

Introduction

Fiscal policy is operating in a highly uncertain environment, under pressure from a lingering pandemic, the economic consequences of a recently erupted war, and elevated inflation. Just as increasing vaccinations offered hope to many countries, *Russia's* invasion of *Ukraine* disrupted the global economic recovery (April 2022 *World Economic Outlook*). The war is causing death, human misery, destruction of infrastructure, costly displacement of refugees, and loss of human capital. Moreover, because *Russia* is a major exporter of fossil fuels and *Russia* and *Ukraine* are key players in the market for grains, global commodity prices have risen further and have become more volatile, heightening the risks of food shortages and social unrest well beyond the regions affected by the war. With these developments putting additional pressures and uncertainty on inflation, the landscape in which fiscal policy operates has shifted abruptly. Less than a year ago, many central banks in advanced economies were constrained by the effective lower bound on interest rates, and fiscal support was helping them move toward their inflation targets. Now, the situation has changed significantly: fiscal policy needs to tackle the effects of the war while navigating an environment of rising inflation and interest rates, slower economic growth, and high debt and borrowing costs that make budget constraints increasingly binding.

These new shocks exacerbate the effects of the COVID-19 crisis and are likely to shape future government policies. Fiscal support during the pandemic—together with the economic recession—resulted in

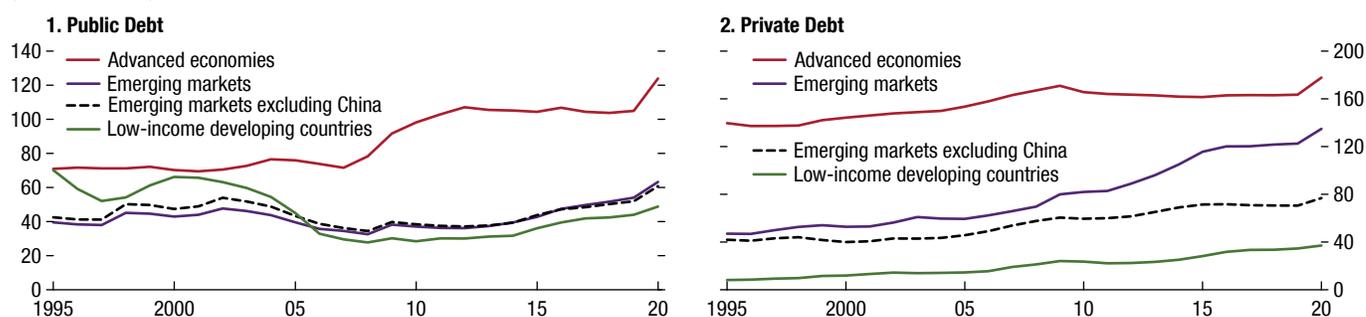
the largest one-year debt surge since World War II. Total (public plus nonfinancial private) debt rose by 28 percentage points in 2020 to 256 percent of global GDP (Figure 1.1). More than half of this surge occurred on public balance sheets, with government debt now accounting for 40 percent of total global debt.¹ Moreover, the pandemic heightened the great financing divide among countries. Although leverage rose in advanced economies with the support of low interest rates and central banks' purchase of sovereign debt, many low-income developing countries faced limited access to funding (Gaspar, Medas, and Perrelli 2021). As central banks in the largest advanced economies increase interest rates to counteract inflationary pressures, sovereign bond spreads will likely continue to widen, worsening debt vulnerabilities. The war in *Ukraine* has also heightened the great financing divide among countries, with borrowing costs rising significantly for the most affected emerging markets and low-income developing countries (April 2022 *Global Financial Stability Report*).

Advanced economies, emerging market economies, and low-income developing countries face disparate challenges. Advanced economies that were projected to return to prepandemic GDP trends in 2022–23 now face lower-than-expected economic growth. Emerging markets and low-income developing countries serving as net importers of food and energy will be even more affected. Many of these countries carry scars from the pandemic and have little fiscal space. Although extreme global poverty declined in 2021, partly undoing the rise in 2020, an estimated 70 million more people were in extreme poverty relative to prepandemic trends (Box 1.1; Online Annex 1.1). A worse outlook and rising food and energy prices will negatively affect the poorest households more. Countries in sub-Saharan Africa, where food represents about 40 percent of the consumption basket, are especially vulnerable.

The main authors of Chapter 1 of this issue are Jean-Marc Fournier and Roberto Accioly Perrelli (Team Leaders), Hamid R. Davoodi, Brooks Fox Evans, Daniel Garcia-Macia, Carlos Gonçalves, Fabien Gonguet, Futoshi Narita, Anh Dinh Minh Nguyen, Cédric Okou, John Ralyea, and Alexandra Solovyeva, with contributions from Diala Al Masri (Oxford University), David Amaglobeli, Emine Hanedar, Gee Hee Hong, and Céline Thévenot; research support from Mengfei Gu, Andrew Womer, and Chenlu Zhang, and overall guidance of Paolo Mauro (Deputy Director) and Paulo Medas (Division Chief). The authors are grateful for comments from other IMF departments and from Ricardo Reis (London School of Economics and Political Science).

¹For a complementary focus on private debt, see the April 2022 *World Economic Outlook* Chapter 2.

Figure 1.1. Global Public and Private Debt, 1995–2020
(Percent of GDP)



Sources: IMF Global Debt database; and IMF World Economic Outlook database.

The fiscal outlook is subject to elevated uncertainty, as the full consequences of the war are unknown and will vary across countries. Deficits are falling globally but are expected to remain above prepandemic levels. The global public debt-to-GDP ratio at the end of 2021 was 2.8 percentage points lower than anticipated as of estimates from the October 2020 *Fiscal Monitor*, in tandem with higher-than-expected nominal GDP growth. The average debt in advanced economies is expected to decrease to 113 percent of GDP by 2024, mirroring the relatively stronger recovery. Meanwhile, public debt is projected to continue to rise in emerging markets, driven mainly by *China*, reaching 72 percent of GDP by 2024. Among low-income developing economies where deficits widened less during the crisis, debt is expected to gradually decline to 48 percent of GDP by 2024, above prepandemic levels. Public debt is expected to go down faster in oil exporters thanks to positive terms-of-trade shocks, falling from almost 56 percent of GDP in 2021 to 50 percent of GDP in 2024. The reduction of deficits and debt could prove difficult, especially if economic growth is lower than expected.

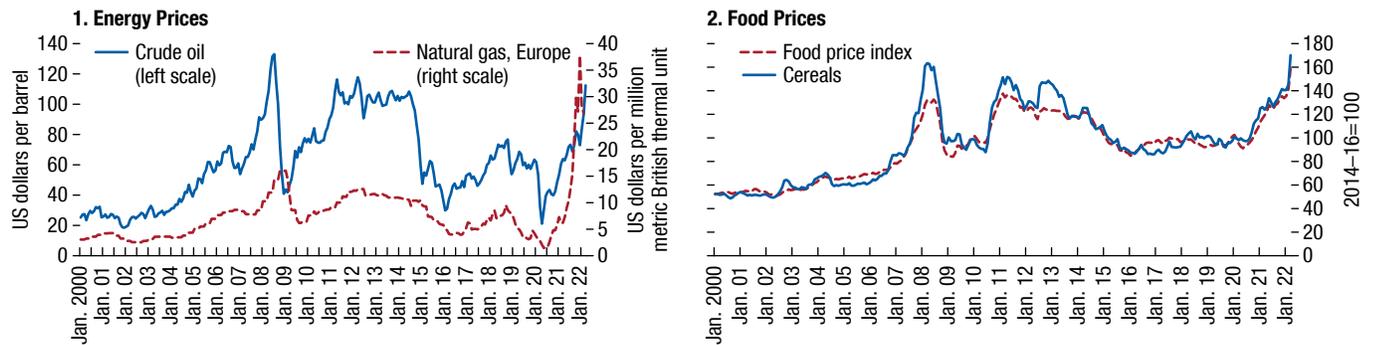
Amidst pandemic legacies and the war, fiscal policy needs to remain flexible and ready to adjust as the outlook becomes clearer. The unpredictable developments related to the war, high volatility in commodity prices, and rising inflation and borrowing costs make the environment especially challenging. New spending pressures require reprioritizing spending and mobilizing revenues especially in countries with tighter budget constraints. The strategy to address the recent spike in energy prices will need to involve both short-term measures, including to protect vulnerable households,

and step-up actions to ensure energy security and achieve the green transition toward a low-carbon economy. International cooperation is critical for meeting these goals.

Recent Fiscal Developments and Outlook

An urgent challenge for governments is the risk of the war in *Ukraine*, and the spillovers from economic sanctions on *Russia*, triggering major disruptions in commodity markets. *Russia* accounts for about 45 percent of the *European Union's* total gas imports and 10 percent of global oil exports. In food markets, *Russia* and *Ukraine* account for one-quarter of global wheat, one-seventh of corn, and three-quarters of sunflower oils exports. Since the war started, supply disruptions have steepened the rising trends in energy and food prices (Figure 1.2). The broad-based food price index of the Food and Agriculture Organization of the United Nations reached its all-time high since the index was introduced in 1990. Commodity prices are also more volatile. The rise in food prices can be amplified by fertilizer shortages. *Russia* and *Belarus* account for one-fifth of global fertilizer exports, especially potassic fertilizers (one-third of global trade) and nitrogenous fertilizers. As the production of potash fertilizers relies on mining, and as producing nitrogen-based fertilizers requires natural gas, upsizing production in other countries is not straightforward. Fertilizers' prices had already increased by about 80 percent over the last 12 months. The additional tension could impact future harvests in large economies (*Brazil, India, United States*), and most low-income developing countries,

Figure 1.2. International Energy and Food Prices, 2000–22



Sources: US Energy Information Administration; and UN Food and Agriculture Organization.

especially in Africa, which rely almost exclusively on imported fertilizers.

The fiscal impact of rising commodity prices will vary significantly across countries as economic activity and terms of trade adjust to the new environment. Importers of energy will feel the worse economic impact and fall in budgetary revenues, whereas large energy exporters will benefit the most. The effects on governments' budgets will also depend on how policies react to rising prices. Energy subsidies could pose significant fiscal costs—measured as the change in net taxes.² On average, for gasoline and diesel, the pass-through of global energy prices to domestic prices has been the highest in advanced economies and the lowest in low-income developing countries (including those in the Middle East and Northern Africa and sub-Saharan Africa) given that they rely more on ad hoc fuel pricing mechanisms (Figure 1.3, panel 1). If the levels of international oil prices and domestic retail prices as of the end of February 2022 persist during the remainder of the year, the latter group would face another round of substantial fiscal effects (Figure 1.3, panel 2).

Rising fiscal pressures will also stem from an increase in support to households as a result of higher food prices, the cost of managing the refugee crisis, and greater defense spending in some countries

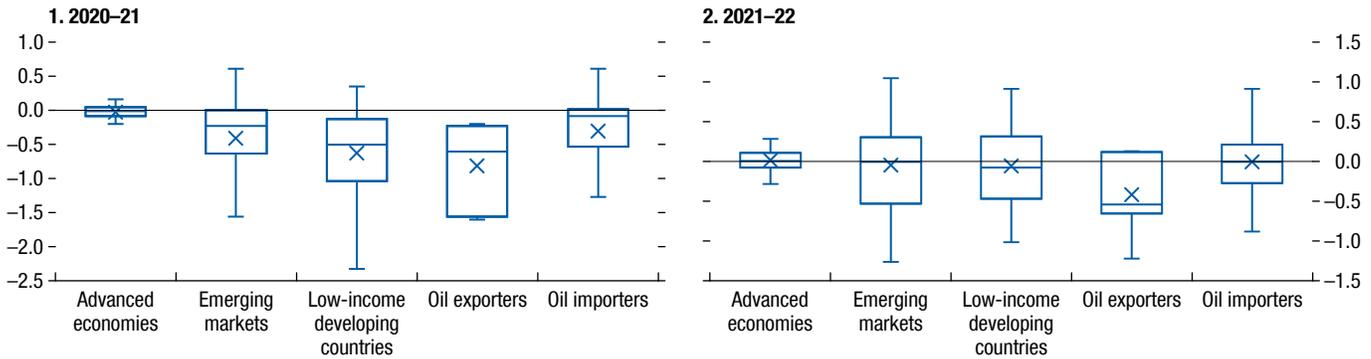
²Net taxes are positive when domestic retail prices are greater than supply costs and negative when less than supply costs. Where countries impose ad valorem taxes, tax levels can change even when tax rates do not. Moreover, the total fiscal effect of changes in oil prices may be larger than the effect of changes in net taxes if, for example, oil exporters receive higher (lower) oil revenues when prices increase (decrease).

(for example, *Germany*). Budgetary costs could come from higher food subsidies in countries that control domestic prices or introduce measures to limit the pass-through. For example, during the 2008 global food price crisis, many countries reduced taxes or increased explicit subsidies. Between 2006 and 2008, with comparable food price increases, more than 80 countries reduced food taxes. The fiscal cost of these measures reached more than 0.5 percent of GDP in countries for which data are available and up to 1.1 percent of GDP in some cases (IMF 2008). For the current crisis, countries have provided different types of support, including transfers to households (Box 1.2).

Fiscal deficits and debts are evolving with large differences across country groups, reflecting divergent economic recoveries (Figure 1.4). After a large increase at the onset of the pandemic, deficits declined in 2021 as economies recovered and countries started to withdraw exceptional support. Deficits are expected to decline further in advanced economies, mirroring the pace of the recovery. In emerging markets and low-income developing countries, on average, deficits are projected to decline more gradually over the medium term. Scarring from the pandemic, more expensive food and energy imports, risks of social unrest,³ and tighter financing constraints in the developing world will make meeting the United Nations Sustainable Development Goals even more challenging. Global public

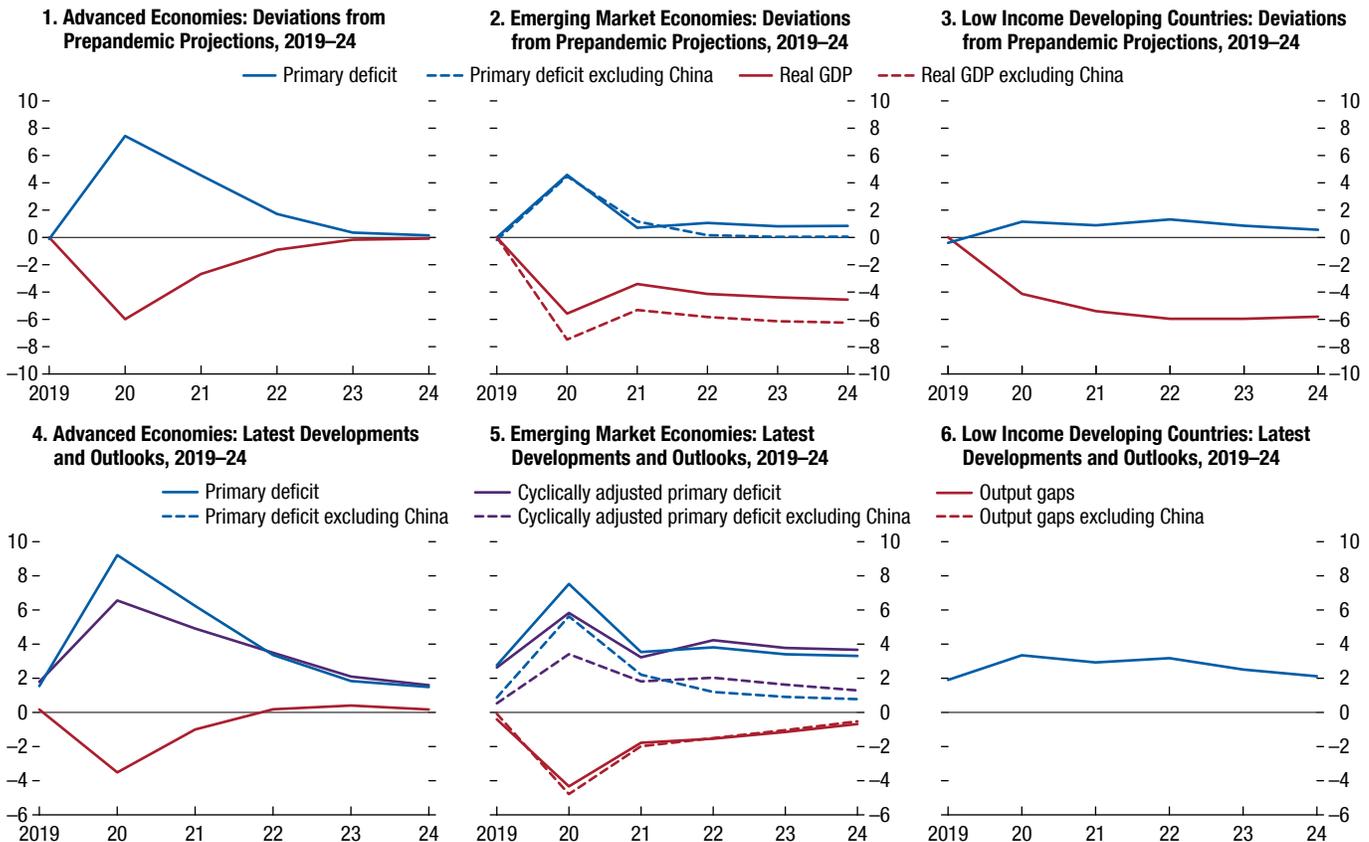
³For evidence of the effect of food prices on social unrest risks, see Redl and Hlatshwayo (2021). Social unrest can also entail economic costs as evidenced by Hadzi-Vaskov and others (2021) and Barrett and others (2021).

Figure 1.3. Fiscal Effects of Energy Subsidies When International Prices Change
(Percent of GDP)



Source: Global Petrol Prices database; International Energy Agency; Parry and others 2021; October 2021 *World Economic Outlook*; and IMF staff calculations.
 Note: For each country, the fiscal effect is calculated in terms of net tax revenues by subtracting the average supply cost from the domestic retail price and multiplying by total consumption in a given period. The results are divided by GDP in that period. The change in fiscal effect is calculated by subtracting the fiscal effect (in percent of GDP) in the current year from the previous year. Domestic retail prices are obtained from the Global Petrol Prices database. Supply cost is obtained from the International Energy Agency. There are three different international oil prices (cost, insurance, and freight or free on board) used depending on the region of the country. A transportation cost of \$0.10 per liter is added for all countries and an additional margin of \$0.10 per liter is added to oil-importing countries. Consumption data is obtained from Parry and others (2021). Actual data were used for 2020, and predicted data were used for 2021 and 2022.

Figure 1.4. Uneven Economic Recoveries and Fiscal Deficits



Sources: World Economic Outlook database; and IMF staff calculations.
 Note: Primary deficit is shown as a percentage of GDP. Cyclically adjusted primary deficit is shown as a percentage of potential GDP. Prepandemic projections are from the January 2020 *World Economic Outlook*.

debt is expected to stabilize at around 94 percent of GDP during 2022–24, well above prepandemic levels, raising concerns about debt vulnerabilities and financial stability and weighing on growth prospects, especially if interest rates rise faster than expected.

The fiscal outlook is subject to unusually high uncertainty. A protracted and intensified war in *Ukraine*, beyond a worsening humanitarian crisis, would disrupt commodity markets for longer, further pressuring inflation and undermining economic growth (April 2022 *World Economic Outlook*), and exacerbating fiscal deficits. This would also increase the risk of private sector bankruptcies and financial sector distress adding to fiscal risks (April 2022 *Global Financial Stability Report*). Measures that address supply constraints would reduce uncertainty and help the economy and, as a consequence, improve the health of public finances over time. Tighter-than-expected global financial conditions would be particularly detrimental for countries with large debt vulnerabilities.⁴ The evolution of the pandemic also remains a source of uncertainty amid uneven vaccination progress across countries. High public debt, coupled with record leverage in nonfinancial corporate balance sheets, may also constrain governments' ability to cope with new shocks and reduce growth prospects. In this regard, history shows that half a decade after the global financial crisis began, many advanced economies and emerging markets had not restored precrisis primary balances.

Advanced Economies

Primary deficits in advanced economies declined from their 2020 record levels in 2021 and are expected to fall further in 2022, reflecting a recovery in tax revenues and withdrawal of pandemic-related fiscal measures (Table 1.1). However, the deficit reduction in 2022 is subject to high uncertainty given the war in *Ukraine*. In the euro area, primary deficits are expected to decline by about 1 percent of GDP in 2022 on average, compared with an expected fall of 2½ percent of GDP before the war (January 2022 *World Economic Outlook Update*). This projection reflects additional spending in response to the consequences of the war and downward revisions to economic growth.

⁴For example, see Chapter 3 (“The Sovereign-Bank Nexus in Emerging Markets: A Risky Embrace”) in the April 2022 *Global Financial Stability Report*.

Policies are also shifting from COVID-19 support to promoting structural transformation. For example, on average, advanced economies are projected to increase annual public investment by 0.5 percentage points of GDP in the medium term relative to prepandemic forecasts. The *United States* passed an infrastructure bill totaling around 2 percent of GDP in new funding spread over the medium term for projects in transportation, utilities, broadband, environmental remediation, and resilience. In November 2021, *Japan* announced a new fiscal package (5 percent of GDP⁵) for 2022–23 including extended pandemic relief, broader social spending, and infrastructure investment. Public investment in the *European Union* is projected to be 0.5 percent of GDP higher than prepandemic forecasts in 2022 as its countries have started to implement national Recovery and Resilience Plans, partly financed by the common EU budget, with a focus on climate and digitalization. The *United Kingdom's* Plan for Growth program, centered on infrastructure, skills, and innovation, includes a pledge to raise public sector net investment to an average 2.7 percent of GDP until 2024–25, nearly twice the average of the past 40 years.

After jumping by 19 percent of GDP in 2020, public debt in advanced economies is expected to decline slightly over the medium term (Table 1.2). Debt-to-GDP ratios surprised in 2021, staying on average about 6 percentage points below forecasts reported in the October 2020 *Fiscal Monitor*, amid nominal GDP growth above expectations and lower-than-expected deficits. In addition, some of the planned exceptional support did not materialize (for example, take-up of government guarantees, and credit lines was smaller than announced limits). Cumulative deficits over 2021–26 would partially offset an anticipated boon from negative interest-growth differentials. In the *European Union*, Next Generation EU support financed by the common EU budget will provide fiscal space to member countries severely affected by the pandemic.⁶ In light of high debt levels, closed or

⁵This amount estimated by IMF staff excludes measures contingent on future health and economic developments and previously announced measures.

⁶EU member states have requested Recovery and Resilience Facility grants and loans amounting to €331 billion and €166 billion, respectively, out of which €46.6 billion in grants and €19.9 billion in loans have been disbursed as of the beginning of February 2022. These are financed by EU-level debt issuance.

Table 1.1. General Government Overall Fiscal Balance, 2017–27
(Percent of GDP)

	2017	2018	2019	2020	2021	Projections					
						2022	2023	2024	2025	2026	2027
World	-3.0	-2.9	-3.6	-9.9	-6.4	-4.9	-4.0	-3.9	-4.0	-4.0	-3.9
Advanced Economies	-2.4	-2.5	-3.0	-10.5	-7.3	-4.3	-2.9	-2.8	-3.0	-3.0	-3.0
Canada	-0.1	0.4	0.0	-11.4	-4.7	-2.2	-0.8	-0.7	-0.5	-0.4	-0.3
Euro Area	-0.9	-0.4	-0.6	-7.2	-5.5	-4.3	-2.5	-2.0	-1.8	-1.7	-1.7
France	-3.0	-2.3	-3.1	-9.1	-7.0	-5.6	-3.8	-3.4	-3.3	-3.3	-3.3
Germany	1.3	1.9	1.5	-4.3	-3.7	-3.3	-0.7	-0.1	0.3	0.4	0.4
Italy	-2.4	-2.2	-1.5	-9.6	-7.2	-6.0	-3.9	-3.3	-3.0	-2.8	-2.5
Spain ¹	-3.0	-2.5	-2.9	-11.0	-7.0	-5.3	-4.3	-3.9	-3.9	-3.9	-3.9
Japan	-3.1	-2.5	-3.0	-9.0	-7.6	-7.8	-3.5	-2.5	-2.5	-2.6	-2.8
United Kingdom	-2.4	-2.2	-2.2	-12.8	-8.0	-4.3	-2.3	-1.5	-1.4	-1.3	-1.0
United States ²	-4.6	-5.4	-5.7	-14.5	-10.2	-4.8	-4.0	-4.4	-5.2	-5.1	-5.2
Others	1.2	1.2	-0.1	-4.7	-2.6	-1.7	-0.9	-0.6	-0.5	-0.4	-0.3
Emerging Market Economies	-3.9	-3.6	-4.6	-9.3	-5.3	-5.7	-5.5	-5.4	-5.3	-5.3	-5.2
Excluding MENA Oil Producers	-3.8	-3.7	-4.7	-9.4	-5.6	-6.6	-6.1	-5.9	-5.7	-5.6	-5.5
Asia	-3.6	-4.2	-5.8	-10.4	-6.6	-7.7	-6.9	-6.8	-6.6	-6.6	-6.5
China	-3.4	-4.3	-6.1	-10.7	-6.0	-7.7	-7.1	-7.0	-6.9	-6.9	-6.8
India	-6.2	-6.4	-7.5	-12.8	-10.4	-9.9	-9.1	-8.5	-8.0	-7.7	-7.5
Europe	-1.8	0.3	-0.6	-5.6	-1.9	-4.6	-4.8	-4.6	-4.3	-3.9	-3.5
Russian Federation	-1.5	2.9	1.9	-4.0	0.7	-4.0	-5.3	-4.8	-4.1	-3.0	-1.9
Latin America	-5.4	-5.0	-4.1	-8.8	-4.5	-4.7	-4.2	-3.4	-3.0	-2.8	-2.7
Brazil	-7.8	-7.0	-5.9	-13.3	-4.4	-7.6	-7.4	-5.6	-4.9	-4.4	-4.5
Mexico	-1.1	-2.2	-2.3	-4.4	-3.8	-3.2	-3.2	-2.9	-2.8	-2.8	-2.8
MENA	-5.4	-1.9	-2.9	-8.0	-3.1	1.5	0.1	-1.0	-1.6	-1.9	-2.2
Saudi Arabia	-9.2	-5.7	-4.4	-11.3	-2.4	5.5	4.7	4.4	4.3	4.5	4.6
South Africa	-4.0	-3.7	-4.7	-9.7	-6.4	-5.8	-6.1	-6.6	-7.0	-7.5	-7.9
Low-Income Developing Countries	-3.7	-3.3	-3.5	-5.1	-4.9	-5.2	-4.6	-4.3	-4.2	-4.1	-4.0
Kenya	-7.4	-6.9	-7.4	-8.1	-8.1	-6.9	-5.3	-4.5	-4.3	-4.0	-3.8
Nigeria	-5.4	-4.3	-4.7	-5.7	-6.0	-6.4	-5.9	-5.9	-6.1	-6.3	-6.4
Vietnam	-2.0	-1.0	-0.4	-3.9	-4.2	-5.0	-5.1	-4.7	-4.4	-4.0	-3.7
Oil Producers	-2.8	0.3	-0.4	-7.4	-2.2	0.2	-0.5	-1.0	-1.3	-1.4	-1.5
Memorandum											
World Output (percent)	3.7	3.6	2.9	-3.1	6.1	3.6	3.6	3.4	3.4	3.3	3.3

Source: IMF staff estimates and projections.

Note: All country averages are weighted by nominal GDP converted to US dollars (adjusted by purchasing power parity only for world output) at average market exchange rates in the years indicated and based on data availability. Projections are based on IMF staff assessments of current policies. In many countries, 2021 data are still preliminary. For country-specific details, see "Data and Conventions" and Tables A, B, C, and D in the Methodological and Statistical Appendix. MENA = Middle East and North Africa.

¹ Including financial sector support.

² For cross-economy comparability, expenditure and fiscal balances of the United States are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 System of National Accounts (2008 SNA) adopted by the United States but not in countries that have not yet adopted the 2008 SNA. Data for the United States in this table may thus differ from data published by the US Bureau of Economic Analysis.

positive output gaps, and above-target inflation rates, some countries have started to develop consolidation strategies (for example, the *United Kingdom* is set to introduce tax increases) and proposals to resume using fiscal rules, including new ones, to rebuild fiscal buffer. The medium-term fiscal plans and projections, however, face an exceptional degree of uncertainty depending on developments in war, especially in Europe, inflation, and interest rates.

Emerging Markets

Fiscal deficits declined in emerging market economies in 2021, partly undoing the large increase in 2020. Revenues outperformed and spending was lower than expected in the October 2020 *Fiscal Monitor* projections. As a result, primary deficits narrowed, on average, 4 percentage points of GDP. On average, approximately two-thirds of the improvement come from discretionary policy and one third from less

Table 1.2. General Government Debt, 2017–27
(Percent of GDP)

	2017	2018	2019	2020	2021	Projections					
						2022	2023	2024	2025	2026	2027
Gross Debt											
World	82.0	82.2	83.6	99.2	97.0	94.4	94.1	94.5	95.0	95.4	95.5
Advanced Economies	103.2	102.7	103.8	123.2	119.8	115.5	113.7	113.1	113.0	112.9	112.7
Canada ¹	88.9	88.9	87.2	117.8	112.1	101.8	98.5	96.2	93.4	90.5	87.7
Euro Area	87.5	85.5	83.5	97.3	96.0	95.2	93.4	92.1	91.0	90.0	88.9
France	98.1	97.8	97.4	115.2	112.3	112.6	112.9	113.1	113.3	113.6	114.0
Germany	64.7	61.3	58.9	68.7	70.2	70.9	67.7	65.5	63.2	60.9	58.7
Italy	134.2	134.4	134.1	155.3	150.9	150.6	148.7	147.2	145.7	144.3	142.9
Spain	98.6	97.5	95.5	120.0	118.7	116.4	115.9	114.7	114.5	114.5	114.6
Japan	231.4	232.5	236.1	259.0	263.1	262.5	258.3	258.7	259.4	260.5	261.8
United Kingdom	85.1	84.5	83.9	102.6	95.3	87.8	82.7	79.6	76.3	73.4	70.7
United States ¹	106.2	107.5	108.8	134.2	132.6	125.6	123.7	124.0	125.1	126.2	127.4
Emerging Market Economies	50.5	52.3	54.6	64.9	66.1	67.4	69.8	72.1	74.2	75.9	77.2
Excluding MENA Oil Producers	52.1	54.1	56.3	66.8	68.3	70.8	73.2	75.6	77.6	79.4	80.7
Asia	52.8	54.5	57.6	68.9	72.9	76.5	79.5	82.6	85.4	87.7	89.6
China	51.7	53.8	57.2	68.1	73.3	77.8	81.8	85.8	89.6	92.8	95.4
India	69.7	70.4	75.1	90.1	86.8	86.9	86.6	86.1	85.3	84.7	84.2
Europe	30.0	29.7	29.2	37.9	36.3	37.1	38.6	40.1	41.6	42.9	43.5
Russian Federation	14.3	13.6	13.7	19.2	17.0	16.8	18.9	20.0	20.9	21.4	21.2
Latin America	61.1	67.5	68.4	77.8	72.4	71.7	71.9	71.8	71.5	71.0	70.2
Brazil ²	83.6	85.6	87.9	98.7	93.0	91.9	92.8	93.4	94.2	94.9	94.3
Mexico	54.0	53.6	53.3	60.3	57.6	58.4	58.9	59.2	59.5	59.8	60.1
MENA Region	43.2	41.0	44.4	53.8	52.6	43.1	42.9	43.3	43.5	43.5	43.6
Saudi Arabia	17.2	18.3	22.5	32.4	30.0	24.1	24.5	24.4	23.9	23.3	22.6
South Africa	48.6	51.6	56.3	69.4	69.1	70.2	73.4	76.7	80.1	83.7	87.5
Low-Income Developing Countries	42.1	42.4	43.6	49.5	49.8	50.3	48.8	47.8	47.1	46.5	45.9
Kenya	53.9	56.4	58.6	67.6	68.1	70.3	69.4	67.7	65.5	62.8	60.4
Nigeria	25.3	27.7	29.2	34.5	37.0	37.4	38.8	40.2	41.6	42.9	44.2
Vietnam	46.3	43.7	41.3	41.7	40.2	41.3	42.0	42.3	42.4	42.4	42.2
Oil Producers	42.4	44.0	45.0	58.7	55.6	49.0	49.5	49.5	49.2	48.7	48.2
Net Debt											
World	67.3	67.5	68.5	80.1	79.8	77.2	76.3	76.3	77.1	77.7	78.2
Advanced Economies³	74.5	74.4	75.2	87.5	87.3	84.8	83.8	83.9	84.9	85.8	86.7
Canada ¹	25.8	25.7	23.1	33.6	33.2	32.1	31.6	31.3	30.8	29.1	27.6
Euro Area	72.4	70.6	69.1	79.6	79.2	79.2	78.1	77.3	76.5	75.9	75.1
France	89.4	89.2	88.8	102.6	99.8	100.1	100.4	100.6	100.7	101.0	101.4
Germany	45.4	42.6	40.5	46.3	49.0	51.1	49.0	47.5	45.7	43.9	42.2
Italy	121.3	121.8	121.7	141.8	138.3	138.5	137.1	136.0	134.8	133.7	132.6
Spain	85.1	83.7	82.3	103.0	103.0	101.6	101.8	101.2	101.5	101.9	102.5
Japan	148.1	151.1	151.4	162.4	168.9	172.1	171.0	171.4	172.1	173.2	174.5
United Kingdom	75.7	74.8	74.1	90.2	84.3	76.1	71.3	68.0	64.8	61.9	59.2
United States ¹	80.3	81.2	83.0	98.7	101.3	95.8	94.9	96.1	99.2	102.4	105.6
Emerging Market Economies	36.0	36.7	38.1	45.4	46.2	44.0	44.0	44.4	44.7	44.8	44.6
Asia	...	...	...	...	...	...	...	...	...	...	...
Europe	29.9	30.3	29.0	36.4	39.1	39.0	38.0	38.9	39.6	40.5	40.5
Latin America	42.5	43.0	44.2	51.7	49.2	50.4	51.6	52.3	52.8	53.2	53.1
MENA Region	28.5	29.4	33.7	42.0	45.5	36.3	34.9	34.6	34.2	33.6	33.0

Source: IMF staff estimates and projections.

Notes: All country averages are weighted by nominal GDP converted to US dollars (adjusted by purchasing power parity only for world output) at average market exchange rates in the years indicated and based on data availability. Projections are based on IMF staff assessments of current policies. In many countries, 2021 data are still preliminary. For country-specific details, see "Data and Conventions" and Tables A, B, C, and D in the Methodological and Statistical Appendix. MENA = Middle East and North Africa.

¹ For cross-economy comparability, gross and net debt levels reported by national statistical agencies for economies that have adopted the 2008 System of National Accounts (Australia, Canada, Hong Kong SAR, United States) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

² Gross debt refers to the nonfinancial public sector, excluding Eletrobras and Petrobras, and includes sovereign debt held on the balance sheet of the central bank.

³ Net debt for advanced economies includes the grants portion of the Next Generation EU package disbursed in 2021 (€73 billion, 0.5 percent of European Union GDP).

expansionary automatic stabilizers. Nevertheless, there was considerable heterogeneity across countries. Those that experienced the largest increases in deficits in 2020 also had the largest deficit reductions in 2021 (*Brazil, Saudi Arabia*). In *Brazil*, most of the pandemic-related fiscal support expired at the end of 2020. Primary balances changes in *Mexico* and *Turkey* were comparatively small during those years as pandemic-related fiscal support was smaller. Few emerging markets experienced further widening of deficits in 2021 (*The Philippines, Thailand*). In *China*, fiscal policy was tightened in 2021 as most pandemic-related exemptions on employer social security contributions expired while a growth-induced tax rebound drove revenue strongly upward. Investment delays resulting from COVID-19 outbreaks and a tighter control of current spending limited expenditures.

Although overall deficits are expected to decline, on average, by less than 1 percent of GDP in emerging markets (excluding *China*) during 2022, this outlook is particularly uncertain as many countries are affected by the war and its spillovers. The fiscal outlook is derailed in *Belarus, Russia, and Ukraine* with large increases in deficits as the war and the economic sanctions curtail economic activities (April 2022 *World Economic Outlook*). Commodity importers are also likely to face a deterioration in fiscal dynamics with increased spending pressures. Many countries have announced new spending and tax measures in response to rising food and energy prices (Box 1.2). Further, resurgence of Covid-19 cases and associated lockdown is weighing on the recovery in output and revenues, especially in *China*. By contrast, the primary balance in commodity exporters is expected to improve from a deficit of 2.3 percent of GDP in 2021 to a surplus of almost 2 percent of GDP in 2022, driven by higher commodity prices and an even sharper improvement among oil producers, as governments are expected to use the windfall revenue to rebuild buffers. As a result, debt would decline from 50 percent of GDP in 2021 to 43 percent in 2022 among commodity exporters, reflecting both these surpluses and a boost in nominal GDP.⁷

Beyond 2022, primary balances in emerging markets (excluding *China*) are expected to improve

⁷To focus on the gains resulting from commodity price increases, these averages exclude *Russia* and countries for which commodity exports usually transit through *Russia*.

by 0.4 percent of GDP, from 1.2 percent of GDP in 2022 to 0.8 percent of GDP by 2024, driven mainly by a reduction in primary expenditures as a share of GDP. This would broadly stabilize their average debt-to-GDP ratio around 59 percent of GDP,⁸ above medium-term projections of 52½ percent of GDP before the pandemic. For example, in *Indonesia*, the plan is to return to a deficit below 3 percent of GDP by 2023 mainly by gradually withdrawing COVID-related fiscal support and increasing revenue mobilization. However, in *China*, spending needs are projected to lead fiscal deficits to hover around 7 percent of GDP (above prepandemic years) and public debt to rise from 73 percent of GDP in 2021 to around 86 percent of GDP by 2024 (compared with 57 percent of GDP in the year prior to the pandemic). Also, in *South Africa*, the debt-to-GDP-ratio, which rose significantly during the pandemic, is projected to surpass 75 percent in the next two years.

Reflecting the gradual improvement in primary balances, average gross financing needs for emerging markets (excluding *China*) are expected to decline by about 0.5 percent of GDP in 2022 compared to 2021. However, over the medium term, the average gross interest bill for these countries is projected to increase from about 3 to 3.5 percent of GDP.

Low-Income Developing Countries

The average fiscal deficit in low-income developing countries remained broadly stable in 2021 at about 5 percent of GDP. Fiscal deficits of commodity exporters remained broadly unchanged as higher revenues driven by the rebound in commodity prices were offset by increases in spending. Deficits widened further in countries that rely on tourism (*Cambodia*) and those that face fiscal pressures from social spending. On average, government revenues remained well below prepandemic projections as the decline in revenue mobilization—1½ percentage points of GDP lower revenue-to-GDP ratio—was compounded by a severe output loss (about 6 percentage points of GDP). Under pressure, several countries reduced real capital spending for the second consecutive year (*Republic of Congo, Zambia*).

⁸Excluding *Venezuela*, whose debt-to-GDP projection is above 280 percent for 2027.

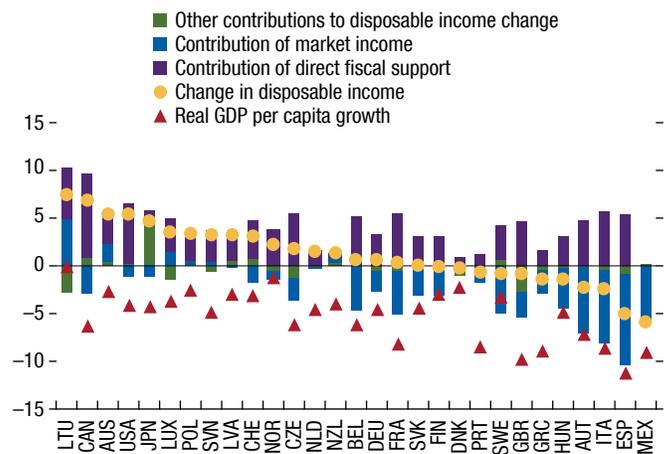
Fiscal deficits are expected to widen slightly in 2022 for both net exporters and net importers of commodities, albeit reflecting different forces. Commodity importers are challenged by limited fiscal space to address the energy and food price increases, whereas commodity exporters (especially energy exporters) will benefit from a revenue windfall. For importers, the average overall fiscal deficit in low-income developing countries is expected to rise, from 4.9 percent of GDP in 2021 to 5.1 in 2022 as revenue increase would not match spending increase. Higher food prices and potential food shortages can increase poverty or prompt social unrest and thus trigger pressure on governments to grant higher subsidies, but fiscal space is very limited. In the medium term, if pressures abate, the average deficit will narrow to 4.2 percent of GDP in 2024, still above the prepandemic average. In commodity exporters, deficits are expected to widen slightly in 2022 as expenditures grow. Over the medium term, commodity exporters' fiscal deficit would narrow somewhat toward 4½ percent of GDP, as increases in revenues would be more durable than increases in spending. More broadly, looking at low-income developing economies averages, revenues are expected to mirror output developments and hence remain below prepandemic projections. On average, expenditures in low-income developing countries are projected to fall to 19 percent of GDP by 2024, with a gradual scaling down of current spending.

The average gross debt in low-income developing countries remained broadly unchanged at around 50 percent of GDP in 2021. Debt ratios continued to rise in almost two-thirds of countries but fell in some commodity exporters (*Liberia, Mauritania*). Over the medium term, low-income developing countries will face increasing debt vulnerabilities amid rising borrowing costs. Although the average debt is projected to decline moderately to 48 percent of GDP by 2024, it will remain above the prepandemic level in almost two-thirds of countries. The median debt service to tax ratio is expected to remain above the prepandemic level and exceed 40 percent in several highly indebted countries (*Ghana, Myanmar, Nigeria*). About 60 percent of low-income developing countries are now at high risk or already in debt distress—compared with slightly less than 30 percent in 2015—and continue to rely on international support to end the pandemic and ensure growth (Georgieva and Pazarbasioglu 2021).

Government Support, Poverty, and Household Savings during the Pandemic

The COVID-19 pandemic has had uneven effects on households, depending primarily on the scale of government support. Government programs and transfers—such as employment subsidies, tax relief, and cash transfers—have enabled people to live with containment measures and have prevented a deeper recession. The degree of government support, however, varied greatly across countries, with distinct effects on household incomes (Figure 1.5). Advanced economies, and a few emerging markets, provided the largest support. In some countries, disposable income grew, mainly reflecting governments' direct support to households that more than compensated for the fall in market income (*Canada, United States*). In other countries, government support was provided indirectly, through job-retention schemes, thereby reducing or preventing a fall in wage incomes. In some cases, it helped keep household income broadly stable (*France, Germany, United Kingdom*), whereas in others it limited the fall (*Italy, Spain*). Government measures had a limited effect on cushioning the decline in people's income in low-income developing economies,

Figure 1.5. Changes in Household Income, 2020
(Percent of 2019 disposable income per capita)



Sources: Australian Bureau of Statistics; US Bureau of Economic Analysis; Organization for Economic Co-operation and Development; Statistics New Zealand; World Economic Outlook database; and IMF staff calculations.

Note: Gross disposable household income is reported. Market income includes gross operating surplus, mixed income, compensation of employees, and net property income. Direct fiscal support includes current taxes on income and wealth, social benefits, and social contributions, and does not include support channeled to firms that indirectly supported households such as job retention schemes. Other includes personal current transfers. All quantities are per capita and converted into 2019 prices using the Consumer Price Index. Data labels use International Organization for Standardization (ISO) country codes.

amid large informal sectors and low social protection coverage.⁹

Although global poverty increased significantly in 2020, government support has helped limit the rise in—or promote the reduction of—poverty in some countries. For example, pandemic-related support prevented a rise of poverty in the *United States* (Figure 1.6, panel 2; Box 1.1). The US Supplemental Poverty Measure rate from the US Census Bureau, which accounts for government assistance, was 9.1 percent of the population in 2020, 2.6 percentage points lower than in 2019. In *Brazil* poverty fell sharply but temporarily in 2020 mainly as a result of the emergency social assistance program (Figure 1.6, panel 1; Box 1.1; Online Annex 1.2). Similarly, Neri (2021) estimates that the number of poor individuals in *Brazil* decreased from 23 million in 2019 to 9.8 million in September 2020, but the number rose sharply in early 2021 to around 27.7 million as the exceptional government support was reduced. In *Belgium, Italy, Spain*, and the *United Kingdom*, simulations suggest that fiscal support substantially lessened the shock and may have prevented a rise in inequality but not an increase in poverty—according to an early analysis based on preliminary data (Cantó and others 2021).

Despite large government transfers, private consumption declined, reflecting mobility restrictions and precautionary motives, and household savings rose sharply. The relative contributions of each driver to the rise in savings vary across countries (Figure 1.7). In the *United States*, direct government transfers to households played the most important role in 2020 and early in 2021. Low-income households experienced the largest percentage gains in net savings in 2020 (Figure 1.8), while also increasing consumption. In the *European Union*, consumption restraint and excess saving have been more protracted up to 2021. In *Mexico*, where government support was limited, the increase in household savings was driven by larger consumption cuts and personal transfers and remittances from abroad.

Governments now face the challenge of managing the potential economic effect of excess savings. These excess savings (above prepandemic trends) amount to approximately \$2.5 trillion in the *United States* and \$1 trillion in the *European Union* during 2020–21 (Figure 1.9). These savings could now help

⁹For example, Lastunen and others (2021) analyzed a sample of African countries and Avellaneda and others (2021) analyzed Andean economies.

buffer the effect of the higher inflation and lower growth but, in some cases, could add to inflationary pressures if spent quickly. Another challenge relates to the time-bound nature of poverty support programs that can also meet long-term structural needs—when such support ends, poverty rates could rise. This is a risk given the high level of uncertainty and rise in energy and food prices that would disproportionately affect the most vulnerable households.

Debt, Inflation, and Fiscal Policies

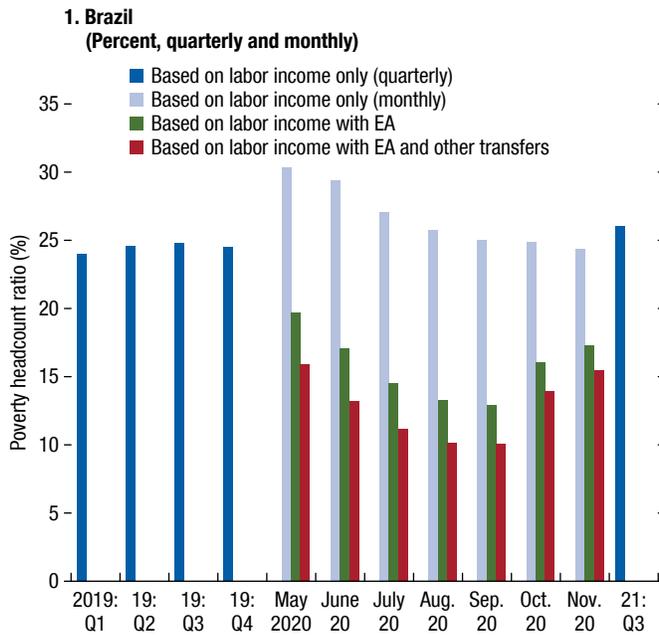
Inflation has important implications for public finances and policies, which depend on how persistent higher inflation is and how monetary policy responds. Although inflation surprises can improve debt dynamics, unexpected inflation cannot last. In the longer run, preserving the special status of government debt as the safe asset of reference requires maintaining price stability.

The initial effect of inflation in 2021 was a reduction in debt-to-GDP ratios. Surprise inflation—the difference between actual and projected inflation rates—contributed to an average decline in global debt projections of around 2 percent of GDP relative to 2020, shaving about 1.8 percentage points off 2021 public debt to GDP ratios in advanced economies and 4.1 percentage points off in emerging markets excluding *China* (Figure 1.10). The war in *Ukraine* has caused a further unexpected rise in food and energy prices, with additional effects on debt ratios. Moderate upward inflation surprises can also reduce primary deficits in the short run. As taxes due are calculated based on nominal incomes, revenues tend to mechanically improve with nominal GDP growth—albeit for a limited time because a share of tax revenues depends on lagged activity. The 2022 fiscal balance may benefit from higher inflation. A cross-country analysis suggests that a surprise of 1 percentage point in the annual inflation rate could increase nominal revenues by 0.8 percent in emerging markets and 0.3 percent in advanced economies (Figure 1.11). By contrast, nominal spending reacts less to moderate surprises in inflation given that it is usually precommitted in nominal terms (Patinkin 1993). The evidence suggests that inflation surprises are associated with lower fiscal deficits in the short term, though spending pressures are likely to rise over time (Online Annex 1.3).

Even so, the rise in inflation is likely to be followed by rising interest rates and higher debt burdens.

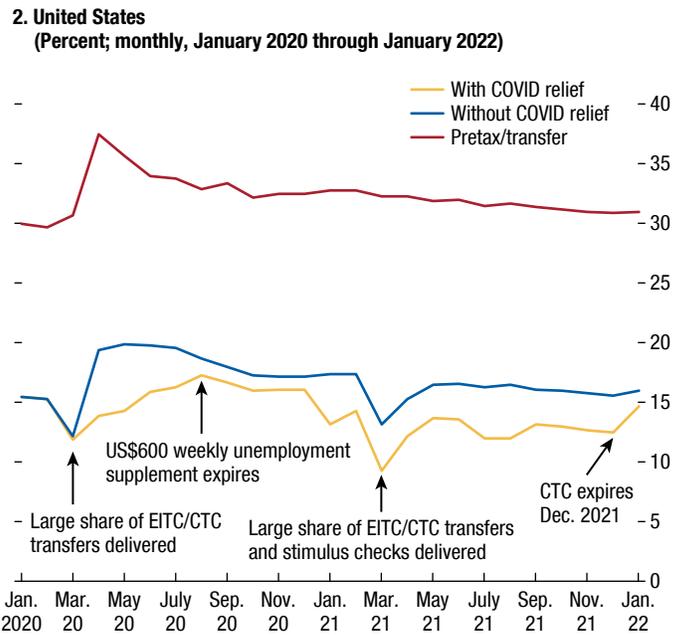
Figure 1.6. Poverty Rates for Brazil and the United States, 2020–21

The emergency cash assistance (Auxílio Emergencial) and other social transfers reduced poverty.



Sources: PNAD COVID and PNAD Continua; and IMF staff calculations.
 Note: Estimates are based on international upper-middle-income poverty lines (\$5.50 in 2011 PPP), also used by Brazilian Institute of Geography and Statistics (IBGE). All poverty measures include earned labor income. Pre-COVID-19 poverty headcount ratio is based on reported labor income in PNAD Continua. Quarterly transfers for years before 2020 are not available in PNAD Continua. Other social transfers considered in the calculation of poverty headcount ratio from May through November 2020 include, in addition to the EA, Bolsa Familia, income from donations, alimony, income from retirement, unemployment insurance and others (like rent).

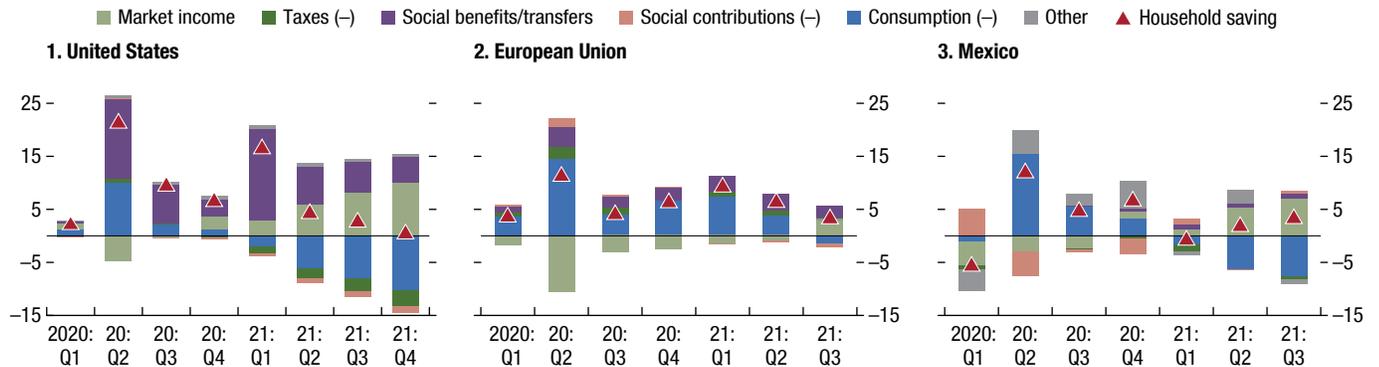
Transfers, including the CTC, lowered poverty but the extended CTC ended in December 2021.



Source: Center on Poverty and Social Policy, Columbia University.
 Note: The reported monthly measures of poverty are estimates of the Supplemental Poverty Measure and official US poverty measure based on a family unit's monthly income that are reported annually with a considerable lag. The monthly measures of poverty provide close to real-time estimates of the economic well-being of US households, with a lag of two weeks. For full details, see Parolin, Curran, Matsudaira, Waldfogel, and Wimer (2022). CTC = Child Tax Credit; EITC = earned income tax credit.

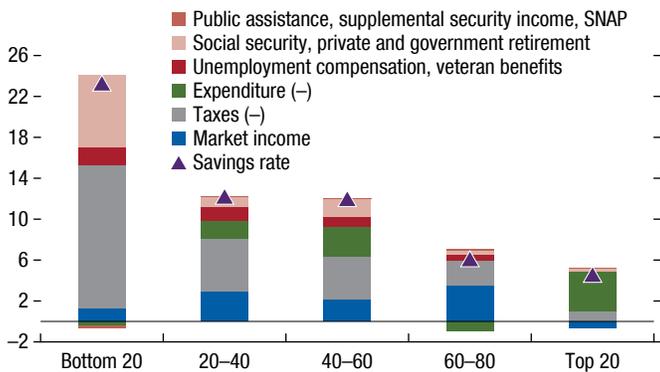
Figure 1.7. Contributions to Changes in Household Savings, 2019–21

(Percent of country-specific disposable income as of the fourth quarter of 2019)



Sources: Bureau of Economic Analysis; Federal Statistical Office; National Institute for Statistics and Geography; and IMF staff calculations.
 Note: Savings and components are shown as cumulated changes from the fourth quarter of 2019. Market income includes gross operating surplus, mixed income, compensation of employees, and net property income. Other includes personal current transfers and adjustment for the change in net equity in pension funds.

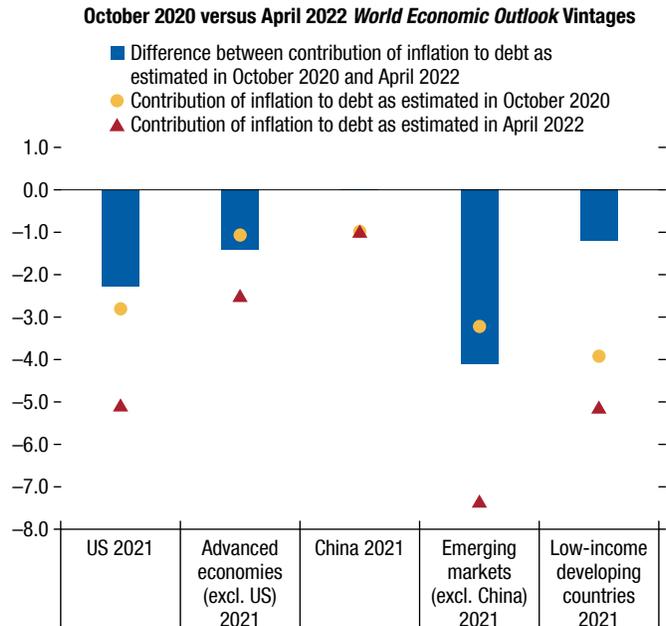
Figure 1.8. United States: Contributions to Changes in Household Savings, by Income Quintile, 2020
(Percentage of 2019 income after taxes)



Sources: Consumer Expenditure Survey; US Bureau of Labor Statistics; and IMF staff calculations.
Note: Savings are defined as income after taxes minus total expenditure. Market income includes wages and salaries, self-employment income, interest, dividends, rent, property income, and other income.

As monetary policy tightens to curb inflation, sovereign borrowing costs will rise. Evidence suggests that the effect of domestic monetary policy changes on sovereign debt service is heterogeneous across countries. One important factor is the debt profile (for example, maturity, currency denomination, and types of instruments). Fixed-rate long-term domestic currency denominated debt accounts for 60 percent or more of the government debt in a sample of advanced economies (Figure 1.12), whereas foreign-currency-denominated, short-term, floating rate, or inflation-indexed debt are predominant for governments in most emerging markets. When interpreting these data, it is important to consider the broader public sector (including central banks), however. Through quantitative easing (that

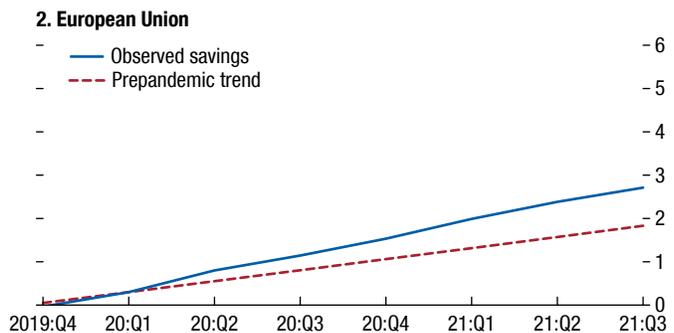
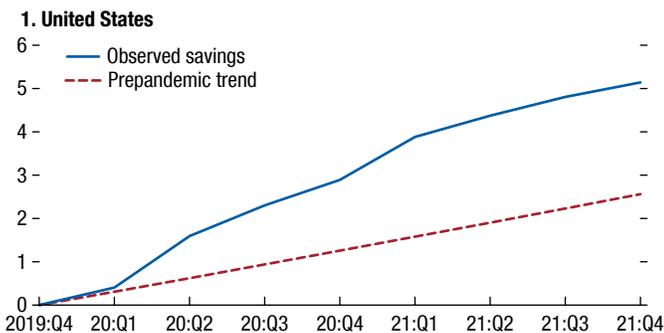
Figure 1.10. Contribution of Inflation to Public Debt Ratios: Predicted versus Actual
(Percent of GDP)



Sources: IMF World Economic Outlook Database; and IMF staff calculations.
Note: Inflation is defined as the percentage change in GDP deflator. The contribution of inflation to debt in October 2020 is estimated with the World Economic Outlook October database vintage.

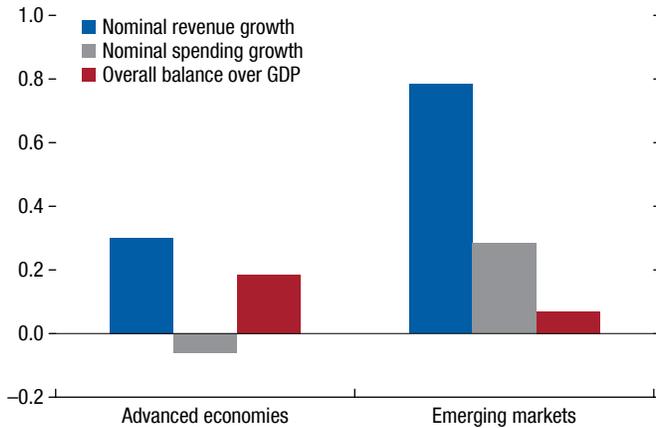
is, a central bank's purchase of government bonds), a sizeable portion of fixed rate long-term debt in some advanced economies is mirrored by larger short-term public sector liabilities (bars with diagonal lines in Figure 1.12). This increases the vulnerability of the public sector in those countries to interest rate rises (for example, by affecting profits of central banks when interest rates rise).

Figure 1.9. Excess Gross Household Savings Rose Significantly in Advanced Economies
(Trillions national currency, cumulative sum since the fourth quarter of 2019)



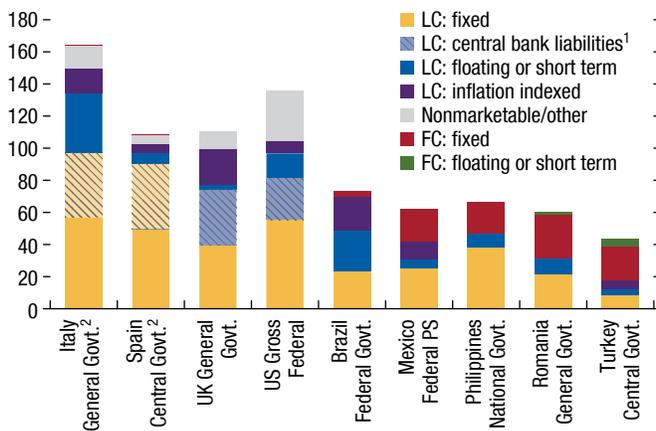
Sources: Bureau of Economic Analysis; Eurostat; and IMF staff calculations.

Figure 1.11. Short-Term Response of Fiscal Flows to Within-Year Inflation Surprises
(Percent, same-year surprises)



Sources: *World Economic Outlook* October 1992–2020 issues; and IMF staff calculations.
 Note: The bars show the average of estimates based on surprises to the average headline CPI growth and GDP deflator growth. Regressions control for the growth rate of private demand and include country and year fixed effects. The sample excludes oil exporters, financial centers, periods of historical revisions to the entire time series (for example, System of National Accounts updates), and observations with regressors outside their 5th to 95th percentiles.

Figure 1.12. Government Debt Composition for Selected Countries
(Percent of GDP)

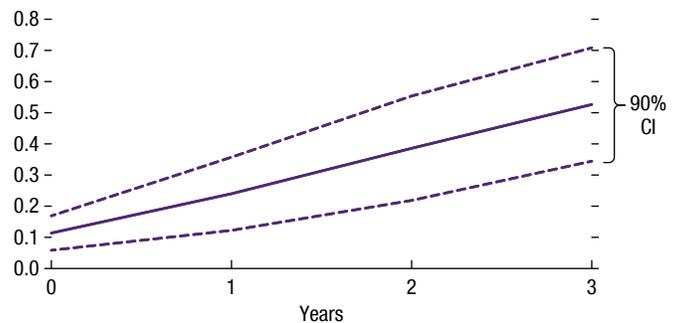


Sources: Haver; FRED; and IMF staff calculations.
 Note: Mexico FC debt as of the end of 2020; Brazil, Mexico, Philippines, and Romania financial corporation debt are assumed to be long term and fixed. Bars with diagonal lines indicate the portion of fixed rate long-term debt that has been converted into short-term public sector liabilities through quantitative easing in advanced economies.
¹Counterpart to bills, notes, and bonds purchased by central bank.
²The hatched yellow portion of the bars represents fixed long-term debt held by the European Central Bank that generates short-term liabilities for the Eurosystem.

A simple cross-country analysis suggests a sizable pass-through of short-term policy rates to the effective sovereign interest rate (average interest rate on the stock of sovereign debt). On average for advanced economies, for each increase of 100 basis points in the policy rate, the effective interest rate for the government rises by about 30 basis points one year later. For emerging markets, the median pass-through is smaller, but there is wide dispersion across countries, with some having a pass-through above one (that is, borrowing costs would increase more than proportionally to rises in policy rates). This finding could be related to differences in the monetary policy framework, sensitivity to global financial conditions, sovereign risk premium, and exchange rate movements, among other factors.

Furthermore, a rise in inflation volatility would add pressure on borrowing costs as investors require a higher premium for long-term debt (Rudebusch and Swanson 2012). This could be amplified as some central banks face a difficult choice between continuing to support the economy and controlling inflation. A cross-country analysis suggests that an increase of one standard deviation in inflation volatility can increase long-term government bond yields by 0.5 percentage points in 3 years, and this increase tends to be higher when public debt is higher (Figure 1.13; Online Annex 1.3). More volatile inflation could also depress investment and growth, eventually adversely affecting fiscal space (Choi and others 2022). Although the surprise rise in inflation may have provided short-term relief for fiscal accounts, the effects of higher and

Figure 1.13. Response of Market Sovereign Interest Rate to Inflation Volatility Shocks
(Percentage points)



Sources: Jordà, Schularick, and Taylor 2017; Ha, Kose, and Ohnsorge 2021; Mauro and Zhou 2021.
 Note: The sample is from 1975 to 2017, including 16 advanced economies. The regressions are based on a local-projection method for a dynamic panel. Country and year fixed effects are included.

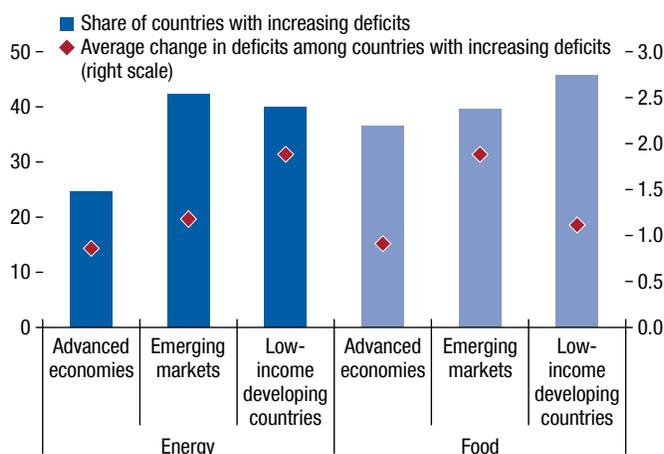
persistent inflation could reverse those gains and undermine financial stability and medium-term economic growth. Historical episodes where moderately high inflation helped reduce public debt substantially (for the *United States*, see Hall and Sargent 2022) depended on circumstances that are unlikely to be seen now. Such events have often relied on financial repression that depressed real returns on domestic sovereign bonds even when inflation was anticipated (Reinhart and Sbrancia 2015; Best and others 2020).¹⁰ However, the COVID-19 crisis may not lead to the same pattern because the shorter maturities of consolidated public sector debt, higher degrees of inflation indexation, and availability of alternative investment opportunities increases the chances that higher inflation would lead to higher sovereign interest rates. The risks would also be high. Persistently high and volatile inflation would unanchor inflation expectations, disrupt economic activity, and undermine the credibility of central banks. In turn, this would put further pressure on fiscal accounts through higher borrowing costs and, when inflation is particularly high, lower tax revenue ratios.

Managing the Effects of High Energy and Food Prices

Rising energy and food prices will put pressure on the budget of families and could lead to a food crisis in some countries. Governments are taking actions to help alleviate the burden on vulnerable households, ensure food security, and limit risks of social unrest. Many countries have announced measures to limit the rise in domestic prices, including by cutting taxes or granting subsidies, or generalized transfers to households (Box 1.2). However, many of these actions can have undesirable consequences and large fiscal costs. As many countries are not allowing domestic prices to adjust, these actions can exacerbate the imbalances between global demand and supply, putting further upward pressure on international prices, and leading to energy or food shortages. This will hurt further low-income countries that import energy and food and have less fiscal space. By contrast, allowing the pass-through of higher international prices to domestic prices would also create the right incentives to adjust demand (for example, promote more efficient use of

¹⁰Financial repression is understood as policies to channel to governments funds that, in a deregulated market environment, would go elsewhere (Reinhart and others 2015).

Figure 1.14. Fiscal Performance during Energy and Food Price Booms, 1991–2018
(Percent and percentage points of GDP)



Sources: IMF International Financial Statistics Database; World Economic Outlook Database; and IMF staff calculations.

Note: For energy booms, oil exporters are excluded. Increase in deficit during booms is calculated as an average annual increase in deficit (primary deficit for advanced economies and emerging markets, overall deficit for low-income developing countries) over the period between the year before the start of the boom and the second year of the boom, relative to the average annual change in deficit over 1991–2018 for all countries in the corresponding income group. Booms are identified using the Harding-Pagan algorithm. Energy includes coal, natural gas, crude oil, propane, gasoline, and heating oil.

energy) and supply (for example, invest in renewable energy or increase production of food). In addition, many of the announced measures have been untargeted (such as general fuel subsidies) and will be costly, contributing to higher fiscal deficits as in past episodes of rising commodity prices (Figure 1.14).

While policies will need to be tailored to country-specific circumstances, fiscal support should be designed in a way that preserves appropriate market incentives and contains costs, especially in countries with limited fiscal space. The following strategies would help governments to achieve these objectives:

- *Targeted and direct support to vulnerable households, while allowing domestic prices to follow international prices.* Generalized price subsidies are costly, crowd out productive spending, reduce producer incentives, lead to overconsumption and, in case of energy subsidies, benefit disproportionately higher income households. By supporting those in need while allowing domestic prices to move in tandem with international prices, governments can avoid these pitfalls.
- *Governments with existing energy or food subsidies should gradually pass-through international prices to retail prices especially if social safety nets are not well developed or timely expansion is not feasible.*

Price increases could also be sequenced by product (for example, gasoline versus liquefied petroleum gas (LPG), which is also used for cooking) depending on the extent to which the product is used by lower versus higher income groups. The pace of pass-through should be relatively fast to avoid distortions and large fiscal costs.¹¹ In the intervening time, capacity should be built to enhance social safety nets against future shocks. If food provision is at risk and cash transfers are not viable, governments could resort to food distribution.

- *Countries with strong social safety nets could use targeted and temporary cash transfers to low-income and vulnerable groups.* They can provide targeted transfers relying on existing social safety nets or information from other existing systems. Cash transfers unconditioned on the extent of use of a product are desirable as this does not distort relative prices and prevents overconsumption. Within the group of conditioned benefits (for example, vouchers and discounts on energy bills), lump-sum benefits are preferred over proportional benefits as they are more progressive and less distortive.
- *Countries with weak social safety nets could expand the most effective programs and leverage digital methods.* Digital tools can help to identify eligible households and provide delivery mechanisms, such as smart cards or mobile money (IMF 2020). In some cases, targeting by geographic region or age could be considered. Governments could also expand school feeding programs, reduce education and health fees, or review public transport subsidies if coverage is inadequate.
- *Governments could also take measures in the markets for foodstuffs and fertilizers.* They could release food reserves to partially offset short-term supply shortages. Similarly, policymakers should consider whether excessive incentives are in place to use corn for biofuel production rather than food supply (Glauber and Laborde 2022).

International cooperation is critical. The United Nations' Food and Agriculture Organization assesses those 44 countries' need for external assistance for food, and their situation could worsen as a result of

¹¹For countries with large differences between domestic and international prices, the pace of pass-through will need to be more gradual depending on the existing price gap, the available fiscal space, and the ability to put in place mitigating measures. The phased price increases should be embedded in a broader reform strategy to eliminate subsidies.

higher food prices. Low-income developing countries are more subject to supply shortages especially if their fertilizer costs significantly increase—marginal yield gains from fertilizers are higher in low-income developing countries than in advanced economies. A multidonor funding vehicle could make international support for food security more coherent. For example, in response to the 2008 food price spike, the World Bank launched the Global Food Crisis Response Program, which provided grants to the poorest and most vulnerable countries. In 2010, the Group of Twenty (G20) countries launched the Global Agriculture and Food Security Program, which pooled donor resources to reduce hunger and support agriculture in low-income developing countries through productive and social investments.

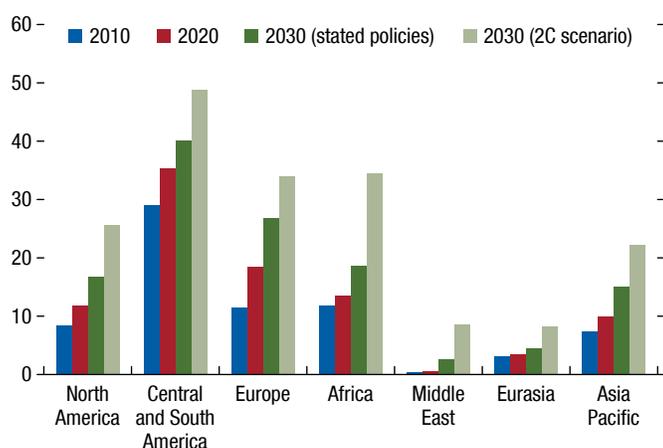
Countries should avoid unilateral actions that increase global food prices. Export restrictions can be harmful to global food security and collectively counterproductive if decided unilaterally. They are especially problematic when they concern (1) upstream products in production processes, such as staple foods and (2) when economies imposing the restrictions hold a sizable share of the global market. In the long run, export prohibitions may also adversely affect the countries imposing restrictions. Lower domestic prices can trigger an international domino effect resulting in higher prices for other food products that these countries import. They can also reduce production incentives and increase incentives for smuggling to countries with higher prices. Instead, countries should work together to develop sustainable, inclusive, and efficient food systems.

The large increases in fossil fuel prices also highlight the importance of taking actions to transition to clean and renewable energy sources. Although meeting short-term needs will likely require using all types of energy, such urgent responses should not lead to more permanent use of fossil fuels nor detract from efforts to promote investment in renewable energy sources and greater energy efficiency (Figure 1.15).

Policy Conclusions

Governments face difficult choices amid a sharp rise in uncertainty caused by the war in *Ukraine* and surging and volatile commodity prices. Governments should focus on the most urgent needs including ensuring access to food by the most vulnerable individuals. Failing to tackle these pressures could lead to

Figure 1.15. Share of Renewable Sources in Total Energy Supply
(Percent of total energy supply)



Sources: International Energy Agency; and World Energy Outlook 2021.

Note: The 2030 2C scenario refers to the International Energy Agency scenario consistent with keeping global warming below 2°C.

social unrest. The rise in spending pressures calls for commensurate actions to mobilize domestic revenues. At the same time, fiscal policy must operate amid a slowing economic recovery, rising interest rates as central banks tackle elevated inflation, and increasing debt vulnerabilities. Setting fiscal strategies to ensure medium-term sustainability amid high uncertainty, anchored on credible fiscal frameworks, and accompanied by robust contingency plans, will help communicate policies and reassure financial markets, limiting the rise in borrowing costs.

Marked divergences across countries call for diverse fiscal strategies. In the economies hardest hit by the war in *Ukraine* and by the sanctions on *Russia*, fiscal policy will need to respond to the humanitarian crisis, including supporting war refugees, and to address disruptions in energy and food supply. Given rising inflation and interest rates, fiscal support should preferentially be targeted to those most affected and priority areas. However, if economic activity deteriorates significantly, broader and temporary fiscal support could be appropriate for countries with fiscal space.

For those countries where economic growth is stronger and inflation pressures remain elevated, fiscal policy needs to shift from exceptional support in response to the pandemic to normalization. Such strategy would help reduce demand pressures, helping central banks to contain inflation. Amid unusually high uncertainty,

automatic stabilizers (for example, unemployment insurance) provide a first line of defense while fiscal policy remains attuned to short-term developments. In many emerging markets and low-income developing countries, governments face especially difficult trade-offs. Higher inflation and tightening global financial conditions call for greater fiscal prudence. However, fiscal support is needed for countries that will be affected the most by the rising in commodity prices and where the recovery was already weaker. In countries with tight financing conditions or high risk of debt distress, governments will need to prioritize spending and raise revenues to reduce vulnerabilities while considering distributional effects, including the Sustainable Development Goals agenda. Commodity exporters that benefit from higher prices should seize the opportunity to rebuild buffers, given inflationary pressures and the high uncertainty around commodity prices.

Both the pandemic and the war in *Ukraine* highlight the need for global initiatives to solve global crises. Unilateral actions could worsen the crisis (for example, restricting exports of food could increase risk of food shortages). International cooperation will lead to better solutions to address the risks and costs of energy and food disruptions—including addressing supply constraints. Cooperation is also crucial to better prevent and mitigate potential future pandemics and other health-related crises. On the climate agenda, cooperation, including on carbon pricing (Chapter 2), would also facilitate a faster and smoother transition. Low-income developing countries face increased fiscal strain and need support from the international community to manage the pressures from high energy and food prices.

Likewise, international cooperation is needed to support refugees. As of April 3, more than 4.2 million individuals have fled *Ukraine* since the start of the war, adding to the large numbers of refugees from previous wars. Countries that have admitted refugees could face significant pressures, and international coordination could help.¹² Given likely traumas and skill mismatches, they need a whole-of-the-government approach including health care (Schilling and others 2017) and social support. Streamlining administrative

¹²While migrants tend to contribute more to taxes and contributions than governments spend on their social protection, health, and education on average (OECD 2021b), the arrival of refugees is costly.

procedures would accelerate their accession to the job market (IMF 2016a). Higher spending on vocational training—such as language courses—and on active labor market policies promotes greater employment growth after an immigration shock (IMF 2020). Furthermore, spreading the flow of refugees across countries and helping refugees to move to places with labor demand for their skills could also facilitate access to jobs (Koczan and others 2021). Most of these policies would reduce upfront net fiscal costs thanks to faster access in job markets.

The Reform Agenda Needs Action Now

Governments cannot afford to delay critical reforms that tackle climate change, address spending pressures from aging, and promote a more inclusive and sustainable economy. Moving toward a more diverse, clean, and renewable energy matrix will help the planet and be crucial for economies to function well by shielding them from volatile fossil fuel prices.

Spending on social protection and on essential public services has increased during the COVID-19 pandemic calling for enhancing revenue mobilization. Limited access to finance will make it harder for countries to make progress toward sustainable development goals (Benedek and others 2021; Duarte Lledo and Perrelli 2021). Furthermore, the war in *Ukraine* can generate durable spending pressures to provide security. This will require bold domestic revenue mobilization reforms. Modernizing tax and customs administrations and improving their efficiency, including greater digitalization, would strengthen compliance, facilitate trade, and secure additional revenue. Broadening and diversifying the tax base would increase revenues while ensuring fairer competition as businesses would face more even tax costs. Enhancing international cooperation could also help (Chapter 2). Also, countries with strong external positions could redirect some of

their special drawing rights to help countries in need, providing room for spending in priority areas.¹³ For countries that need urgent and comprehensive debt treatments, it is critical to make the G20 Common Framework fully operational.¹⁴

Better spending prioritization (education, health, and public investment) would help to overcome the effects of the pandemic and to address climate change (Box 1.3). The pandemic has further highlighted the need to improve safety nets (Box 1.1; Beazley, Barca, and Bergthaller 2021). Better targeting is needed to ensure higher coverage and adequate provision of public services. This crisis has also shown that social protection systems need to be flexible and responsive to build resilience to future shocks (World Bank 2021b). Targeting support for low-income earners and informal workers—and adopting mobile-based platforms for beneficiary identification, registration, and benefit payments—are promising ways to achieve these goals. The pandemic and other adverse shocks have also taught us the importance of investing in more resilient health care, social protection, infrastructure, and production systems. Meeting these challenges requires mobilizing revenues through domestic reforms and international cooperation (Chapter 2).

¹³Countries with strong external positions could voluntarily channel some of their special drawing rights to poorer and more vulnerable countries. These special drawing rights could be used to expand existing funds (Poverty Reduction and Growth Trust), helping to finance new IMF-administered funds (for example, Resilience and Sustainability Trust), and channeled to prescribed holders (for example, World Bank, some regional central banks, and multilateral development banks)—see IMF 2021.

¹⁴At the end of 2021, the IMF approved debt service relief from the Catastrophe Containment and Relief Trust for 25 countries totaling a cumulative debt service relief of about \$1 billion over two years. The Debt Service Suspension Initiative was extended until December 2021 and delivered more than \$10.3 billion in debt relief to more than 40 eligible countries. Several countries have already used all or part of their new special drawing rights allocation for budget support, including funding health and social programs (*Chad, Mauritania, Rwanda, Senegal*).

Box 1.1. Social Protection and Poverty during the Pandemic

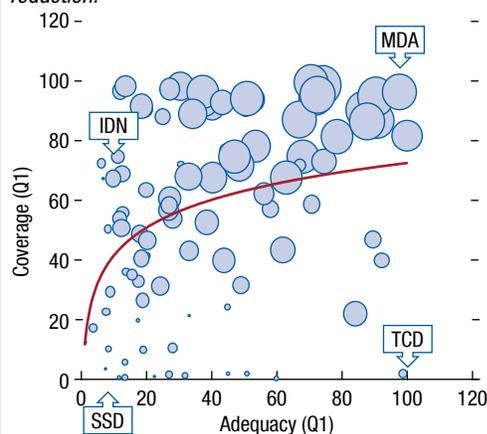
The pandemic has reversed the trend decline in global extreme poverty (the number of people living on \$1.90 a day or less). On the basis of growth in per capita GDP (Online Annex 1.1), and assuming inequality remained broadly stable, global extreme poverty is expected to be about 70 million people higher in 2021 relative to prepandemic projections. If inequality rises, poverty will be even higher (Online Annex 1.1). For example, an increase of 1 percent in the Gini coefficient of income inequality would add 20 million more people in extreme poverty in 2021. At the same time, well-targeted government support could limit the effect on poverty (Online Annex 1.1). Governments need to be cautious in withdrawing the exceptional support to the most vulnerable households, especially given higher inflation.

Fiscal support has allowed many countries to limit the rise in poverty, but results varied with the size of the support, the design of prepandemic social safety net systems, and changes made during the pandemic. In *Brazil*, the emergency assistance program (*Auxílio Emergencial*) amounted to 4 percent of GDP in 2020. Temporarily, it more than offset the large decline in labor incomes when benefit levels and coverage were at their highest (Figure 1.6, panel 1). Moreover, it is estimated to have cushioned the fall in economic activity (Cunha and others 2022). As the coverage was lowered and benefits declined, poverty rose again (Online Annex 1.2; Neri 2021). In the *United States*, pandemic-related measures (enhanced earned income and child tax credits and stimulus checks) reduced poverty by half to about 9 percent by March 2021 (Figure 1.6, panel 2). With the expiration of the child tax credit in December 2021, poverty is estimated to have risen from 12½ percent to about 15 percent in January 2022 (Parolin and others 2022). In other countries government support was limited. For example, *Mexico* employed a modest increase in support in 2020 (0.7 percent of GDP) compared with other emerging market economies (Hannan and others 2021). The pandemic increased social vulnerabilities as extreme poverty rose by about 2 million between 2018 and 2020, but more would have been poor without social transfers (CONEVAL 2021).

The available cross-country evidence from prepandemic social safety nets show that high coverage and adequacy of social assistance programs matter for poverty reduction (Figure 1.1.1; Online Annex 1.2). But countries' experiences differ significantly reflecting several factors, including financing and capacity constraints. For example, *South Sudan's* social protection has a negligible poverty effect given that it has very low coverage

Figure 1.1.1. Poverty and Social Safety Nets
(Effectiveness of social safety nets, percent)

High coverage and adequacy matter for poverty reduction.



Sources: World Bank ASPIRE database; and IMF staff calculations.

Note: A larger size of bubble represents greater poverty reduction. The red line is the fitted relationship. Poverty reduction is defined as the difference between poverty headcount after and before transfers divided by poverty headcount before transfers. Data are taken from the most recent available year, ranging from 1999 to 2019 and cover 94 countries. Adequacy for the first quarter is the size of transfer amount received by those in the bottom quintile as a share of the pretransfer total income/expenditure of all beneficiaries in the first quarter. Coverage for the first quarter is the share of the bottom quintile that receives a social assistance benefit as a fraction of all individuals in the first quarter. IDN = Indonesia; MDA = Moldova; SSD = South Sudan; TCD = Chad.

and adequacy, *Chad* performs slightly better with high adequacy although low coverage, whereas *Moldova* has a higher poverty effect with both high coverage and adequacy. Higher informality is also associated with a reduction in the impact of social protection and labor programs in poverty alleviation (Online Annex 1.2.).

More generally, the fiscal response to the pandemic ushered experiments worldwide in introducing new social protection programs, enhancing the existing social protection system, and changes in coverage and adequacy of cash transfers. In response, countries quickly adjusted their social protection measures. From the onset of the pandemic to February 2022, vertical expansions (increase in benefits) accounted for 15 percent of measures, horizontal expansions (increase in coverage) 75 percent of measures, and both vertical and horizontal expansions in 4 percent of measures (Gentilini and others 2020).

Box 1.2. Measures in Response to High Energy and Food Prices

Many countries have taken swift measures to mitigate the adverse effect on consumers and firms from the recent spike in international energy and food prices. Results of a survey of 94 countries show that more than two-thirds of advanced economies in the survey (total 29 countries) announced at least one spending measure since the beginning of the year while emerging and developing economies have announced fewer new policy measures (Table 1.2.1).¹

Many countries limited the pass-through of higher world prices to domestic consumers, especially those that already relied on energy or food subsidies.² They maintained the existing programs, kept the level of administered prices unchanged, or announced that they would freeze prices on some energy and food items. As a result, subsidies in these countries are expected to rise substantially in 2022.

- **Energy.** Several oil exporters could see significant rises in fuel subsidies as they usually shield domestic prices from international prices to a large degree and maintain the lowest retail prices globally on average (*Algeria, Ecuador, Kuwait, Nigeria*

¹Of the 94 countries surveyed, 16 were in Asia, 21 in the Middle East and North Africa, 15 in sub-Saharan Africa, 9 in the Western Hemisphere, and 33 in Europe. The survey was done in March 2022.

²About 60 percent of the reported countries (38 countries) have existing energy subsidies and 30 percent have existing food subsidies (19 countries); almost one-quarter of the countries have both energy and food subsidies.

announced that it would extend fuel subsidies for another 18 months. Oil-importing countries with fuel subsidies (*Burkina Faso, Cameroon*) had been adjusting prices on an ad hoc basis but not since the beginning of the year,³ despite rising international prices. Other countries have increased fuel prices to very different degrees (from a total of 6 to 40 percent) in recent weeks (*Sierra Leone, Sri Lanka, Tunisia*). Several countries have electricity subsidies that will rise if generation is based on fuel and electricity tariffs are not adjusted (*Djibouti, Guinea-Bissau, Iraq, Libya, Sri Lanka, Tunisia*).

- **Food.** In many cases, countries subsidize consumer prices (for example, *Egypt, Gabon, India, Indonesia, Iraq, Morocco, Sri Lanka*). Some use input subsidies for farmers such as for fertilizers and seeds (*India, Malawi, The Gambia*), vouchers and ration cards (*Egypt, Iraq*), and in-kind food distribution programs (*Djibouti, India*). Subsidies are provided mainly on staple foods such as wheat products (for example, *Burkina Faso, Egypt, Gabon, Iran, Jordan, Morocco*).

Several countries have announced new fiscal measures to provide support to households and firms. On tax, measures focus on lowering prices for consumers by reducing value-added tax rates for certain food items (*Poland, Turkey*) and energy (*Belgium, Italy, Turkey*), temporary exemption of federal taxes and

³As of March 21, 2022.

Table 1.2.1. Number of Countries That Announced at Least One New Measure Since the Beginning of 2022

	Advanced Economies	Emerging Markets	Low-Income Developing Countries	Oil Importers	Oil Exporters	Large Importers of Wheat from Russia/Ukraine ¹	Wheat Exporters ²
Spending measures	20	18	3	39	2	14	3
of which are cash transfer	6	4	1	11	0	5	2
Tax measures	15	17	2	31	3	11	3
Below the line	2	5	0	7	0	2	0
Other measures (trade bans, and so on)	0	5	0	5	0	3	0
Number of countries covered by the survey	29	46	19	78	16	41	5

Sources: IMF staff calculations.

¹ Using COMTRADE bilateral trade statistics, a country with more than 10 percent of the country's wheat imports from Russia and Ukraine combined is defined as "large importer of wheat from Russia/Ukraine."

² Using COMTRADE bilateral trade statistics, a country is defined as a "wheat exporter" if the share of a country's wheat export in global wheat exports is higher than 3 percent.

Box 1.2. (continued)

freeze of state taxes on fuels (*Brazil*), and a temporary reduction or exemption from excise taxes on energy products (*France, Korea, New Zealand, Serbia, Thailand*). Some countries announced a temporary reduction or suspension of import duties on food (*Brazil, Iraq, Turkey*) and on containers to alleviate the rise of shipping costs (*Costa Rica*). On the spending side, some countries announced support to vulnerable households through targeted cash transfers (*Denmark, Germany, Haiti, Latvia, Norway, Philippines, Sweden, United Kingdom*). In some cases, targeted transfers were accompanied by price freezes (*Dominican Republic, France*). In addition, countries announced subsidies to producers, such as an increase in transfers to energy state-owned enterprises (*Nepal*), oil importers and wholesalers (*Japan, Kosovo*), agricultural sector (*China, Turkey*), and taxis (*Brazil, Japan, Morocco*). Some countries have announced loans to energy and agricultural firms (*Dominican Republic, Germany, Serbia*) or eased loan conditions for affected firms (*Japan*).

Many of the announced measures create tension between the need to ensure affordable access to energy in the near term and the green transition. These include measures that reduce consumption taxes on energy products. Furthermore, some measures could encourage production and consumption of carbon-intensive energy. These measures aimed at further boosting coal production to reduce reliance on imported coals (*China*) or to sustain household consumption of coal briquettes through price subsidies (*Mongolia*). In contrast, some countries announced measures that aim at maintaining incentives for green transition, such as additional funding for the climate bonus for environmentally friendly vehicles (*Sweden*) and initiatives toward energy efficiency (*Norway, Luxembourg*).

Some countries have announced temporary export bans of staple foods (*Cameroon, Egypt, Moldova, Serbia, Turkey*) since January 2022. *China* relaxed import restrictions on Russian wheat imports.

Box 1.3. Toward Green Public Finance Management

Forceful fiscal actions are essential to transition to a greener and more climate-change-resilient economy. Governments will need to use a wide set of tools including carbon pricing, regulations, promoting renewable energy, and public investment in clean and resilient infrastructure (see the October 2019 and October 2020 *Fiscal Monitor*, and Chapter 2 in this issue). Assessing the effects of public policies in general on climate change, and managing fiscal risks stemming from climate change, are likewise crucial.

The integration of a climate-friendly perspective into public financial management (PFM) systems—or green PFM—is a key enabler of a greener recovery. The urgency and cross-cutting nature of climate change call for an adaptation of PFM practices to ensure the systematic promotion of fiscal policies that are responsive to climate challenges. Green PFM practices include the following examples:

- Requiring that national and sectoral development strategies are aligned with governments’ commitments on mitigation and adaptation to climate change.
- Preparing a medium-term fiscal framework that considers revenue and spending implications of climate policies.
- Setting requirements for the systematic analysis of the climate impact of new fiscal measures before their adoption.
- Identifying and monitoring climate change-related expenditure items in the budget.
- Publishing regular ex post reviews of climate outcomes of budget policies.

Few governments have begun implementing green PFM practices. Early adopters included low-income developing economies in South Asia (*Bangladesh, Nepal*) which, despite limited PFM capacity, started developing green budgeting in the late 2000s, with the support of the United Nations. Results have been encouraging, with greater awareness throughout the

government and a measurable increase in the climate relevance of their budgets. More recently, several advanced economies have adopted ambitious green PFM practices. Launched in 2019, France’s “green budget” is the most comprehensive initiative, requiring an ex-ante assessment of the environmental impact of all expenditures and the implementation of a scoring system according to their environmental impact, either positive or negative. Green PFM has also gained momentum on the international agenda through several initiatives, such as the Coalition of Finance Ministers for Climate Action and the Paris Collaborative on Green Budgeting of the Organisation for Economic Co-operation and Development (OECD). Even so, 60 percent of OECD countries do not yet implement any form of green PFM (OECD 2021a), and only 19 countries worldwide have implemented a form of climate budget tagging (World Bank 2021a).

Country-specific reform strategies, supported by capacity development, are needed to integrate climate priorities into PFM systems. Green PFM reforms require strong political backing, stewardship by ministries of finance, and coordination across levels of government. Governments should set strategic priorities consistent with their legal frameworks, their capacity and reform agenda. To support countries, the IMF has recently expanded its capacity development toolkit, with a green PFM framework providing a holistic view of entry points and opportunities for the integration of climate priorities into PFM frameworks (Gonguet and others 2021), and the introduction of a new climate change module to the IMF’s Public Investment Management Assessment framework (IMF 2021b), to help governments assess their infrastructure governance and set reform priorities for the management of climate-responsive public investment. The IMF Climate Macroeconomic Assessment Program also helps countries examine the macro-fiscal implications of climate change and their climate policies.

References

- Avellaneda, Andrés, Rodrigo Chang, Diego Collado, Holguer Xavier, Jara Tamayo, Andrés Míderos, Lourdes Montesdeoca, David Rodríguez, Javier Torres, and Omar Vanegas. 2021. “Assessing the Cushioning Effect of Tax-Benefit Policies in the Andean Region during the COVID-19 Pandemic.” CeMPA Working Paper Series 8/21, Institute for Social and Economic Research University of Essex, Colchester, Essex, UK.
- Barrett, Philip, Mariia Bondar, Sophia Chen, Mali Chivakul, and Deniz Igan. 2021. “Pricing Protest: The Response of Financial Markets to Social Unrest.” IMF Working Paper 21/79, International Monetary Fund, Washington, DC.
- Beazley, Rodolfo, Valentina Barca, and Martina Berghthaler. 2021. “How Might the Lessons from the Response to COVID-19 Influence Future Social Protection Policy and Delivery?” In *What’s Next for Social Protection in Light of COVID-19: Country Responses*. Brasília, Brazil: International Policy Center for Inclusive Growth.
- Benedek, Dora, Edward R. Gemayel, Abdelhak S. Senhadji, and Alexander F. Tieman. 2021. “A Post-Pandemic Assessment of the Sustainable Development Goals.” IMF Staff Discussion Note 2021/003, International Monetary Fund, Washington, DC.
- Best, Tom, Oliver Bush, Luc Eyraud, and M. Belen Sbrancia. 2020. “Reducing Debt Short of Default.” In *Sovereign Debt*, edited by S. Ali Abbas, Alex Pienkowski, and Kenneth Rogoff. Oxford, UK: Oxford University Press.
- Cantó, Olga, Francesco Figari, Carlo V. Fiorio, Sarah Kuypers, Sarah Marchal, Marina Romaguera-de-la-Cruz, Iva V. Tasseva, and Gerlind Verbist. 2021. “Welfare Resilience at the Onset of the COVID-19 Pandemic in a Selection of European Countries: Impact on Public Finance and Household Incomes.” *Review of Income and Wealth* (July): 1–30.
- Choi, Sangyup, Davide Furceri, Prakash Loungani, and Myungkyu Shim. 2022. “Inflation Anchoring and Growth: The Role of Credit Constraints.” *Journal of Economic Dynamics and Control* 134: 1–19.
- CONEVAL. 2021. “CONEVAL Presents the Multidimensional Poverty Estimates 2018 and 2020.” Communication No. 09. https://www.coneval.org.mx/SalaPrensa/Comunicadosprensa/Documents/2021/COMUNICADO_009_MEDICION_POBREZA_2020.pdf.
- Cunha, Daniel, Joana Pereira, Roberto A. Perrelli, and Frederik G. Toscani. 2022. “Estimating the Employment and GDP Multiplier of Emergency Cash Transfers in Brazil.” IMF Working Paper 22/55, International Monetary Fund, Washington, DC.
- Duarte Lledo, V., and Roberto A. Perrelli. 2021. “SDG Financing Options in Rwanda: A Post-Pandemic Assessment.” IMF Working Paper 21/115, International Monetary Fund, Washington, DC.
- Gaspar, Vitor, Paulo Medas, and Roberto A. Perrelli. 2021. “Global Debt Reaches a Record \$226 Trillion.” IMF Blog, December 15. International Monetary Fund, Washington, DC.
- Gentilini, Ugo, Mohamed Almenfi, Ian Orton, and Pamela Dale. 2022. “Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures.” World Bank, Washington, DC.
- Georgieva, Kristalina, and Ceyla Pazarbasioglu. 2021. “The G20 Common Framework for Debt Treatments Must Be Stepped Up.” IMF Blog, December 2. International Monetary Fund, Washington, DC.
- Glauber, Joseph, and David Laborde. 2022. “How Will Russia’s Invasion of Ukraine Affect Global Food Security?” IFPRI Blog, February 24. International Food Policy Research Institute, Washington, DC.
- Gonguet, Fabien, Claude Wendling, Ozlem Aydin, and Bryn Battersby. 2021. “Climate-Sensitive Management of Public Finances—‘Green PFM.’” IMF Staff Climate Note 2021/002, International Monetary Fund, Washington, DC.
- Ha, Jongrim, M. Ayhan Kose, and Franziska Ohnsorge. 2021. “Inflation during the Pandemic: What Happened? What Is Next?” CEPR Discussion Paper No. 16328, Centre for Economic Policy Research, London, UK.
- Hadzi-Vaskov, Metodij, Samuel Pienknagura, and Luca Antonio Ricci. 2021. “The Macroeconomic Impact of Social Unrest.” IMF Working Paper 21/135, International Monetary Fund, Washington, DC.
- Hall, George J., and Thomas J. Sargent. 2022. “Three World Wars: Fiscal-Monetary Consequences.” Unpublished report.
- Hannan, Swarnali A., Juan Pablo Cuesta Aguirre, and David Bartolini. 2021. “Social Spending in Mexico: Needs, Priorities and Reforms.” IMF Working Paper 21/244, International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2008. “Fuel and Food Price Subsidies—Issues and Reform Options.” IMF Policy Paper 08/299, International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2020. “Digital Solutions for Direct Cash Transfers in Emergencies.” IMF COVID-19 Special Series. International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2021a. “Not Yet on Track to Net Zero: The Urgent Need for Greater Ambition and Policy Action to Achieve Paris Temperature Goals,” IMF Staff Climate Note 2021/005, International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2021b. “Strengthening Infrastructure Governance for Climate-Responsive Public Investment.” IMF Policy Paper 2021/076, Washington, DC.
- Jordà, Oscar, Moritz Schularick, and Alan M. Taylor. 2017. “Macrofinancial History and the New Business Cycle Facts.” *NBER Macroeconomics Annual* 31 (1): 213–63.
- Koczan, Zsoka, Giovanni Peri, Magali Pinat, and Dmitriy Rozhkov. 2021. “The Impact of International Migration on Inclusive Growth: A Review.” IMF Working Paper 21/88, International Monetary Fund, Washington, DC.

- Lastunen, Jesse, Pia Rattenhuber, Kwabena Adu-Ababio, Katrin Gasior, Xavier H. Jara, Maria Jousté, David McLennan, Enrico Nichelatti, Rodrigo C. Oliveira, Jukka Pirttilä, Matteo Richiardi, and Gemma Wright. 2021. “The Mitigating Role of Tax and Benefit Rescue Packages for Poverty and Inequality in Africa Amid the COVID-19 Pandemic.” WIDER Working Paper 2021/148, UNU-WIDER, Helsinki, Finland.
- Mauro, Paolo, and Jing Zhou. 2021. $r-g < 0$: Can We Sleep More Soundly? *IMF Economic Review* 69 (1): 197–229.
- Neri, Marcelo. 2021. *Desigualdade de Impactos Trabalhistas na Pandemia*. Rio de Janeiro: Getulio Vargas Foundation.
- Organisation for Economic Co-operation and Development (OECD). 2021a. *Green Budgeting in OECD Countries*. OECD, Paris, France.
- Organisation for Economic Co-operation and Development (OECD). 2021b. “The Fiscal Impact of Immigration in OECD Countries Since the Mid-2000s.” *OECD Immigration Outlook*, Chapter 4. OECD, Paris, France.
- Parolin, Zachary, Megan A. Curran, Jordan Matsudaira, Jane Waldfogel, and Christopher Wimer. 2022. “Estimating Monthly Poverty Rates in the United States.” Poverty and Social Policy Discussion Paper, Center on Poverty and Social Policy, New York, NY.
- Parry, Ian, Simon Black, and Nate Vernon. 2021. “Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies.” IMF Working Paper 21/236, International Monetary Fund, Washington, DC.
- Patinkin, Don. 1993. “Israel’s Stabilization Program of 1985, or Some Simple Truths of Monetary Theory.” *Journal of Economic Perspectives* 7: 103–28.
- Pazarbasioglu, Ceyla, and Uma Ramakrishnan. 2021. “Sharing the Recovery: SDR Channeling and a New Trust.” IMF Blog, October 8. International Monetary Fund, Washington, DC.
- Redl, Chris, and Sandile Hlatshwayo. 2021. “Forecasting Social Unrest: A Machine Learning Approach.” IMF Working Paper 21/263, International Monetary Fund, Washington, DC.
- Reinhart, Carmen M., and M. Belen Sbrancia. 2015. “The Liquidation of Government Debt.” *Economic Policy* 30: 291–333.
- Rudebusch, Glenn D., and Eric T. Swanson. 2012. “The Bond Premium in a DSGE Model with Long-Run Real and Nominal Risks.” *American Economic Journal: Macroeconomics* 4 (1): 105–43.
- World Bank. 2021a. *Climate Change Budget Tagging: A Review of International Experience*. Washington, DC: World Bank.
- World Bank. 2021b. *Stress Testing Social Protection: A Rapid Appraisal of the Adaptability of Social Protection Systems and Their Readiness to Scale-Up—A Guide for Practitioners*. Washington, DC: World Bank.