidence that this approach still captures protests despite other newsworthy events.

[3]Specifically, the linear probability model: $y_{i,t} = \alpha_i + \eta_t + \sum_{j=1}^{n} \beta_j x_{i,t}^j + \gamma' z_{i,t} + e_{i,t}$, in which $y_{i,t}$ is an indicator for a social unrest event in country i in year t, α_i and η_t are country and time fixed effects, $x_{i,t}^j$ is an indicator variable that takes a value of 1 if the latest disaster occurred j periods prior (in practice we group past lags together to improve power), and $z_{i,t}$ is a vector of controls. Nonlinear models are avoided to admit a wide battery of country and time fixed effects. Barrett and others (2020) shows that recent social unrest both domestically and in neighboring countries is correlated with higher future social unrest, so these are included as controls. This short-term analysis does not preclude longer-term effects of epidemics on unrest, such as those identified in the October 2020 *Asia and Pacific Regional Economic Outlook*.

Box 1.4 *(continued)*

Figure 1.4.2. Daily Protest Articles for the United States, April–June 2020
(Index, April 2020 = 100)



Sources: Factiva; and IMF staff calculations.

statistical evidence of a higher likelihood of unrest following epidemics. On the contrary, in any given country, the likelihood of social unrest drops slightly following epidemics (see especially specifications 2 and 3). The COVID-19 experience so far is consistent with this historical pattern.

Recent history also includes few examples of unrest obviously caused by epidemics. Concerns over public health have rarely been a primary driver of major episodes of social unrest in the past two decades, despite numerous (often viral) epidemics during this period. While specific demands vary, the purported motives of protesters in events as diverse as the Arab Spring of 2011, unrest in Latin America in late 2019, anti-austerity protests in Europe following the Great Recession, and a variety of episodes in Asia are all at least superficially related to dissatisfaction about social or political issues, not public health. At the same time, several major public health crises have occurred, albeit of smaller scale than the COVID-19 episode, including SARS (2002–04), the H5N1 avian flu (2003–present), the H1N1 swine flu (2009–10), MERS (2012–present), and the West African Ebola epidemic (2013–16).

Several factors may explain the lack of a short-term link from epidemics to unrest. Humanitarian crises likely impede the communication and transportation needed to organize major protests. Public opinion may favor cohesion and solidary in times of duress. Or incumbent regimes may take advantage of an emergency to consolidate power and suppress dissent.

Unrest is likely to reemerge as the pandemic eases. This analysis shows that unrest was elevated before the COVID-19 crisis began but has declined as the crisis has continued. It is reasonable to expect that, as the crisis fades, unrest may reemerge in locations where it previously existed, not because of the COVID-19 crisis per se, but simply because underlying social and political issues have not been tackled. The threats may also be bigger where the crisis exposes or exacerbates problems, such as a lack of trust in institutions, poor governance, poverty, or inequality.[4]

[4]A large body of literature discusses how such factors can lead to political instability (Alesina and Perotti 1996) and civil conflicts (surveyed by Blattman and Miguel 2010).

Table 1.4.1. Cross-Sectional Regressions
(Cross-sectional relationship between social unrest and epidemics)

	Dependent Variable: Number of Social Unrest Events, 1990–2019			
	(1)	(2)	(3)	(4)
Number of Epidemics	0.056***	0.044**		
	(0.013)	(0.019)		
Deaths from Epidemics			0.0002***	0.0001*
			(0.00005)	(0.0001)
Region Fixed Effects	No	Yes	No	Yes
Observations	128	128	128	128
R^2	0.080	0.109	0.058	0.097
Adjusted R^2	0.072	0.072	0.050	0.060

Sources: EM-DAT; Reported Social Unrest Index; and IMF staff calculations.
Note: Robust standard errors shown in parenthesis.
*$p < .05$; **$p < .01$; ***$p < .001$.

Box 1.4 *(continued)*

Table 1.4.2. Dynamic Regressions: Epidemics

(Conditional probabilities of social unrest following epidemics)

	Dependent Variable: Social Unrest Event					
	(1)	(2)	(3)	(4)	(5)	(6)
Epidemic, Current Month		–0.003	–0.006**	0.0003	0.002	0.003
		(0.003)	(0.003)	(0.003)	(0.004)	(0.005)
Epidemic, Last 2–3 Months		–0.003	–0.006*	–0.001	–0.001	–0.003
		(0.003)	(0.003)	(0.003)	(0.005)	(0.005)
Epidemic, Last 4–6 Months		–0.005*	–0.009***	–0.003	–0.003	–0.003
		(0.003)	(0.003)	(0.003)	(0.004)	(0.005)
Months since Last Social Unrest Event					0.00000	–0.00000
					(0.00002)	(0.00003)
Months since Last Social Unrest Event, Neighboring Country						0.00002
						(0.00003)
Constant	0.014***	0.015***				
	(0.001)	(0.001)				
Country Fixed Effects		No	Yes	Yes	Yes	Yes
Time Fixed Effects		No	No	Yes	Yes	Yes
R^2	0.014	0.015	0.019	0.036	0.044	0.049
Observations	27,223	27,223	27,223	27,223	17,893	14,952

Sources: EM-DAT; Reported Social Unrest Index; and IMF staff calculations.

Note: All specifications also include further lags of epidemics with no robust statistical patterns. Double-clustered standard errors are shown in parenthesis.

*$p < .05$; **$p < .01$; ***$p < .001$.

Special Feature: Commodity Market Developments and Forecasts

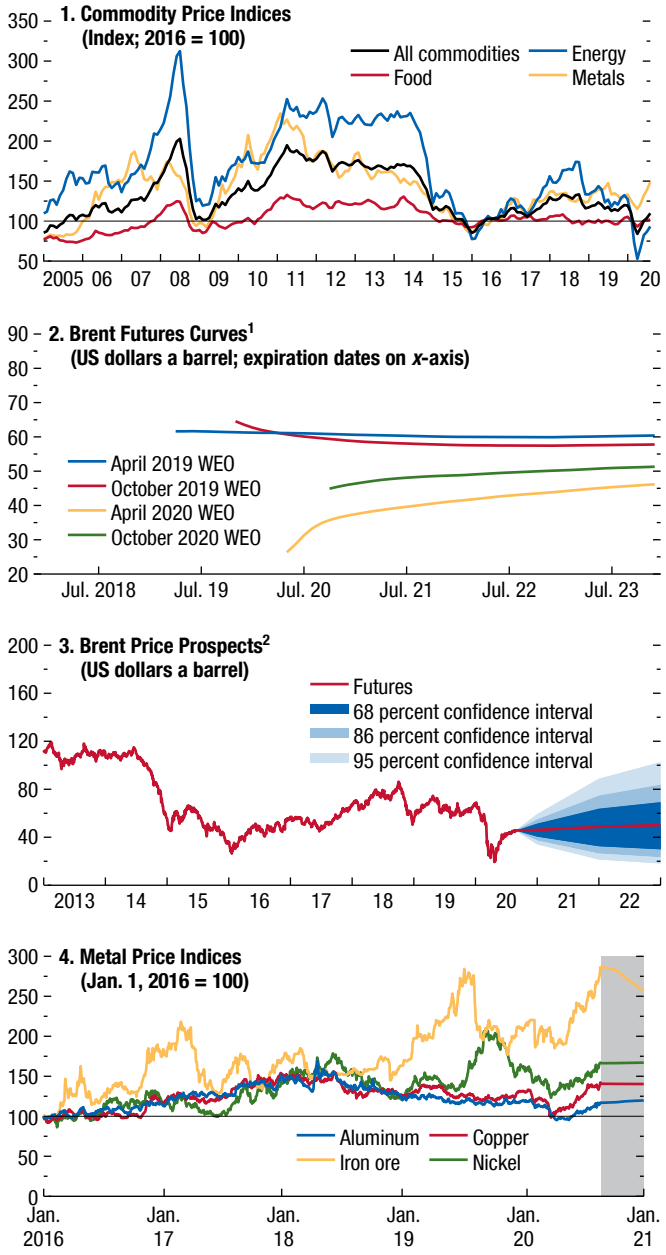
Despite heightened volatility, the IMF's primary commodity price index remained broadly stable between February and August 2020, the respective reference periods for the April 2020 and October 2020 WEOs (Figure 1.SF.1, panel 1). This reflects two distinct phases: between February and April the index fell by 24 percent as the COVID-19 pandemic intensified; between April and August the index recovered by about 31 percent, as many countries eased lockdown measures and economic activity resumed. The rebound, however, has varied across commodities, depending on conditions in end-use sectors and regions affected by the outbreak and on the storability and supply elasticity of a commodity. Prices of energy and some agricultural raw materials rebounded later than metals' prices. Food prices were less affected, even though changes were widely dispersed across agricultural commodities. This special feature also includes an in-depth analysis of coal.

Energy Prices Recovered after April

Oil prices declined by 60 percent between February and April 2020 as the pandemic led to a collapse in global oil demand and concerns about storage capacity (see Figure 1.SF.2). In March OPEC+ (Organization of the Petroleum Exporting Countries, including Russia and other non-OPEC oil exporters) could not agree on supply cuts to restore order to the market, but as the oil price fall intensified, in mid-April the cartel decided to curb production by 9.7 million barrels a day in May and June (later extended until July) by 7.7 million barrels a day until December 2020 and by 5.8 million barrels a day until April 2022. US crude oil producers were also hurt as the front-month futures price for the West Texas Intermediate blend briefly went to –$37 in April. Protracted low oil prices led to shut-ins, sharply reduced drilling activity, and a surge in US shale producer bankruptcy filings. This resulted in an unprecedented 2 million barrel a day decrease in US crude oil production in May 2020.

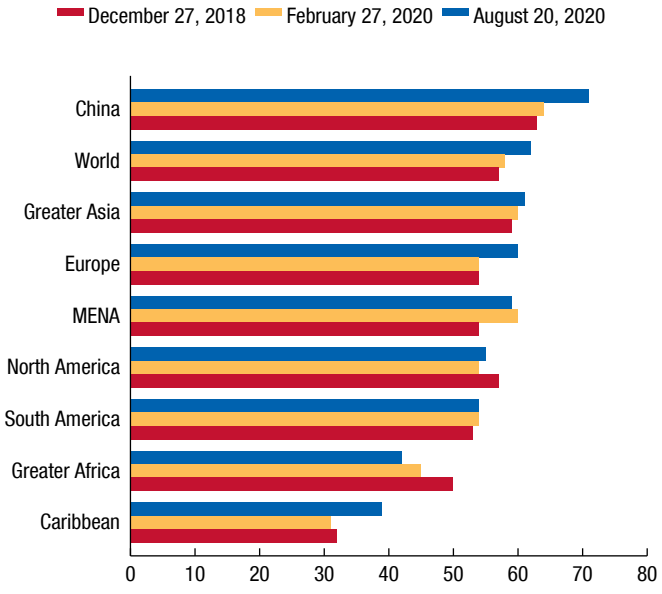
Thanks to supply reductions, from late April onward, oil prices recovered from the mid-$10s to more than $40 a barrel by early June, but into August they remained about $25 below early January prices. As a result, many oil firms have suffered large losses,

Figure 1.SF.1. Commodity Market Developments



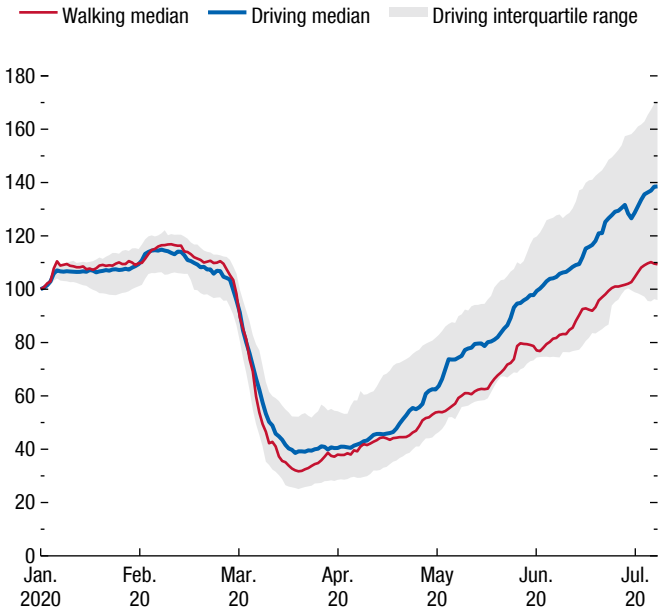
Sources: Bloomberg Finance L.P.; IMF, Primary Commodity Price System; Refinitiv Datastream; and IMF staff estimates.
Note: WEO = *World Economic Outlook.*
[1]WEO futures prices are baseline assumptions for each WEO and are derived from futures prices. October 2020 WEO prices are based on August 21, 2020, closing.
[2]Derived from prices of futures options on August 27, 2020.

Figure 1.SF.2. Oil Storage Capacity Utilization Rates
(Percent)



Sources: URSA Space Systems; and IMF staff calculations.
Note: MENA = Middle East and North Africa. Countries and regions as defined by URSA.

Figure 1.SF.3. Global Driving and Walking Mobility Indices
(Index; Jan. 13, 2020 = 100)



Sources: Apple; and IMF staff calculations.
Note: Data are the seven-day moving average of Apple Mobility Indices.

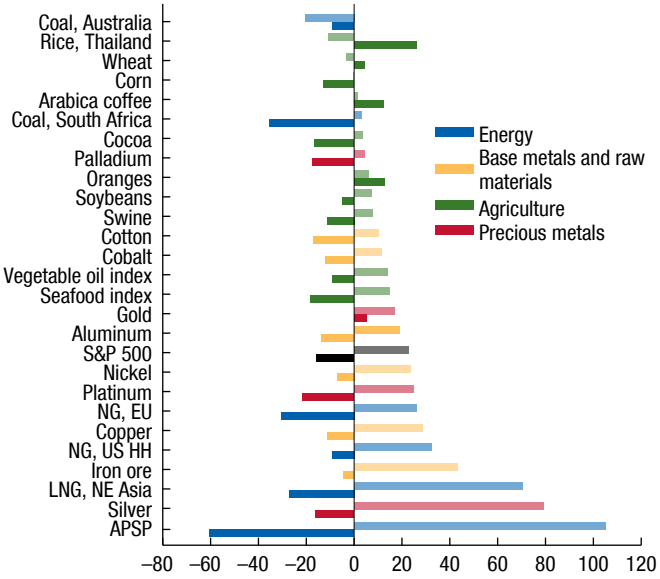
massive layoffs, and asset write-downs as they reassess price outlooks and investments.

On the demand side, the COVID-19 outbreak drove oil prices sharply down as travel restrictions strongly reduced global demand for liquid fuels in the first half of 2020. On one hand, road traffic has recovered in many countries (see Figure 1.SF.3); on the other hand, air traffic volume—especially international flights—remains subdued. As a result, the International Energy Agency expects oil demand for this year to be down by 8.1 million barrels a day, to 91.9 million barrels a day, and to rebound by 5.2 million barrels a day in 2021—a significant revision up from –9.3 million barrels a day for 2020 in its April forecast.

In the natural gas market, spot prices have hovered around record lows in recent months amid large inventories left in place after a mild winter, weak demand, and subdued oil prices. This led oil producers to burn off large amounts of unwanted natural gas as a byproduct of oil extraction—equivalent to 400 metric tons of carbon dioxide (CO_2) in 2019, the most since 2009, according to the World Bank. In late August natural gas prices increased due to an expected rise in winter demand, supply uncertainty in Asia, and technical trading patterns. Competing with natural gas for electricity generation, coal has also experienced significant downward price pressure, although supply disruptions in South Africa and strong demand from Indian industrial buyers supported South African coal prices, while Australian prices have been depressed by China's apparent tightening of import restrictions and by Japan's intention to phase out inefficient coal-fired power plants by 2030 (see the section on coal).

As of early September, oil futures contracts indicate that Brent prices will increase to $50 by the end of 2023, highlighting near-term demand concerns (Figure 1.SF.1, panel 2). Baseline assumptions, also based on futures prices, suggest average annual prices of $41.7 a barrel in 2020—a decrease of 32 percent from the 2019 average—and $46.7 a barrel in 2021 for the IMF's average petroleum spot prices. Currently, the oil market is characterized by elevated uncertainty as the COVID-19 pandemic is not yet under control (Figure 1.SF.1, panels 2 and 3). Risks, however, are broadly balanced. Upside risks to prices include escalating geopolitical events in the Middle East and faster containment of the pandemic as well as excessive cuts in oil and gas upstream investments and further bankruptcies in the energy sector. The biggest downside risk is a renewed slowdown in global economic

Figure 1.SF.4. Commodity Prices during the COVID-19 Pandemic
(Percent)



Sources: Argus; Bloomberg L.P.; IMF, Primary Commodity Price System; Thomson Reuters Datastream; and IMF staff calculations.
Note: Dark fill sections represent the percent change in commodity prices for February–April 2020, while light fill sections represent the percent change for April–August 2020. APSP = Average petroleum spot price; AU = Australia; EU = Europe; HH = Henry Hub; LNG = liquefied natural gas; NE = northeast; SA = South Africa; US = United States.

activity as large inventories remain a concern. Other downside risks for oil prices include stronger oil production growth in several non-OPEC+ countries, a faster normalization of Libya's oil production, and a breakdown of the OPEC+ agreement. In the medium and long term, global policy actions to lower CO_2 emissions present a further downside risk to oil demand (see Box 1.SF.1).

Metal Prices Recovered amid an Uncertain Economic Outlook

Base metal prices increased by 18.2 percent between February and August 2020. Slow global industrial activity weighed heavily on prices in the first quarter of 2020 (see Figure 1.SF.4). Since then, supply disruptions in mining related to COVID-19 and a resurgence in industrial activity in China—which accounts for half of base metal demand—have helped metal prices return to pre-pandemic levels. Unprecedented stimulus measures and a stock market surge also boosted sentiment toward metals. Precious metal prices continued to rise due to increasing demand for safe-haven assets amid concerns that a second wave of COVID-19 infections would cause protracted monetary policy stimulus.

Among base metals, iron ore prices increased the most between February and August, by 37.0 percent, reaching a year high, while copper prices increased by 14.4 percent amid growing optimism over China's economic recovery, falling inventories, and supply disruptions in key producing countries (Chile and Peru). Aluminum (+3.0 percent), whose supply has been more insulated from the pandemic as it is mostly sourced domestically, did not rally as global automotive sales slumped. The price of nickel and cobalt, key inputs for stainless steel and batteries in electric vehicles, increased by 14.6 percent and fell by 1.9 percent, respectively.

The IMF annual base metal price index is projected to increase by 0.8 percent on an annual average basis in 2020 and by a further 3.0 percent in 2021 on concerns surrounding the long-term impact of the pandemic. The possibility of a second wave of COVID-19, the sustainability of strong China demand, and tensions between China and the United States are the major risks to metal prices falling. These more than offset the risk of supply disruptions in major metal-producing countries. The precious metals index is expected to increase by 28.4 percent in 2020 and by 10.4 percent in 2021 due to the effects of heightened global uncertainty and continued accommodative monetary policies.

Food Prices Declined amid Ample Global Supplies

The IMF's food and beverage price index increased by 0.7 percent, reflecting pandemic-induced changes in demand and supply conditions, with different effects on food prices depending on the region and the agricultural commodity. As COVID-19 slowed economic activity, demand for agricultural raw materials and animal feed initially declined. Prices of most staple crops, including wheat, maize, soybeans, and palm oil, have been stable or have declined since the beginning of the pandemic due to large global supplies and the initial collapse of crude oil prices (see Figure 1.SF.4).

Led by pork, the meat price index fell by 7.1 percent from the April baseline. Amplified by large seasonal farm supply, wholesale pork prices declined by 4.5 percent as several meat processing facilities in the United States closed after employees were infected

by the coronavirus. The resulting drop in processing capacity reduced supply to retail channels and drove a wedge between wholesale and retail prices, which generally increased.[1] The wholesale price decline spilled over to other meats and seafood, which saw similar downward trends.

Staple food prices, such as for wheat and rice rallied, initially driven by consumer stockpiling, but, given ample supply, as the initial surge in demand passed, prices retrenched. Overall, though, the price of rice is still up by 12.6 percent. Corn prices plummeted by 13.0 percent on ethanol demand destruction, with prices reaching a 10-year low in May. Soybean prices declined by 13.0 percent beginning in February on account of ample global supplies, nothwithstanding the fact that China ramped up buying in June as part of the 2020 US-China trade deal.

Food prices are projected to increase slightly, by 0.4 percent year over year in 2020 and then increase 4.3 percent in the year thereafter on tighter supply conditions (meats, for example), in part related to expected delays in the supply chain. Further supply chain disruptions and export restrictions in large food exporters are a significant source of upside risk. Renewed tensions between the United States and China could disrupt food trade and lower US food prices while increasing them in competing exporters.

Coal: Past, Present, and Future

Many countries are taking steps to reduce their dependence on fossil fuels, especially coal, as they seek to pursue a more sustainable future. Because of its high carbon intensity, coal accounts for just under half of global CO_2 emissions and nearly three-quarters of all power sector CO_2 emissions. In the absence of pollution mitigation systems, it contributes to local air pollution, with potentially severe damaging effects on human health (Smith, Mehta, and Maeusezahl-Feuz 2004). The unprecedented drop in electricity demand in 2020 favored renewables over traditional fossil fuel sources, such as coal and natural gas. In Europe, where electricity consumption fell by more than 10 percent in April, the share of coal (fossil fuels) in power generation declined to below 8 (30) percent—a historical low. As electricity demand recovered, use of coal resumed globally.

So why is coal still popular if it has large negative externalities? Which economies and economic sectors are most dependent on coal? Some countries moved away from coal in the past. How did they do it, and is this replicable? Will the pandemic speed or slow the demise of coal? These questions are explored by looking at the use of coal throughout history, until the recent pandemic, and its trends in production and consumption across countries.

Coal Usage, Industrialization, and Energy Transition to Fossil Fuels

The Heydays

The use of coal took off during the industrial revolution in 18th century England and then spread to continental Europe and the United States during the 19th and 20th centuries. A series of technological innovations (including the steam engine and coal-fueled furnaces for steel production) radically transformed manufacturing, coal mining, and transportation (for example, steam locomotives and steamships). This spurred rapid economic growth, industrialization, and urbanization, which drastically increased demand. The transition to coal in Europe also helped reverse a pattern of excessive deforestation from centuries of intensive wood harvesting—a major energy transition that saw industrial economies moving away from biomass (that is, wood fuel).[2,3] Hence, until the early interwar period, coal consumption and its share in the energy mix grew unabated in almost every country.

Decline and Renaissance

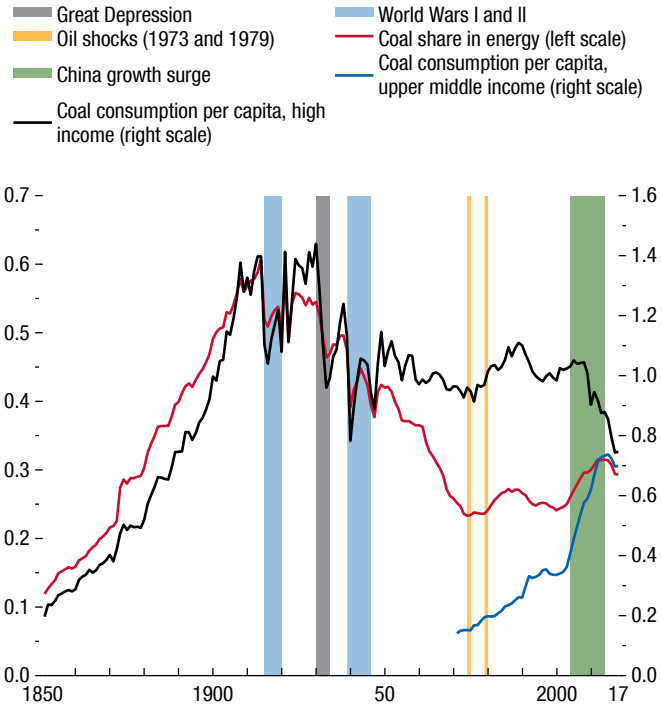
During the 1930s and especially after World War II cleaner fossil fuel alternatives—such as oil and, later, natural gas—increasingly displaced coal in the transportation, residential, and commercial sectors and even in power generation (Figure 1.SF.5). Coal, especially the low-grade sulfurous variety, was cheap but a major

[1]The harmonized consumer price subindex for food and nonalcoholic beverages, for instance, increased by 4.5 percent between February and June in the United States and by 1.3 percent in the euro area. In China, on the other hand, the food consumer price subindex fell by 9.7 percent.

[2]Indeed, forest cover in Europe today is higher than it has been in a century (Fuchs and others 2015). Afforestation notwithstanding, primeval forests in western Europe are extremely rare. For a vivid depiction of a preindustrial Italian forest, see "Hunting in the Pontine Marshes" by Horace Vernet (1833).

[3]Similarly, the rise of the American oil industry in the 19th century helped save several whale species from extinction as kerosene lamps quickly displaced whale oil lamps and candles in the 19th century.

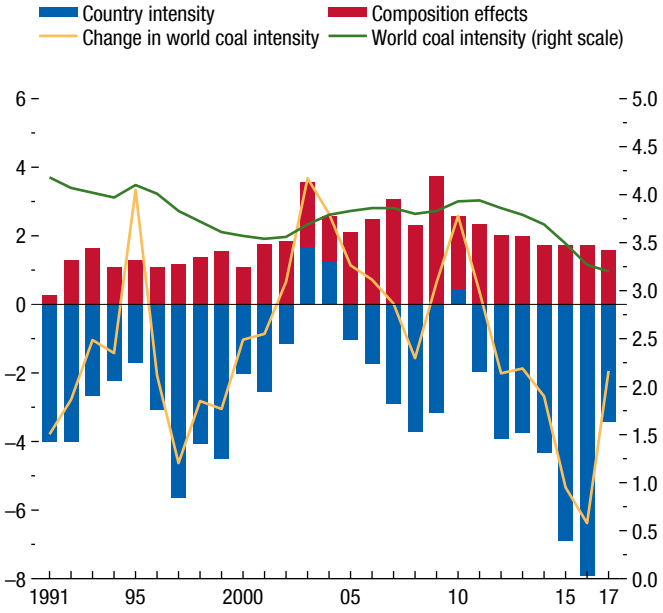
Figure 1.SF.5. Coal, 1850–2017



Sources: B.R. Mitchell; Maddison Project Database (2018); United Nations; and IMF staff calculations.
Note: China growth surge is defined as the years between 2003 and 2011, when annual GDP growth exceeded 12 percent, except in 2009. Income categories are as defined by the World Bank.

Figure 1.SF.6. Decomposition of Change in World Coal Intensity

(Percent)



Sources: International Energy Agency; World Bank, *World Development Indicators*; and IMF staff calculations.

cause of air pollution and environmental damage.[4] Hence, per capita coal consumption, and especially the coal share in the energy mix, declined rapidly—and was further pushed down by the expanding motor vehicle industry's thirst for gasoline.

That coal decline was surprisingly interrupted in the 1970s and then partially reversed by three significant factors (Figure 1.SF.5): (1) energy security concerns (because of the twin oil shocks of the 1970s), (2) the growing electrification of energy end-uses, and (3) fast economic growth in emerging markets. The combination of (1) and (2) contributed to increased demand for coal for power generation in many advanced economies that wanted to reduce dependence on oil because of energy security concerns.[5] Later, at the turn of the century, as economic growth shifted to markets with higher coal intensity (that is, coal consumption per unit of GDP) and income elasticity of coal demand (such as China and India), coal demand in emerging markets surged, more than offsetting declining coal usage in advanced economies.[6] As a result, global per capita coal consumption, its energy share, and even coal intensity increased again: the coal renaissance (Figure 1.SF.6).

Today, the top five coal-consuming countries (China, India, United States, Russia, Japan) account for 76.7 percent of global coal consumption (Figure 1.SF.7). China accounts for about half of global coal consumption after industrial and power generation coal demand grew particularly fast in the mid-2000s following an infrastructure boom. In fact, today, driven by China, emerging markets, where industry coal demand is still important, account for the lion's share—76.8 percent—of coal consumption. Globally, industry takes about 20 percent of total coal consumption (Table 1.SF.1).

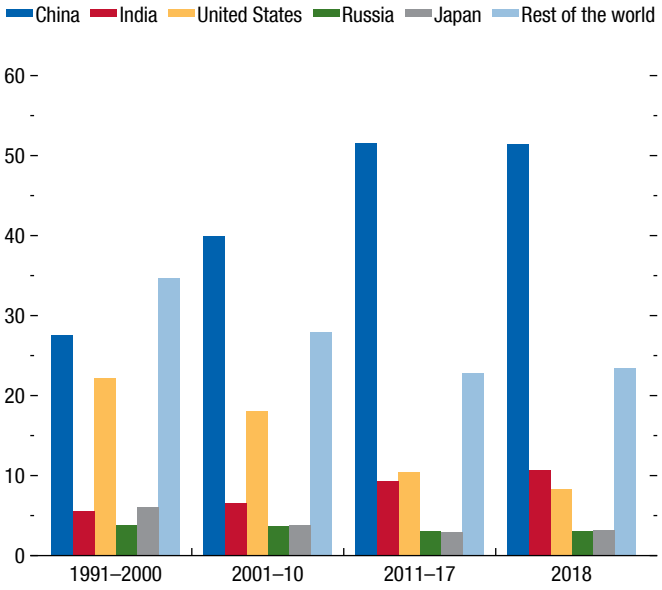
In advanced economies, coal demand is predominantly associated with power generation because of the decline of

[4]During the Great Smog of London (December 5–9, 1952), due to weather conditions, air pollutants from the combustion of coal and diesel-powered buses for public transportation covered the city in a blanket of smog. UK government medical reports estimate that 4,000 people died as a direct result of the smog and 100,000 more were made ill.

[5]The share of coal in energy troughed in 1973, globally.

[6]China and India increasingly relied on coal to satisfy their rising energy needs as economic activity accelerated (Steckel, Edenhofer, and Jakob 2015).

Figure 1.SF.7. Coal Consumption, by Country
(Percent)



Sources: International Energy Agency, *World Energy Balances*; and IMF staff calculations.

Table 1.SF.1. Coal Consumption, by Sector
(Percent)

	OECD	Non-OECD	Total
Power Generation	20.1	50.7	70.8
Industry	2.2	19.4	21.6
Others	0.9	6.7	7.6
Total	23.2	76.8	100.0

Sources: International Energy Agency; and IMF staff calculations.
Note: "Others" consist of residential and commercial and nonenergy use.
OECD = Organisation for Economic Co-operation and Development.

coal-intensive industries, such as steel and cement. Given that the electrification of economic systems is ongoing, energy demand from power generation is expected to increase in advanced economies, where total energy demand is flattening.[7] Whereas no significant economical alternatives to coking coal exist in the industrial sector (for example, in making steel and cement), low-carbon alternatives compete with coal for investment in new power plants. This is more relevant in emerging markets, where power generation capacity is expected to grow the most.

Coal's Negative Externalities: Health, Environment, and Carbon Emissions

Coal-fired thermal power plants release several substances—including sulfur dioxide, nitrogen oxide, particulate matter, and mercury—into the air and rivers, streams, and lakes. These emissions are hazardous to human health (toxins) and degrade the environment (pollutants).[8] Air pollution from the combustion of coal and other fossil fuels was long considered the most serious environmental problem in advanced economies.[9] In Europe and the United States, for example, regulations were rolled out beginning in the 1980s and 1990s to incentivize the adoption of environmental pollution mitigation technologies, such as scrubbers, thereby curtailing emissions from coal plants.[10] Other countries decided to (slowly) steer away from the use of coal altogether, with nuclear, hydropower, natural gas, and—more recently—renewable energy slowly displacing coal.

Though steps have been taken to mitigate coal's direct environmental impact, the combustion of coal also emits CO_2. Coal is more carbon intense than any other primary energy fuel. This means that replacing coal with other energy sources decarbonizes the energy system, and the degree to which that happens depends on the substitute. To rank energy sources by carbon intensity, their emission factors can be compared, expressed in tons of CO_2 per unit of electricity generated, which considers both the intrinsic carbon intensity of the fuel per unit of energy and the average efficiency of the generation technology. When burned to generate both heat and electricity, coal is 2.2 times as carbon intense as natural gas—the only realistic fossil fuel alternative in the power sector (Figure 1.SF.8). With its high emission factor and large share in world energy consumption, coal contributes about 44 percent of all CO_2 emissions and 72 percent of all power sector emissions (Figure 1.SF.9).[11]

[7]There has been a steady increase in the role of electricity as energy service provider. In 2017 power generation accounted for about 41 percent of total energy demand, up from 26 percent in 1971.

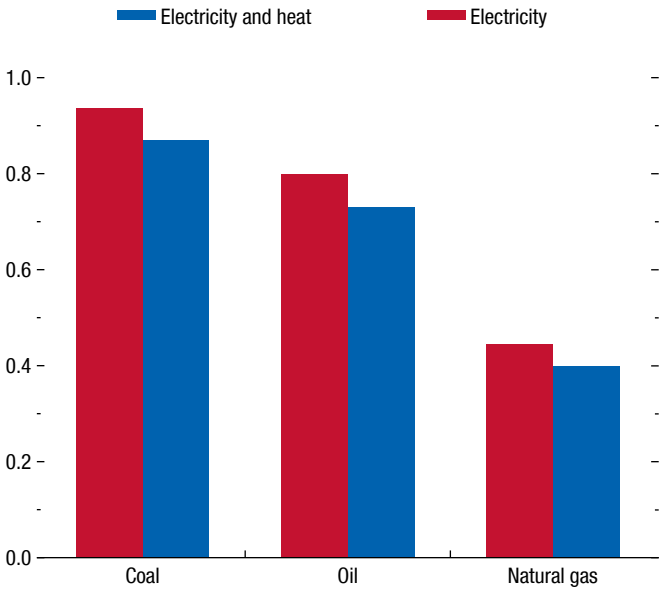
[8]Emissions from coal combustion can damage the respiratory, cardiovascular, and nervous systems of the human body (Smith, Mehta, and Maeusezahl-Feuz 2004).

[9]According to Fouquet (2011), by 1880 the mining, transportation, and combustion of coal in the British economy had imposed external damages close to 20 percent of GDP.

[10]An important milestone in this context has been the United Nations Convention on Long-Range Transboundary Air Pollution, the first treaty to deal with air pollution on a regional basis, which entered into force in 1983.

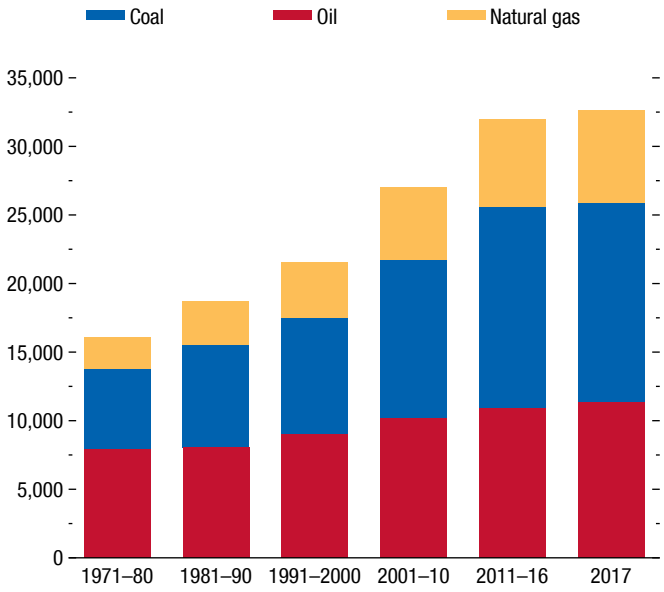
[11]According to the International Energy Agency, the share of energy in total greenhouse gas emissions was 74.2 percent in 2015. The remainder constitutes greenhouse gas emissions from agriculture, deforestation, and land conversion more broadly.

Figure 1.SF.8. Emission Factors
(Metric tons of carbon dioxide a megawatt-hour)



Sources: International Energy Agency; and IMF staff calculations.

Figure 1.SF.9. Average Annual Carbon Dioxide Emissions
(Metric tons of carbon dioxide)



Sources: International Energy Agency; and IMF staff calculations.

How Fast and When Do Countries Lessen Their Dependence on Coal?

With the introduction and rise of new energy sources, especially after World War II, the energy mix in many countries broadened and they became less dependent on coal. Currently, per capita coal consumption has already peaked in 73 out of the 84 countries whose share of coal in total energy consumption at some point crossed 5 percent. Irrespective of their absolute dependence reached at peak consumption, the average annual decline across these countries was 2.3 percent between 1971 and 2017 (Figure 1.SF.10). This implies that it takes, on average, 43 years to phase out coal after the peak in coal consumption per capita has been reached.

Contrasting the energy mix of countries across income groups reveals stark differences (Table 1.SF.2). Poor countries rely primarily on biomass for their energy needs, while middle-income countries have a strong dependence on coal.[12] At high incomes, the coal share in energy decreases as nuclear and natural gas options grow.

The quality ladder hypothesis may help explain the observed relationship between income and the energy mix. The hypothesis states that as income rises, energy sources are chosen not just for affordability and availability but increasingly for their efficiency, convenience, low environmental impact, and safety.[13] Biofuels occupy the low rungs of that ladder; coal, oil, and hydro the middle rungs; and capital-intensive sources, such as nuclear, natural gas, and renewables, the upper rungs. The low price of coal-fired power generation (Figure 1.SF.11) is consistent with the notion that coal plays an important role in the energy mix of lower-middle- and upper-middle-income countries as an affordable and often abundant energy source (Table 1.SF.2).[14,15] Country-specific endowments of competing energy sources, such as hydropower potential, could also influence the attractiveness of coal during different stages of development.

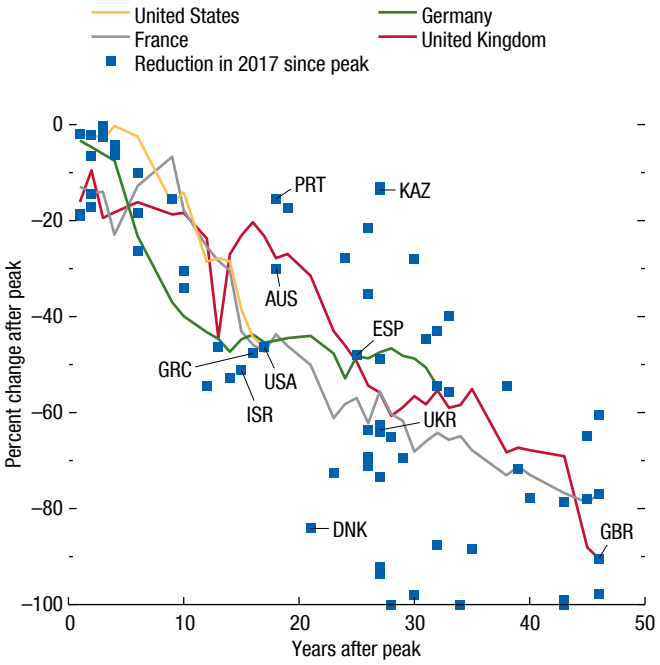
[12]See the relationship between income level and biomass consumption in Chapter 1 of the October 2018 WEO.

[13]See Stokey (1998) for a theory model on demand for environmental quality.

[14]Even today, the marginal cost of operating a coal-fired power plant is one of the lowest. The cost of wind and solar has substantially declined at the plant level, but a full ramp-up of renewables in the electricity grid faces decreasing returns due to their intermittency.

[15]A common way to compare alternative options for electrical energy production is the levelized cost of electricity, which is defined as the present value of the price of the produced electrical energy (usually expressed in units of cents per kilowatt-hour), considering the economic life of the plant and the costs incurred in the construction, operation and maintenance, and fuel costs.

Figure 1.SF.10. Coal Phaseouts



Sources: International Energy Agency; and IMF staff calculations.
Note: For each country, coal peak is defined as the year with the highest coal consumption per capita. Blue square = coal consumption per capita reduction in 2017 since peak. Coal phaseout paths for selected countries are shown in the figure. Data labels use International Organization for Standardization (ISO) country codes.

Empirical Analysis

A panel regression is used to test for the relationship between income per capita and coal dependence, which is defined as the share of coal in total primary energy supply (*relative* coal dependence) or as coal consumption per capita (*absolute* coal dependence). The analysis controls for country-specific factors, including the share of manufacturing in nominal value added, coal reserves per capita, and hydropower potential (see Online Annex I, available at www.imf.org/en/Publications/WEO, for a more detailed discussion).

Results strongly support the presence of an inverse U-shaped relationship between income and the share of coal in the energy mix, with coal attaining its maximum share at an income level of $9,600 per capita—that is, when a country reaches upper-middle-income status. For example, our main specification predicts that, between 1971 and 2017, income per capita contributed to reductions in the coal share of 6.4 percentage points in the United States and 5.2 percentage points in Japan and to increases of 12.2 percentage points in India and 11.3 percentage points in China.

Results also show that energy endowments, such as hydropower and coal reserves, play a quantitatively important role—more so than manufacturing and environmental regulation, for which modest effects are found. Harsher winters are also associated with higher use of coal.

Like the relationship between the coal share and income, the relationship between coal consumption per capita and income is highly nonlinear. The preferred specification shows an S-shape relationship with income per capita: at low income levels, coal consumption growth accelerates, reaches its maximum at the middle income level, and then levels off. The turning point of absolute coal dependence, after which coal consumption declines, ranges from $35,000 to $39,000.

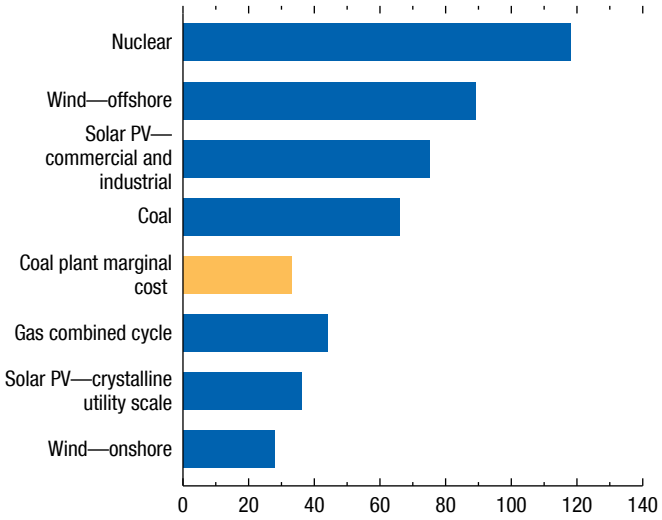
Contrasting the turning points of the two different measures of coal dependence leads to the finding that the "share (or relative) turning point" occurs before the "per capita (or absolute) turning point." At middle and high income levels coal is indeed increasingly succeeded by faster-growing and higher-quality fuels, such as oil, nuclear, and natural gas, *causing* its share in the energy mix to decline. However, coal consumption per capita continues to grow after that (albeit at a slower pace than some other energy sources) to satisfy fast-growing energy demand. Assuming income per capita growth of 4 percent a year, it takes another 33 years to get from the share turning point to the

Table 1.SF.2. Energy Mix, by Income Groups, 2017
(Percent)

Primary Energy Share from:	Biomass	Coal	Crude Oil	Natural Gas	Hydropower	Renewables	Nuclear
Low-Income Countries	80.8	2.3	13.3	0.9	2.8	1.6	0.0
Lower-Middle-Income Countries	26.2	26.9	26.6	14.4	1.8	2.3	1.8
Upper-Middle-Income Countries	5.2	40.9	25.0	21.5	3.4	1.4	2.5
High-Income Countries	5.7	15.8	36.6	29.0	2.1	1.6	9.2
World	12.9	28.0	29.9	23.3	2.6	1.6	1.6

Sources: International Energy Agency; World Bank; and IMF staff calculations.
Note: Income groups as defined by the World Bank.

Figure 1.SF.11. Levelized Cost of Electricity for New Investment, 2019
(US dollars a megawatt-hour)



Source: Lazard 2019.
Note: Based on lower range of Lazard *Levelized Cost of Energy Comparison—Unsubsidized Analysis* estimates. Yellow bar represents the midpoint of the marginal cost of operating an existing coal power plant. PV = photovoltaic.

Table 1.SF.3. Selected Recent Fast Coal Phaseouts

Country	Year	Five-Year Reduction (Percent)	Starting Share (Percent)	Mostly Replaced by
United Kingdom	2018	–12.4	17.0	Natural Gas
Israel	2018	–9.4	29.8	Natural Gas
Greece	2018	–8.9	29.9	Natural Gas
Kazakhstan	2016	–8.1	51.3	Natural Gas
Spain	2010	–6.8	12.8	Mixed
Australia	2014	–6.5	39.7	Natural Gas
Portugal	2010	–6.3	13.5	Natural Gas
China	2017	–6.2	69.7	Mixed
Denmark	2018	–5.9	15.7	Biofuel
Ukraine	2017	–5.8	35.8	Nuclear
United States	2018	–5.3	19.6	Natural Gas

Sources: International Energy Agency; and IMF staff calculations.
Note: "Mixed" is natural gas, nuclear, and renewables.

per capita turning point. These findings are consistent with the idea that new energy fuels only slowly displace old energy fuels.

Combining estimates of the average speed of decline and the estimated time interval between the peaks in relative and absolute coal dependence, it takes, on average, 76 years to phase out coal once it reaches its largest share in the energy mix. For the United Kingdom, which is on the verge of eliminating coal, it took almost 100 years to accomplish that feat (Figure 1.SF.10). For China, whose coal share peaked in 2013, it implies at least another 38 years of coal consumption under business-as-usual conditions. Still, the United Kingdom shows the relevance of policy actions, stimulated by the introduction of carbon pricing at the utility level; the United Kingdom experienced one of the fastest declines in coal usage between 2013 and 2018 as coal was replaced by natural gas (Table 1.SF.3).[16] In the United States, instead, a similar, but more modest, decline was driven by market forces as the shale gas revolution pushed down natural gas prices. The fastest recent transitions away from coal have been driven by natural gas, at times helped by renewables (Table 1.SF.3).

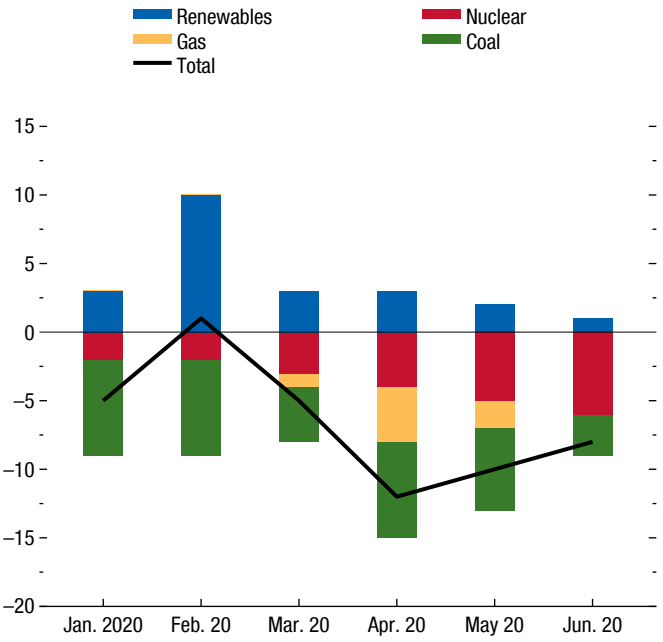
Unsurprisingly, the COVID-19 pandemic has led to a sharp reduction in coal consumption in many coal consumer countries (see Chapter 3). Given that renewables' marginal costs are extremely low, natural gas and coal accounted for most of the decline in electricity generation leading, in some regions, to record-high renewables shares in electricity production (Figure 1.SF.12). However, it is too early to declare "mission accomplished." First, the downward pressure on natural gas prices was even stronger than on coal, in part because of lack of storage for natural gas (Figure 1.SF.13). Second, where electricity demand recovered, coal usage resumed.

These considerations and the previous examples and econometric analysis suggest that a full coal phaseout will occur long after low-carbon energy sources start to gain importance in the energy mix. There are two main reasons for this persistence. First, industrial use of coal is hard to replace with other energy sources and still represents 33 percent of coal consumption in emerging markets, where most industrial sector coal usage is concentrated. Second, and most important, coal-fired power plants are long-lived assets with a minimum design lifespan of 30–40 years. This makes the obsolescence rate of a recently built coal-fired power plant very low without either large changes in the levelized cost of electricity for renewables or policy intervention.

The pandemic and its effects on economic activity are changing the medium-term outlook for coal and coal-fired power plants in various ways but, overall,

[16]In 2013 the United Kingdom became the first country in the European Union to introduce a carbon price support—a tax paid by companies that generate electricity from fossil fuels that tops Europe's emissions trading system, through which energy companies buy permits to emit carbon dioxide. The tax was initially set at £9 a metric ton of CO_2 and gradually doubled to £18.

Figure 1.SF.12. Contribution to European Electricity Generation Growth
(Year over year, percent)



Source: EMBER.
Note: Data represent the 27 member countries of the European Union.

Figure 1.SF.13. Coal and Natural Gas Prices in 2020
(January 2–15 = 100)

Sources: IMF, Primary Commodity Price System; and IMF staff calculations.
Note: Coal index is the simple average of Australian and South African coal prices. Natural gas index is the simple average of Netherlands Title Transfer Facility and Asian liquefied natural gas prices.

the impact is unclear. On one hand, if the reduction in electricity demand turns out to be more permanent, this would likely reduce the utilization of existing coal-fired power plants, encouraging their closure, especially in advanced economies. On the other hand, in emerging markets, even if electricity demand does not fully recover to trends before the pandemic, it is still expected to grow strongly. A possible reduction in coal prices, coupled with lower wholesale electricity prices, may slow investment in renewables, to the benefit of coal, in the absence of policy intervention.

Finally, it is worth noting that, in contrast to studies examining total energy consumption, a large part of the variation in coal dependence is unexplained.[17] In part, this may reflect political economy factors leading to cross-country differences in energy policies. In some countries the value of coal reserves is multiples of GDP, raising the risk of stranded coal assets. Strong domestic mining interests in large coal consumer and producer countries, especially in Asia, including China and India, may further complicate and delay the phaseout of coal in major coal consumer-producer countries (see Online Annex II for more detailed discussion).

[17]See the Commodity Special Feature of the October 2018 WEO for an analysis of energy demand.

Conclusions

Reducing carbon emissions from coal would go a long way toward fighting climate change. Furthermore, decarbonization of the power generation sector would amplify the benefits of a global transition to electric vehicles and electric mobility more broadly—given that electric vehicles would be charged with low-carbon electricity.

Moving away from coal usually starts in high-income nations and takes decades to complete. The pandemic may have dented coal consumption but, probably, only temporarily. Moreover, countries that have recently, or not yet, seen per capita coal consumption peak (including China, India, and Indonesia) account for the lion's share of global coal consumption, which will therefore take years to decline in the absence of significant policy actions. Further significant reductions in prices of low-carbon alternatives such

as solar and wind may help, but to avoid the intermittency problem associated with renewables, natural gas (the closest substitute for coal) is probably needed even if electricity demand does not fully recover to its pre-pandemic trend.

Although carbon-capture and storage technology may be a viable solution, in the absence of substantial carbon pricing, it is currently expensive to retrofit existing plants or build new coal plants with such technology (see IMF 2019 for a detailed analysis of the benefits of carbon pricing). Furthermore, some claim that the CO_2 emission opportunity costs of further investment in carbon capture and storage may be large, as proven technologies, such as wind and solar, can already be used to lower carbon emissions (see, for example, Jacobson 2020). It may be wise, however, to diversify and invest in multiple mitigation strategies, as the intermittency problem of renewables, especially for a high degree of grid penetration, remains unsolved and may still require coal for power generation in some locations.

The decline in coal could be accelerated if governments were willing to compensate the losers from a coal phaseout and see the COVID-19 pandemic as an opportunity to accelerate it. In emerging markets, the degree to which coal is locked in can be minimized if capital constraints are reduced to favor investment in renewables. The international community can provide financial and technical assistance (on how to build grids with the intermittent electricity generated by renewables) and limit funding of new coal plants, at least where alternatives are available.

Box 1.SF.1. What Happened with Global Carbon Emissions in 2019?

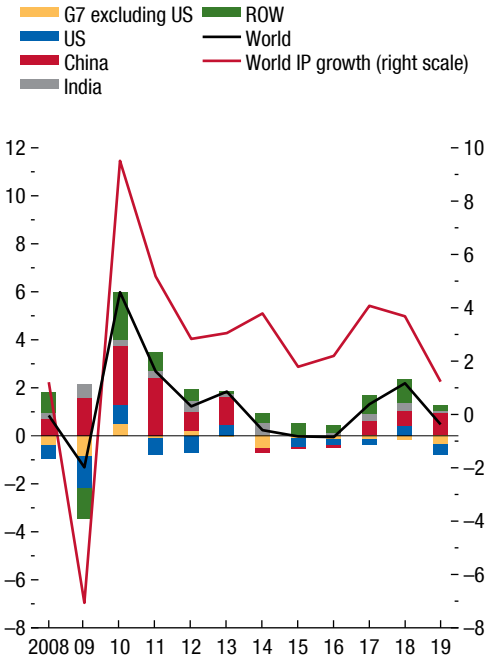
This box updates the assessment of global carbon emissions from the October 2019 *World Economic Outlook*. Latest data for the end of 2019 show that the growth in global carbon emissions fell to below 0.5 percent, after an alarming rebound in 2017 and 2018 of more than 2 percent (Figure 1.SF.1.1).

China remains a key driver of emission growth, and its impact picked up again in 2019, after a period of gradual regression. India and other emerging markets' contribution in 2019 fell substantially, and emissions decreased in all Group of Seven economies.

The decline in global emissions in 2019 can be attributed mainly to a fall in energy intensity and lower income growth (Figure 1.SF.1.2).[1] This is consistent with previous years and likely reflects the cyclical slowdown in global industrial production in 2019. Decarbonization remained an important mitigation force in 2019 as wind, solar, and natural gas continued to replace coal as the energy source of choice in the power sectors of all major emitters.

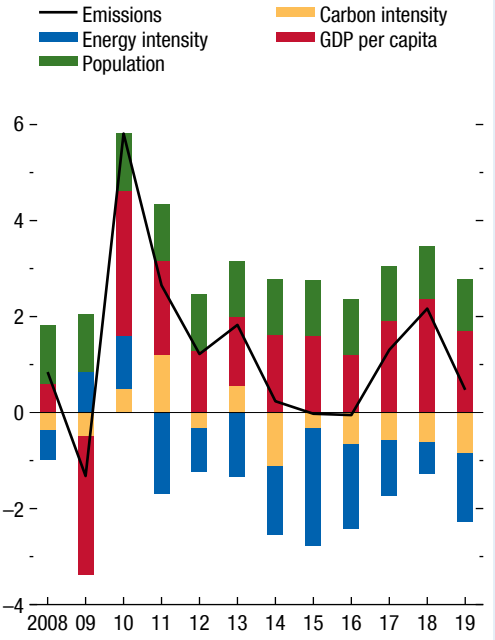
In 2020 the COVID-19 pandemic and associated lockdowns will likely lead emissions to fall, although most of the reduction will likely be short-lived when normal economic growth returns. Policymakers should thus seize the crisis as an opportunity to invest in greener growth that permanently lowers emissions (Georgieva 2020).

Figure 1.SF.1.1. Contribution to World Emissions, by Country/Region
(Percent change)



Sources: British Petroleum; International Energy Agency; and IMF staff calculations.
Note: G7 = Group of Seven (Canada, France, Germany, Italy, Japan, United Kingdom, United States); IP = industrial production; ROW = rest of the world; US = United States.

Figure 1.SF.1.2. Contribution to World Emissions, by Source
(Percent change)



Sources: British Petroleum; International Energy Agency; World Bank, *World Development Indicators*; and IMF staff calculations.

The authors of this box are Claire Li and Nico Valckx.

[1]The October 2019 *World Economic Outlook* shows that total emissions can be expressed as a product of carbon intensity (carbon emissions per unit of energy), energy intensity (energy per unit of GDP), GDP per capita, and human population.

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	
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Europe	**1.6**	**–7.0**	**4.7**	**3.0**	**2.0**	**2.4**	**2.1**	**1.7**	**1.9**	. . .	. . .	. . .
Advanced Europe	**1.4**	**–8.1**	**5.2**	**1.3**	**0.5**	**1.0**	**2.3**	**2.1**	**2.3**	**6.6**	**8.0**	**8.5**
Euro Area[4,5]	1.3	–8.3	5.2	1.2	0.4	0.9	2.7	1.9	2.4	7.6	8.9	9.1
Germany	0.6	–6.0	4.2	1.3	0.5	1.1	7.1	5.8	6.8	3.1	4.3	4.2
France	1.5	–9.8	6.0	1.3	0.5	0.6	–0.7	–1.9	–1.8	8.5	8.9	10.2
Italy	0.3	–10.6	5.2	0.6	0.1	0.6	3.0	3.2	3.0	9.9	11.0	11.8
Spain	2.0	–12.8	7.2	0.7	–0.2	0.8	2.0	0.5	0.9	14.1	16.8	16.8
Netherlands	1.7	–5.4	4.0	2.7	1.2	1.5	9.9	7.6	9.0	3.4	5.5	4.5
Belgium	1.4	–8.3	5.4	1.2	0.6	1.2	–1.2	0.0	–0.8	5.4	6.1	7.6
Austria	1.6	–6.7	4.6	1.5	1.2	1.8	2.6	2.4	2.5	4.5	5.8	5.5
Ireland	5.9	–3.0	4.9	0.9	–0.2	0.6	–11.4	5.0	5.5	5.0	5.6	6.2
Portugal	2.2	–10.0	6.5	0.3	0.0	1.1	–0.1	–3.1	–3.5	6.5	8.1	7.7
Greece	1.9	–9.5	4.1	0.5	–0.6	0.7	–2.1	–7.7	–4.5	17.3	19.9	18.3
Finland	1.1	–4.0	3.6	1.1	0.7	1.3	–0.5	–1.8	–0.7	6.8	8.4	8.6
Slovak Republic	2.4	–7.1	6.9	2.8	1.5	1.5	–2.9	–3.1	–4.1	5.8	7.8	7.1
Lithuania	3.9	–1.8	4.1	2.2	1.3	1.7	4.3	7.2	4.5	6.3	8.2	7.5
Slovenia	2.4	–6.7	5.2	1.6	0.5	1.8	5.7	4.5	3.9	4.6	8.0	6.0
Luxembourg	2.3	–5.8	5.9	1.7	0.4	1.4	4.5	3.8	4.3	5.4	6.5	7.0
Latvia	2.2	–6.0	5.2	2.7	0.6	1.8	–0.5	2.0	–0.8	6.3	9.0	8.0
Estonia	5.0	–5.2	4.5	2.3	0.2	1.4	2.6	4.0	2.0	4.4	7.8	6.1
Cyprus	3.2	–6.4	4.7	0.6	–0.6	1.0	–6.7	–10.6	–9.1	7.1	8.0	7.0
Malta	4.9	–7.9	4.8	1.5	0.8	1.1	9.6	7.6	8.3	3.6	4.2	4.2
United Kingdom	1.5	–9.8	5.9	1.8	0.8	1.2	–4.0	–2.0	–3.8	3.8	5.4	7.4
Switzerland	1.2	–5.3	3.6	0.4	–0.8	0.0	11.5	8.5	9.0	2.3	3.2	3.6
Sweden	1.3	–4.7	3.5	1.6	0.8	1.4	4.2	3.2	4.2	6.8	8.7	9.3
Czech Republic	2.3	–6.5	5.1	2.9	3.3	2.4	–0.4	–0.7	–0.5	2.0	3.1	3.4
Norway	1.2	–2.8	3.6	2.2	1.4	3.3	4.1	2.8	4.4	3.7	4.5	4.3
Denmark	2.3	–4.5	3.5	0.7	0.4	0.9	7.8	6.4	6.6	5.0	6.2	6.0
Iceland	1.9	–7.2	4.1	3.0	2.7	2.8	6.2	0.0	0.2	3.6	7.2	7.0
San Marino	1.1	–11.0	5.7	1.0	0.5	0.8	0.7	–4.5	–1.2	7.7	10.1	8.4
Emerging and Developing Europe[6]	**2.1**	**–4.6**	**3.9**	**6.6**	**5.2**	**5.2**	**1.4**	**–0.3**	**0.1**	. . .	. . .	. . .
Russia	1.3	–4.1	2.8	4.5	3.2	3.2	3.8	1.2	1.8	4.6	5.6	5.2
Turkey	0.9	–5.0	5.0	15.2	11.9	11.9	1.2	–3.7	–0.9	13.7	14.6	12.4
Poland	4.1	–3.6	4.6	2.3	3.3	2.3	0.4	3.0	1.8	3.3	3.8	5.1
Romania	4.1	–4.8	4.6	3.8	2.9	2.5	–4.6	–5.3	–4.5	3.9	7.9	6.0
Ukraine[7]	3.2	–7.2	3.0	7.9	3.2	6.0	–2.7	4.3	–3.0	8.5	11.0	9.6
Hungary	4.9	–6.1	3.9	3.4	3.6	3.4	–0.8	–1.6	–0.9	3.4	6.1	4.7
Belarus[7]	1.2	–3.0	2.2	5.6	5.1	5.1	–1.8	–3.3	–2.2	0.3	1.4	1.1
Bulgaria[5]	3.4	–4.0	4.1	2.5	1.2	1.7	4.0	1.9	2.3	4.2	5.6	4.5
Serbia	4.2	–2.5	5.5	1.9	1.5	1.9	–6.9	–6.4	–6.5	10.9	13.4	13.0
Croatia	2.9	–9.0	6.0	0.8	0.3	0.8	2.8	–3.2	–3.1	7.8	9.3	10.3

Source: IMF staff estimates.

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 A5 and A6 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, Moldova, Montenegro, and North Macedonia.

[7]See country-specific notes for Belarus and Ukraine in the "Country Notes" section of the Statistical Appendix.

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	
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Asia	**4.6**	**–2.2**	**6.9**	**2.7**	**2.5**	**2.5**	**1.8**	**1.8**	**1.3**	**. . .**	**. . .**	**. . .**
Advanced Asia	**1.2**	**–4.2**	**2.9**	**0.7**	**0.2**	**0.7**	**4.3**	**3.6**	**3.5**	**3.1**	**4.0**	**3.8**
Japan	0.7	–5.3	2.3	0.5	–0.1	0.3	3.6	2.9	3.2	2.4	3.3	2.8
Korea	2.0	–1.9	2.9	0.4	0.5	0.9	3.6	3.3	3.4	3.8	4.1	4.1
Australia	1.8	–4.2	3.0	1.6	0.7	1.3	0.6	1.8	–0.1	5.2	6.9	7.7
Taiwan Province of China	2.7	0.0	3.2	0.5	–0.1	1.0	10.7	9.6	9.8	3.8	3.9	3.8
Singapore	0.7	–6.0	5.0	0.6	–0.4	0.3	17.0	15.0	14.5	2.3	3.0	2.6
Hong Kong SAR	–1.2	–7.5	3.7	2.9	0.3	2.4	6.2	4.4	4.7	3.0	5.2	4.4
New Zealand	2.2	–6.1	4.4	1.6	1.7	0.6	–3.4	–2.0	–2.4	4.1	6.0	7.0
Macao SAR	–4.7	–52.3	23.9	2.8	1.7	1.8	34.8	–23.5	–6.7	1.7	2.3	2.0
Emerging and Developing Asia	**5.5**	**–1.7**	**8.0**	**3.3**	**3.2**	**2.9**	**0.6**	**1.0**	**0.3**	**. . .**	**. . .**	**. . .**
China	6.1	1.9	8.2	2.9	2.9	2.7	1.0	1.3	0.7	3.6	3.8	3.6
India[4]	4.2	–10.3	8.8	4.8	4.9	3.7	–0.9	0.3	–0.9	. . .	. . .	. . .
ASEAN-5	**4.9**	**–3.4**	**6.2**	**2.1**	**1.5**	**2.3**	**1.1**	**0.8**	**0.1**	**. . .**	**. . .**	**. . .**
Indonesia	5.0	–1.5	6.1	2.8	2.1	1.6	–2.7	–1.3	–2.4	5.3	8.0	6.8
Thailand	2.4	–7.1	4.0	0.7	–0.4	1.8	7.1	4.2	4.6	1.0	1.0	1.0
Malaysia	4.3	–6.0	7.8	0.7	–1.1	2.4	3.4	0.9	1.8	3.3	4.9	3.4
Philippines	6.0	–8.3	7.4	2.5	2.4	3.0	–0.1	1.6	–1.5	5.1	10.4	7.4
Vietnam	7.0	1.6	6.7	2.8	3.8	4.0	3.4	1.2	1.7	2.2	3.3	2.7
Other Emerging and Developing Asia[5]	**6.6**	**–1.7**	**7.8**	**5.3**	**5.3**	**5.4**	**–2.5**	**–3.4**	**–3.7**	**. . .**	**. . .**	**. . .**
Memorandum												
Emerging Asia[6]	**5.4**	**–1.7**	**8.0**	**3.2**	**3.1**	**2.8**	**0.7**	**1.1**	**0.4**	**. . .**	**. . .**	**. . .**

Source: IMF staff estimates.

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 A5 and A6 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	
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
North America	**1.9**	**–4.9**	**3.3**	**2.0**	**1.6**	**2.7**	**–2.1**	**–2.0**	**–2.0**	**. . .**	**. . .**	**. . .**
United States	2.2	–4.3	3.1	1.8	1.5	2.8	–2.2	–2.1	–2.1	3.7	8.9	7.3
Canada	1.7	–7.1	5.2	1.9	0.6	1.3	–2.0	–2.0	–2.4	5.7	9.7	7.9
Mexico	–0.3	–9.0	3.5	3.6	3.4	3.3	–0.3	1.2	–0.1	3.5	5.2	5.8
Puerto Rico[4]	2.0	–7.5	1.5	0.1	–1.6	0.6	. . .	. . .	. . .	8.3	12.0	11.5
South America[5]	**–0.2**	**–8.1**	**3.6**	**10.1**	**7.9**	**8.6**	**–2.3**	**–0.6**	**–0.7**	**. . .**	**. . .**	**. . .**
Brazil	1.1	–5.8	2.8	3.7	2.7	2.9	–2.8	0.3	0.0	11.9	13.4	14.1
Argentina	–2.1	–11.8	4.9	53.5	. . .	. . .	–0.9	0.7	1.2	9.8	11.0	10.1
Colombia	3.3	–8.2	4.0	3.5	2.4	2.1	–4.2	–4.0	–3.9	10.5	17.3	15.8
Chile	1.1	–6.0	4.5	2.3	2.9	2.7	–3.8	–1.6	–2.9	7.2	11.4	10.2
Peru	2.2	–13.9	7.3	2.1	1.8	1.9	–1.4	–1.1	–0.3	6.6	12.5	8.8
Venezuela	–35.0	–25.0	–10.0	19,906	6,500	6,500	8.4	–4.1	–4.1	47.6	54.4	57.3
Ecuador	0.1	–11.0	4.8	0.3	0.0	1.0	–0.1	–2.0	–0.1	3.8	8.1	5.6
Paraguay	0.0	–4.0	5.5	2.8	2.9	3.2	–1.0	–0.7	0.0	6.1	7.0	6.1
Bolivia	2.2	–7.9	5.6	1.8	1.7	4.1	–3.3	–2.6	–3.5	4.0	8.0	4.0
Uruguay	0.2	–4.5	4.3	7.9	10.0	8.2	0.6	–1.7	–3.3	8.9	9.7	9.0
Central America[6]	**3.2**	**–5.9**	**3.6**	**2.0**	**1.8**	**2.2**	**–1.2**	**–3.1**	**–2.9**	**. . .**	**. . .**	**. . .**
Caribbean[7]	**0.7**	**–5.4**	**3.9**	**4.2**	**7.1**	**7.8**	**–2.4**	**–9.9**	**–7.5**	**. . .**	**. . .**	**. . .**
Memorandum												
Latin America and the Caribbean[8]	0.0	–8.1	3.6	7.7	6.2	6.7	–1.7	–0.5	–0.8	. . .	. . .	. . .
Eastern Caribbean Currency Union[9]	2.8	–15.1	5.8	0.8	0.6	1.5	–7.7	–21.0	–20.5	. . .	. . .	. . .

Source: IMF staff estimates.

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 A5 and A6 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]See country-specific notes for Argentina and Venezuela in the "Country Notes" section of the Statistical Appendix.

[6]Central America refers to CAPDR (Central America, Panama, Dominican Republic) and comprises Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

[7]The Caribbean comprises Antigua and Barbuda, Aruba, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, 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. Middle Eastern and Central Asian 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	
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Middle East and Central Asia	**1.4**	**–4.1**	**3.0**	**7.8**	**9.3**	**9.3**	**0.7**	**–3.7**	**–2.7**	**. . .**	**. . .**	**. . .**
Oil Exporters[4]	**0.3**	**–6.0**	**3.3**	**6.3**	**7.3**	**8.0**	**2.9**	**–3.3**	**–2.0**	**. . .**	**. . .**	**. . .**
Saudi Arabia	0.3	–5.4	3.1	–2.1	3.6	3.7	5.9	–2.5	–1.6	5.6	. . .	. . .
Iran	–6.5	–5.0	3.2	41.0	30.5	30.0	1.1	–0.5	0.3	10.7	12.2	12.4
United Arab Emirates	1.7	–6.6	1.3	–1.9	–1.5	1.5	8.4	3.6	7.5	. . .	. . .	. . .
Iraq	4.4	–12.1	2.5	–0.2	0.8	1.0	1.1	–12.6	–12.1	. . .	. . .	. . .
Algeria	0.8	–5.5	3.2	2.0	3.5	3.8	–10.1	–10.8	–16.6	11.4	14.1	14.3
Kazakhstan	4.5	–2.7	3.0	5.2	6.9	6.2	–3.6	–3.3	–2.8	4.8	7.8	5.8
Qatar	0.8	–4.5	2.5	–0.6	–2.2	1.8	2.4	–0.6	2.6	. . .	. . .	. . .
Kuwait	0.4	–8.1	0.6	1.1	1.0	2.3	9.4	–6.8	–2.8	. . .	. . .	. . .
Oman	–0.8	–10.0	–0.5	0.1	1.0	3.4	–4.6	–14.6	–12.9	. . .	. . .	. . .
Azerbaijan	2.2	–4.0	2.0	2.7	3.0	3.1	9.1	–3.6	–4.4	4.8	6.5	5.8
Turkmenistan	6.3	1.8	4.6	5.1	8.0	6.0	5.1	1.0	1.8	. . .	. . .	. . .
Oil Importers[5]	**3.2**	**–1.1**	**2.5**	**10.3**	**12.4**	**11.3**	**–5.8**	**–4.5**	**–4.7**	**. . .**	**. . .**	**. . .**
Egypt	5.6	3.5	2.8	13.9	5.7	6.2	–3.6	–3.2	–4.2	8.6	8.3	9.7
Pakistan	1.9	–0.4	1.0	6.7	10.7	8.8	–4.9	–1.1	–2.5	4.1	4.5	5.1
Morocco	2.2	–7.0	4.9	0.2	0.2	0.8	–4.1	–7.3	–5.2	9.2	12.5	10.5
Uzbekistan	5.6	0.7	5.0	14.5	13.0	10.7	–5.6	–6.4	–7.4	. . .	. . .	. . .
Sudan	–2.5	–8.4	0.8	51.0	141.6	129.7	–15.1	–12.7	–10.7	22.1	25.0	22.0
Tunisia	1.0	–7.0	4.0	6.7	5.8	5.3	–8.5	–8.3	–8.7	14.9	. . .	. . .
Jordan	2.0	–5.0	3.4	0.7	–0.3	1.4	–2.3	–6.8	–5.7	19.1	. . .	. . .
Lebanon	–6.9	–25.0	. . .	2.9	85.5	. . .	–27.4	–16.3	. . .	. . .	. . .	. . .
Afghanistan	3.9	–5.0	4.0	2.3	5.4	4.8	11.7	9.5	7.8	. . .	. . .	. . .
Georgia	5.1	–5.0	5.0	4.9	5.3	2.5	–5.1	–10.8	–8.5	11.6	. . .	. . .
Tajikistan	7.5	1.0	6.0	7.8	8.1	7.0	–2.3	–7.1	–4.5	. . .	. . .	. . .
Armenia	7.6	–4.5	3.5	1.4	0.9	2.0	–8.2	–8.8	–7.3	18.9	22.3	21.1
Kyrgyz Republic	4.5	–12.0	9.8	1.1	8.0	5.5	–5.6	–13.4	–12.8	6.6	6.6	6.6
Memorandum												
Caucasus and Central Asia	4.8	–2.1	3.9	6.6	7.6	6.4	–1.5	–4.1	–3.8	. . .	. . .	. . .
Middle East, North Africa, Afghanistan, and Pakistan	0.9	–4.4	2.9	8.0	9.5	9.7	0.9	–3.6	–2.6	. . .	. . .	. . .
Middle East and North Africa	0.8	–5.0	3.2	8.2	9.4	9.9	1.3	–3.9	–2.7	. . .	. . .	. . .
Israel[6]	3.4	–5.9	4.9	0.8	–0.5	0.2	3.4	3.5	3.5	3.8	6.0	5.6
Maghreb[7]	2.1	–8.1	7.8	2.3	3.4	3.7	–7.0	–12.7	–12.3	. . .	. . .	. . .
Mashreq[8]	4.3	1.2	2.4	11.8	8.3	8.3	–6.8	–4.4	–4.7	. . .	. . .	. . .

Source: IMF staff estimates.

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 A5 and A6 in the Statistical Appendix.

[2]Percent of GDP.

[3]Percent. National definitions of unemployment may differ.

[4]Includes Bahrain, Libya, and Yemen.

[5]Includes Djibouti, Mauritania, Somalia, and West Bank and Gaza. Excludes Syria because of the uncertain political situation. See country-specific note for Lebanon in the "Country Notes" section of the Statistical Appendix.

[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, Lebanon, and West Bank and Gaza. Syria is excluded because of the uncertain political situation.

Annex Table 1.1.5. 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	
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Sub-Saharan Africa	**3.2**	**–3.0**	**3.1**	**8.5**	**10.6**	**7.9**	**–3.6**	**–4.8**	**–4.1**	**. . .**	**. . .**	**. . .**
Oil Exporters[4]	**1.6**	**–4.1**	**2.0**	**11.7**	**13.4**	**13.3**	**–2.1**	**–3.7**	**–2.2**	**. . .**	**. . .**	**. . .**
Nigeria	2.2	–4.3	1.7	11.4	12.9	12.7	–3.8	–3.6	–2.0	. . .	. . .	. . .
Angola	–0.9	–4.0	3.2	17.1	21.0	20.6	5.7	–1.3	0.1	. . .	. . .	. . .
Gabon	3.8	–2.7	2.1	2.0	3.0	3.0	–0.3	–9.1	–6.0	. . .	. . .	. . .
Republic of Congo	–0.6	–7.0	–0.8	2.2	2.5	2.6	3.5	–5.7	–1.9	. . .	. . .	. . .
Chad	3.0	–0.7	6.1	–1.0	2.8	3.0	–4.9	–13.3	–9.7	. . .	. . .	. . .
Middle-Income Countries[5]	**2.2**	**–5.1**	**3.8**	**4.0**	**4.3**	**4.4**	**–3.2**	**–3.1**	**–2.9**	**. . .**	**. . .**	**. . .**
South Africa	0.2	–8.0	3.0	4.1	3.3	3.9	–3.0	–1.6	–1.8	28.7	37.0	36.5
Ghana	6.5	0.9	4.2	7.2	10.6	8.7	–2.7	–3.4	–2.9	. . .	. . .	. . .
Côte d'Ivoire	6.5	1.8	6.2	0.8	1.2	1.4	–2.7	–3.7	–2.9	. . .	. . .	. . .
Cameroon	3.9	–2.8	3.4	2.5	2.8	2.2	–4.4	–5.4	–4.5	. . .	. . .	. . .
Zambia	1.4	–4.8	0.6	9.8	14.5	13.3	0.6	–1.0	0.0	. . .	. . .	. . .
Senegal	5.3	–0.7	5.2	1.0	2.0	2.0	–7.7	–9.2	–9.9	. . .	. . .	. . .
Low-Income Countries[6]	**5.9**	**0.1**	**3.4**	**10.1**	**14.4**	**6.3**	**–5.9**	**–7.7**	**–7.6**	**. . .**	**. . .**	**. . .**
Ethiopia	9.0	1.9	0.0	15.8	20.2	11.5	–5.3	–4.5	–4.6	. . .	. . .	. . .
Kenya	5.4	1.0	4.7	5.2	5.3	5.0	–5.8	–4.9	–5.4	. . .	. . .	. . .
Tanzania	7.0	1.9	3.6	3.4	3.6	3.7	–2.3	–3.2	–4.4	. . .	. . .	. . .
Uganda	6.7	–0.3	4.9	2.9	4.2	4.8	–6.5	–8.0	–5.9	. . .	. . .	. . .
Democratic Republic of the Congo	4.4	–2.2	3.6	4.7	11.5	12.1	–3.8	–4.8	–4.0	. . .	. . .	. . .
Mali	5.1	–2.0	4.0	–2.9	0.5	1.5	–4.2	–2.0	–1.2	. . .	. . .	. . .
Madagascar	4.8	–3.2	3.2	5.6	4.3	5.5	–2.3	–4.2	–2.9	. . .	. . .	. . .

Source: IMF staff estimates.

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 A6 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 1.1.6. Summary of World Real per Capita Output

(Annual percent change; in constant 2017 international dollars at purchasing power parity)

	Average									Projections	
	2002–11	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
World	**2.4**	**1.9**	**2.0**	**2.1**	**2.1**	**2.0**	**2.6**	**2.4**	**1.6**	**–5.6**	**4.0**
Advanced Economies	**1.1**	**0.6**	**0.9**	**1.6**	**1.8**	**1.2**	**2.1**	**1.8**	**1.3**	**–6.2**	**3.6**
United States	0.9	1.5	1.2	1.8	2.3	1.0	1.7	2.4	1.7	–4.7	2.6
Euro Area[1]	0.7	–1.2	–0.5	1.1	1.7	1.6	2.4	1.7	1.2	–8.5	5.1
Germany	1.2	0.2	0.2	1.8	0.6	1.4	2.2	1.0	0.3	–6.0	4.2
France	0.6	–0.2	0.1	0.4	0.7	0.8	2.0	1.6	1.4	–10.0	5.7
Italy	–0.3	–3.3	–2.4	–0.5	0.8	1.5	1.8	1.0	0.5	–10.5	5.3
Spain	0.3	–3.0	–1.1	1.7	3.9	3.1	2.9	2.3	1.9	–12.8	7.1
Japan	0.5	1.7	2.2	0.5	1.3	0.5	2.3	0.5	0.9	–4.9	2.7
United Kingdom	0.8	0.8	1.5	1.8	1.5	1.1	1.3	0.7	0.9	–10.4	5.4
Canada	1.0	0.7	1.3	1.8	–0.1	0.0	1.9	0.6	0.2	–8.4	4.1
Other Advanced Economies[2]	2.8	1.3	1.8	2.2	1.5	1.7	2.4	2.0	1.1	–4.6	3.1
Emerging Market and Developing Economies	**4.7**	**3.7**	**3.5**	**3.1**	**2.8**	**3.0**	**3.4**	**3.2**	**2.3**	**–4.7**	**4.8**
Emerging and Developing Asia	7.3	6.0	5.9	5.8	5.8	5.8	5.7	5.5	4.6	–2.7	7.2
China	10.1	7.4	7.3	6.7	6.4	6.2	6.4	6.3	5.8	1.5	7.9
India[3]	6.1	4.2	5.1	6.2	6.8	7.1	5.9	5.0	3.0	–11.2	7.7
ASEAN-5[4]	3.9	4.9	3.7	3.4	3.7	3.9	4.3	4.2	3.8	–4.5	5.2
Emerging and Developing Europe	4.7	2.8	2.8	1.5	0.5	1.6	3.9	3.2	1.9	–4.7	3.7
Russia	5.0	3.8	1.5	–1.1	–2.2	0.0	1.8	2.6	1.4	–4.2	2.8
Latin America and the Caribbean	2.2	1.7	1.7	0.1	–0.8	–1.9	0.2	0.1	–1.3	–9.1	2.7
Brazil	2.8	1.0	2.1	–0.3	–4.4	–4.1	0.5	0.5	0.3	–6.4	2.2
Mexico	0.4	2.2	0.0	1.5	2.0	1.4	0.9	1.1	–1.4	–9.9	2.5
Middle East and Central Asia	2.3	1.3	0.4	0.3	0.5	2.3	0.0	0.0	–0.6	–6.4	1.0
Saudi Arabia	1.4	2.5	0.0	2.5	1.7	–0.6	–3.3	0.0	–1.6	–7.3	1.1
Sub-Saharan Africa	2.8	1.9	2.3	2.5	0.5	–1.2	0.4	0.6	0.4	–5.6	0.5
Nigeria	5.9	1.5	2.6	3.5	0.0	–4.2	–1.8	–0.7	–0.4	–6.7	–0.8
South Africa	2.2	0.7	0.9	0.3	–0.3	–1.1	–0.1	–0.7	–1.3	–9.4	1.5
Memorandum											
European Union	1.2	–0.9	–0.2	1.5	2.1	1.9	2.8	2.1	1.6	–7.8	5.0
Low-Income Developing Countries	3.6	2.0	3.5	3.9	2.2	1.6	2.6	2.8	2.9	–3.3	2.7
Middle East and North Africa	2.0	0.7	–0.5	–0.4	0.2	2.5	–0.9	–0.9	–1.3	–7.5	1.0

Source: IMF staff estimates.

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, and Vietnam.

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