CHAPTER 1

HELPING PEOPLE BOUNCE BACK

Introduction

A key role of government is to foster resilience—the ability for households and firms to recover from or successfully adjust to challenges such as macroeconomic crises, pandemics, climate change, or the cost-of-living squeeze associated with spikes in food and energy prices. Major crises such as the COVID-19 pandemic present the ultimate test of societal resilience. Many fiscal measures launched during the pandemic aimed to preserve the ability of people and firms to return to their activities before the crisis and to lay the foundations for a swift individual and collective bounceback.

Views on the appropriate fiscal response to adverse events have been reshaped by the experience gained during the COVID-19 pandemic and the global financial crisis that began in 2008. Previously, discretionary fiscal responses were deemed too slow or hard to unwind (Blanchard, Dell'Ariccia, and Mauro 2010; Blinder 2016), and automatic stabilizers—built-in mechanisms that raise spending or reduce taxes in a timely and temporary manner when adverse events occur—were considered sufficient. The two major global crises of the past decade and a half have led to a re-assessment. Fiscal interventions during the global financial crisis shored up private sector balance sheets and stimulated aggregate demand in advanced economies at a time when monetary policy was constrained because interest rates were nearly zero. During the unprecedented global shock of the pandemic, political consensus made it possible to deploy even more rapid, diverse, and novel measures. At the outset of the pandemic, governments and central banks served as financiers of last resort by guaranteeing firms' credit and liquidity. Many governments quickly provided cash transfers to support households—often not just poor households but also broader segments of the population.

This *Fiscal Monitor* explores how fiscal policy and institutions can make society more resilient to current and future large adverse shocks. Broadly, the topic encompasses a comprehensive list of potential challenges—including climate change and natural disasters, health care and pandemic preparedness, and equitable access to opportunities—and a set of fiscal tools and institutions whereby governments can bolster resilience. The report focuses on a narrower aspect: how to bounce back from large, widespread real income losses. Policies considered fall into three categories. The first includes support to households and workers who have lost, or are at risk of losing, their jobs or incomes. The second comprises measures to limit the adverse impact of large spikes in food and energy prices on the real incomes of households (especially those of low-income families). The third encompasses providing public support to firms to bolster their liquidity and solvency through direct lending, guarantees, and equity injections to prevent bankruptcies.

An early assessment of costs and effectiveness of policies undertaken during the first 2½ years of the pandemic can help strengthen policies to tackle current challenges and prepare for future adverse events. Policy trade-offs are at the forefront of the discussion. For example, the need for speedy discretionary action at a time of great uncertainty regarding the size and duration of a shock may come at the cost of limited targeting. Public guarantees and job support schemes may lead to market distortions that, if left unchecked, could hamper economic growth. Given that fiscal policy plays a more active role during large crises, the ability to provide substantial fiscal interventions during severe crises requires taking a longer-term perspective that includes building greater fiscal buffers in normal times. These considerations emphasize how important it is to prepare a comprehensive fiscal strategy in advance—with a clear rationale for each fiscal instrument—ready to deploy in time of need.

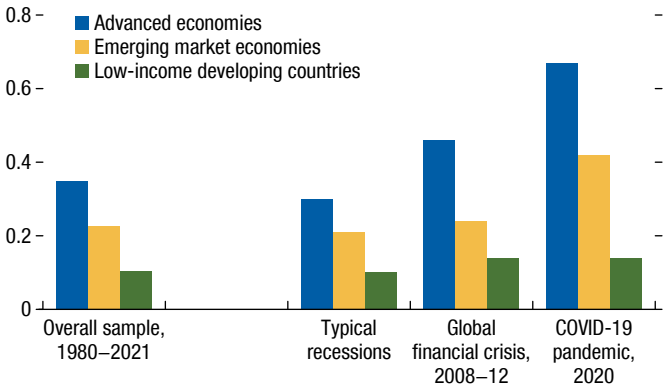
Fiscal Policy to Build a Resilient Society

The analysis in this *Fiscal Monitor* focuses on a subset of policies that help people and firms bounce back from job and income losses in the aftermath of major crises. It considers the costs, timeliness, and effectiveness of such policies. Preexisting inequities in access to basic public services such as education and health care often amplify the harm to individuals from these major crises.

Figure 1.1. Fiscal Policy Builds Resilience in Several Critical Areas

Source: IMF staff.

Figure 1.2. Fiscal Responses in Large Crises
(Estimated coefficients)



Source: IMF staff estimates (see Online Annex 1.1).
Note: The figure shows the average of time-varying coefficients by country income groups, based on panel regressions estimated on the sensitivity to GDP growth of the deficit-to-GDP ratio from 1980 to 2021. Typical recessions are defined as periods when individual countries' growth rates are below their own average levels over the previous three years.

More broadly, governments also build resilience by acting in several areas, such as strengthening health care systems and addressing climate change (Figure 1.1; see Box 1.1 for an overview and references).

Governments undertake fiscal policies and provide basic public services that attenuate any long-lasting harm from crises and ensuing reductions in income or employment. The recent surge in inflation, with spikes in food and energy prices, has increased the cost of living, particularly for low-income families. If safety nets are inadequate and public services such as health care or education insufficiently robust, the loss of real income or employment from a crisis can squeeze household budgets and push a family into a poverty trap, with worse health outcomes and curtailed school attendance for its children (Bellon, Pizzinelli, and Perrelli 2020; Brunnermeier 2021). Likewise, a severe fall in demand or loss of access to credit can push otherwise viable firms into bankruptcy. Tools that counter large drops in income and employment thus reduce the likelihood of lifelong harm from a broad set of adverse events (Box 1.1).

Fiscal policies have been more active during large crises. The increase in deficits (as a fraction of GDP) for each percentage point drop in real GDP growth was bigger during the global financial crisis and the COVID-19 pandemic than during typical recessions (Figure 1.2; Online Annex 1.1). Fiscal activism during major crises is even stronger when considering fiscal measures that are not immediately recorded in the deficit, such as government loans, guarantees, and equity injections to firms. For the global financial crisis, the stronger response can be partly explained by the fact that advanced economies were more adversely affected and monetary policy was constrained. The pandemic was instead a global shock, and fiscal policy aimed to protect lives and livelihoods rather than to sustain aggregate demand. Conventional macroeconomic policies that stimulate aggregate demand had limited capacity to restore employment and income, given that health concerns constrained household spending (Chetty and others 2020; Auerbach and others 2022). Fiscal responses to major crises were greater in advanced economies than in emerging markets or low-income countries, likely reflecting easier access to financing and perhaps better information about recipients of social programs, in view of a smaller informal sector. The more muted deployment of fiscal tools in emerging market and developing economies was constrained by limited fiscal space. This likely contributed to some scarring in growth prospects relative to prepandemic levels (October 2022 *World Economic Outlook*).

Several themes emerging from recent major crises are relevant to fiscal policies to meet current adversity and future challenges.

First, governments deployed a wider range of tools during major crises than typical business cycles. During the pandemic, they used multiple discretionary measures, including broad-based cash transfers. In advanced economies, these measures operated on top of already well-established automatic stabilizers, such

as unemployment insurance and social assistance.[1] Firms benefited from measures to preserve liquidity and solvency.

Second, to ensure that fiscal policies are cost-effective, it is important to determine the eligible recipients, such as those most in need of a hand up and less capable of bouncing back. Assessment should examine the distributional implications of policies in addition to their aggregate impact.

Third, the case for fiscal interventions—beyond their sizable fiscal costs—cannot be assessed in isolation from other policies. For example, a fiscal expansion can strongly support the economy when monetary policy is constrained. However, when inflation is above target, fiscal expansion can complicate the tasks of central banks. In some instances, fiscal interventions become necessary because of gaps in other policy frameworks. During the global financial crisis, for example, public bailouts of financial institutions were required to provide a backstop to the flow of credit. The ensuing fiscal costs reflected weaknesses in financial regulation, pointing to the importance of actions by both the public and private sectors. At a time when public budgets are stretched, policies that facilitate the private sector to cope with adverse shocks in a self-reliant way are helpful.

The following sections take a more in-depth analysis of fiscal tools to support households and firms against the background of these themes and discuss ways to improve those tools to meet current challenges and future adversity.

Building Resilience for Households against Job or Income Losses

Many government programs protect households from losses in income or employment. The scope of these programs in strengthening individual resilience expands during large crises, when it is harder for people to find a new job and afford a basic standard of living and when multiple household members' real incomes may fall at the same time. In these dire situations, programs such as unemployment income support or targeted transfers not only reduce the likelihood that individuals will face financial distress and suffer lasting deterioration of their well-being but also cushion the adverse impact on aggregate demand and thus speed up economic recovery.

Certain components in government budgets support households and firms automatically during adverse events. These automatic stabilizers are, by design, intended to be timely, targeted, and temporary. On the spending side, they include unemployment income support and social assistance, whereas on the revenue side they include income taxes, which ensures that individuals and firms automatically pay less tax when the economy slows down. But automatic stabilizers may be unavailable or may not be sufficient in a large crisis, especially in developing countries where informality is widespread. In those situations, discretionary measures can flexibly tailor assistance to specific situations. However, unless prior planning takes place or special efforts are made, such measures may be delayed because they require government or parliamentary approval and are often harder to unwind (Romer and Romer 2010; Eyraud, Gaspar, and Poghosyan 2017). The rest of this section looks separately at several automatic stabilizers and discretionary measures, with a focus on how they operated during the pandemic.[2]

Automatic Stabilizers

The size of automatic stabilizers can be measured through microsimulations that quantify how well existing tax and benefit systems buffer shocks to households' market income (income before taxes and transfers). This approach allows a detailed analysis based on household characteristics, but it does not account for the feedback effects on aggregate income when policies change (see "Takeaways from Pandemic-Related Measures to Support Households").

[1]Social protection systems consist of policies designed to reduce individuals' exposures to risks and vulnerabilities and to enhance their capacity to manage negative shocks such as unemployment, sickness, poverty, disability, and old age. Social protection encompasses three broad categories: (1) social safety net programs (noncontributory transfer programs to ensure a minimum level of economic well-being), (2) social insurance programs (contributory interventions to help people better manage risks), and (3) labor market programs to insure individuals against unemployment risks and improve job search prospects.

[2]The distinction between automatic stabilizers and discretionary measures is indicative and depends on countries' circumstances and legal frameworks. For example, in some European countries, job-retention schemes are activated automatically, but in others they have been used on a discretionary basis during the pandemic.

Considering policies before the pandemic for countries in the *European Union* (EU) and household-level data, microsimulations suggest that the tax and benefit systems compensated households for nearly 40 percent of a large market income loss on average during 2011–19 (Online Annex 1.2; Coady and others, forthcoming), compared with 32 percent for the *United States* before 2011 (Dolls, Fuest, and Peichl 2012).[3] The degree of consumption stabilization is estimated to have been 85 percent in the *European Union* on average (meaning that EU households reduced their consumption by 15 percent for each unit drop in market income).[4] This means that households drew down their savings to maintain consumption despite the decline in their disposable income. For low-income households, social benefits have been important in stabilizing disposable income, representing 40 percent of the overall income stabilization in the tax and benefit system (or absorbing 16 percent of the market income shock on average). For higher-income households, the progressivity of direct taxes was instead more important in stabilizing income. Similar patterns were also observed in the *United States* and other major advanced economies. In addition to stabilizing individual income, spending-side automatic stabilizers tend to redistribute resources toward the poor or vulnerable households and provide social insurance for all households, reducing their precautionary saving needs (McKay and Reis 2016, 2021).

In response to the pandemic, governments boosted protections against job and income losses. Two prominent instruments were unemployment income support and job-retention schemes. The latter encompass policies that subsidize workers' wages in firms that have reduced working hours but preserved jobs. Many EU countries had some forms of job-retention schemes in place before the pandemic, some of which could be activated automatically (through firms), such as Kurzarbeit in *Germany*. As the health crisis intensified, governments introduced new or expanded existing job-retention and unemployment income support schemes. Take-up rates rose to a median of 13 percent of the working age population at the peak of the crisis, before gradually subsiding to prepandemic levels (Giupponi, Landais, and Lapeyre 2022). The *United States* stepped up its federal unemployment support by about 3 percent of GDP to raise benefits through weekly supplements, expand the eligibility to include independent workers, and extend the duration of federal benefits. Different reliance on these fiscal tools was reflected in labor market outcomes—mass layoffs or furloughs in the *United States* and reductions in working hours in Europe (Online Annex 1.2).

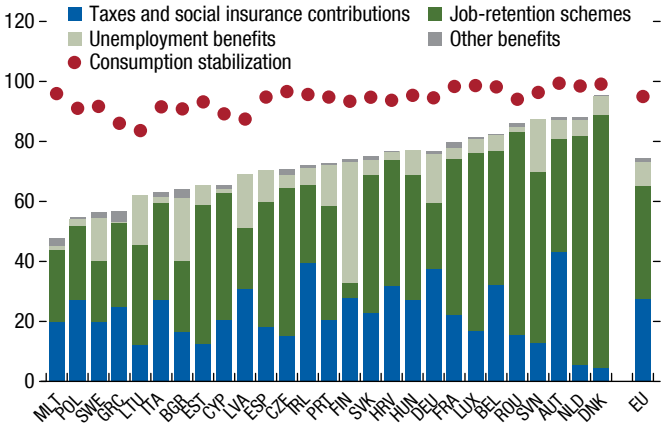
Microsimulations for the *European Union* show that the degree of income stabilization increased, thanks to the fiscal measures introduced in response to the pandemic. The tax and benefit systems (including pandemic-related measures) are estimated to have absorbed about 75 percent of the market income loss—much larger than 40 percent prevailing before the crisis (Online Annex 1.2). The job-retention schemes alone absorbed almost 40 percent of the market income shock at the EU level (Figure 1.3), at a fiscal cost of about 2 percent of GDP. An alternative scenario indicates that in the absence of job-retention schemes, the tax and benefit system would have absorbed only 47 percent of market income losses. The income stabilization coefficient, expressed in percent, was 85 percent for households in the lowest income quintile, compared with 65 percent for those in the top income quintile—although with significant variations among countries (Figure 1.4). Simulations also suggest that households might have stabilized more than 90 percent of their consumption on average (Christl and others 2022), although caution is needed when interpreting the simulation results.[5]

[3]The approach uses a simulation model (EUROMOD) for EU countries to assess the impact of a change in tax and benefit systems, including simulations of tax liabilities and in-cash benefit entitlements at the individual or household level. The simulations are based on the 2019 EU Statistics on Income and Living Conditions (EU-SILC). The prepandemic shock is modeled in a stylized way involving a 5 percent proportional decline in market income across all households. The simulations exclude stabilization effects from old-age pensions, value-added taxes, and corporate income taxes. The results are not directly comparable with those obtained using other approaches that measure the size of automatic stabilizers on the basis of the cyclical component of the government budget responses to changes in GDP. The latter method finds that automatic stabilizers reduce one-half of output volatility in advanced economies and one-third in emerging market economies, with large variation across countries (see the April 2015 *Fiscal Monitor*; Mohl, Mourre, and Stovicek 2019).

[4]The level of consumption stabilization is based on estimates of the marginal propensity to consume by household income groups for individual EU countries in Caroll, Slacalek, and Tokuoka (2014) (see Online Annex 1.2).

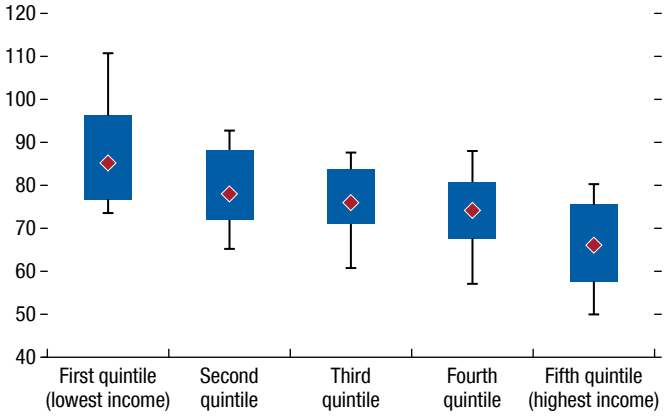
[5]The consumption stabilization coefficient measures the share of the market income shock that is not transmitted to household consumption or demand (see Online Annex 1.2). A higher consumption stabilization coefficient means temporary market income shocks affect consumption less.

Figure 1.3. Simulations of the Stabilization of Income and Consumption across EU Countries, 2020
(Stabilization coefficients, expressed in percent)



Sources: Christl and others 2022; and IMF staff estimates.
Note: Based on EUROMOD simulations and 2019 data for the *European Union* (see Online Annex 1.2). Data labels in the figure use International Organization for Standardization (ISO) country codes. EU = European Union.

Figure 1.4. Stabilization of Income across EU Countries, by Household Income Groups, 2020
(Stabilization coefficients, expressed in percent)



Sources: Christl and others 2022; and IMF staff estimates. See also Lam and Solovyeva, forthcoming.
Note: Based on EUROMOD simulations and 2019 data for the *European Union* (see Online Annex 1.2). Red diamonds refer to the median level. Blue boxes are the interquartile ranges. Whiskers are the 10th and 90th percentile levels.

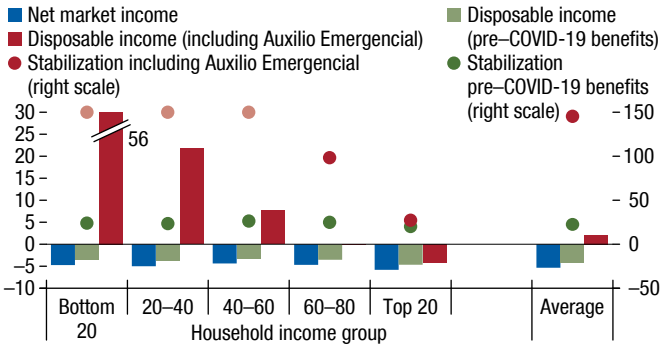
Real per capita consumption declined by 7 percent among EU countries on average in 2020, partly because of the unique nature of the pandemic, which prevented households from consuming because of lockdown restrictions.

Higher income stabilization rates among the poorest segments of the population indicated that policies were largely targeted toward those who needed help the most. Microsimulations, together with regression results, further suggest that income stabilization was stronger for the young and for less-educated workers, as well as those working in sectors that rely on personal contact, which were more vulnerable to the pandemic shocks (Online Annex 1.2). Findings in the literature indicate that stabilization from unemployment income support was also the greatest for low-skilled workers, who, according to Ando and others (2022), were the most vulnerable to job losses. Similar effects were observed in the *United States* from its temporary expansion of unemployment income support, which was progressive, with most benefits accruing to low-income workers (Ganong and others 2022). By stabilizing income and redistributing resources across individuals, the pandemic-related measures also affected income inequality. Microsimulations show that the Gini coefficient of income inequality would have increased by 0.65 percentage point in the *European Union* in 2020 before taxes and transfers, whereas the Gini coefficient of inequality in disposable income (after taxes and transfers) would have declined by 0.24 percentage point (Online Annex 1.2).

Discretionary Fiscal Support

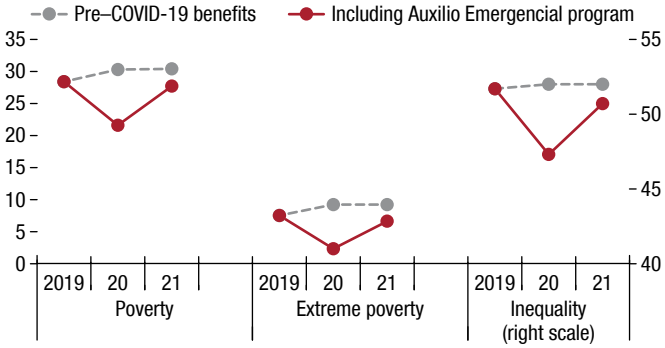
Governments in many countries used discretionary measures—especially broad-based cash transfers—to provide direct income support to households during the pandemic. Cash transfers can be deployed in response to a wide range of shocks, including situations in which other measures are insufficient (because the crisis is too severe) or less feasible (for example, job-retention schemes where informality is high). Cash transfers can be used flexibly because they are usually not tied to past or current work status, which makes them appealing in unusual crises such as the pandemic. They are typically progressive (their proportional impact on disposable income is greater among poor households than among rich ones) because they generally consist of a flat amount for each individual or household, and eligibility is usually capped for those with higher incomes. Even so, cash transfers can be disbursed only if the government can identify and verify eligible recipients and deliver payments to them—a constraint especially relevant for many low-income countries. If such information and capacity are lacking in regard to destitute people, for example, because

Figure 1.5. Change in Per Capita Income across Household Income Quintiles in Brazil, 2020
(Percent change, left scale; percent, right scale)



Sources: BraSim tax and benefit tool; and IMF staff estimates.
Note: Estimates are based on microsimulations. Net market income includes contributory pension benefits received. Stabilization coefficient is defined as (1 percent change in disposable income/percent change in market income) × 100. Stabilization coefficients including the Emergency Aid program for the bottom 60 percent of households are larger than 230 and are not drawn to scale.

Figure 1.6. Evolution of Poverty and Income Inequality during the Pandemic in Brazil, 2019–21
(Percent, left scale; Gini coefficients, right scale)



Sources: BraSim tax and benefit tool; and IMF staff estimates.
Note: Estimates are based on microsimulations. Poverty is defined as per capita household income less than half of minimum wage (US$6.30 per day in 2011 purchasing power parity [PPP] terms). Extreme poverty is US$2.25 per day at 2011 PPP, defined using the Bolsa Familia eligibility thresholds. Income inequality is based on disposable income (market income after taxes and transfers).

they have limited ties to the formal economy, these programs are likely less effective.

The Emergency Aid program in *Brazil* (Auxilio Emergencial) during 2020–21 provides a case study of the use of cash transfers because of its broad coverage and the availability of high-quality data (Online Annex 1.3). The program initially covered almost one-third of the population, including 90 percent of the households in the bottom 40 percent of the income distribution. Benefits were three times higher than the standard social benefit and more than half of the national minimum wage. The effect on household income is assessed using household-level data and microsimulations based on BraSim, a tax and benefit tool developed by the World Bank (Cereda, Rubiao, and Sousa 2020).

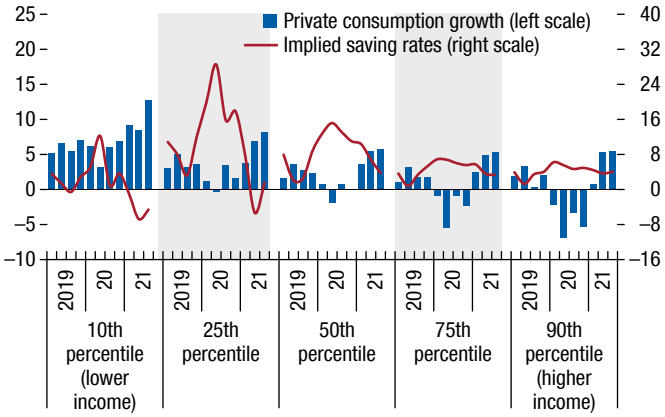
The stabilization effects of the Emergency Aid program in *Brazil* far exceeded those of the social protection system in place before the pandemic. Simulations show that, on average, per capita disposable income in *Brazil* edged up by 2.1 percent in 2020. Disposable income increased in the majority of households (more than 60 percent of households) and rose by more than 20 percent in low-income households (Figure 1.5; Brollo, Lara Ibarra, and Campante Vale, forthcoming). As a result, the poverty rate and the Gini index of disposable income inequality fell temporarily in 2020 (Figure 1.6). A counterfactual scenario without the Emergency Aid program suggests that the prepandemic tax and benefit system would have absorbed only one-quarter of the market income loss, and that average per capita disposable income would have declined by 4.1 percent. The cumulative fiscal cost for the Emergency Aid program, in 2020–21, was approximately 4 percent of GDP. An alternative simulation suggests that a lower benefit level of the program (at one-third of the initial benefit amounts) would still have effectively protected income for the population at large, at about half the cost (Online Annex 1.3).

Many advanced economies approved cash transfer programs and disbursed the benefits swiftly under the pressures of the health crisis. For example, the *United States* disbursed the first round of the Economic Impact Payments by mid-April 2020 (about two weeks after the Coronavirus Aid, Relief, and Economic Security [CARES] Act was enacted in late March 2020) (Gelman and Stephens 2022).[6] Together with other fiscal measures, the programs more than compensated for the loss in market income among most of the population. Real disposable income for households in

[6]According to data from the US Treasury, the three rounds of Economic Impact Payments, disbursed between April 2020 and December 2021, amounted to $800 billion in total. The payments covered most of the population, phasing out beginning with an adjusted gross income of $75,000 for singles and $150,000 for married persons. The first round of Economic Impact Payments was mandated under the CARES Act, which was signed into law on March 27, 2020. About half of first-round payments were delivered by mid-April 2020, and nearly 90 percent were delivered by early June 2020 (Gelman and Stephens 2022).

Figure 1.7. US Consumption Growth during the Pandemic, by Income Group, 2019–21

(Percentage change relative to the 2018 first-quarter levels, left scale; change in percent of disposable income relative to the 2018 first-quarter levels, right scale)



Sources: Meyer, Murphy, and Sullivan 2022; US Bureau of Labor Statistics Consumer Expenditure Surveys; and IMF staff estimates.
Note: Savings are estimated as the difference between quarterly disposable income and total expenditures. Consumption is estimated using a method similar to that in Meyer, Murphy, and Sullivan (2022).

the bottom 50 percent of the income distribution rose on average by 9 percent in 2020 and by 17 percent in 2021, compared with 2019 levels (Blanchet, Saez, and Zucman 2022). The transfers were effective at supporting consumption levels of low-income households soon after they received the cash transfers (Chetty and others 2020; Autor and others 2022; Meyer, Murphy, and Sullivan 2022; Figure 1.7).[7] Even middle- and higher-income families benefited from the transfers. Their disposable income rose by about 8 percent in 2020 and 2021, relative to that in 2019. However, because of social distancing constraints, families in higher income groups saved most of this additional income and reduced consumption in 2020.

The increase in disposable income for a large fraction of the population in some countries points to the trade-offs policymakers faced when designing the programs. Policymakers needed to design support programs under great uncertainty regarding the course of the pandemic and economic recovery, and had limited capacity to target the recipients who needed assistance most in real time. In hindsight, some government interventions appear generous. Broad-based cash transfers were initially effective in protecting household income, particularly in low-income households, and contained the rise in poverty. As more information on the pandemic became available and economic conditions improved, adjusting support to better target individuals could have reduced the fiscal costs.

The considerations just discussed hold for advanced and a few emerging market economies. The fiscal response to the pandemic in many emerging market and developing economies was instead constrained by limited fiscal space. For these countries, the main concern is the potential negative repercussions that their relatively modest fiscal response might have on their ability to bounce back to prepandemic paths in output (April 2022 *Fiscal Monitor*). This could affect efforts to reduce poverty in the coming decade (World Bank 2022).

Preexisting social safety nets were the most important tools used by emerging market and developing economies, in which automatic stabilizers such as unemployment income support are less prevalent and provide limited coverage because many jobs and businesses are informal (Ohnsorge and Yu 2022). Although several countries incorporate elements in their social safety nets that automatically adjust transfers (for instance, by linking them to natural disasters),[8] most do not have mechanisms in place to automatically scale up benefits in response to adverse shocks. As a result, many emerging market economies and low-income countries had to rely on discretionary measures to support vulnerable households. Several countries leveraged digital tools and big data (Table 1.1). For example, *Colombia* implemented a harmonized payment system whereby beneficiaries could withdraw benefits from their designated bank accounts. *Indonesia* and *Thailand* created dedicated websites for direct registration of new beneficiaries, and *Togo* selected households for cash transfer programs based on satellite and phone record data. Satellite imagery was combined with census data

[7]With the recognition that direct comparison across episodes is difficult, the effects on consumption appeared smaller than those resulting from previous cases of cash transfers (Johnson, Parker, and Souleles 2006; Barnes and others 2022), possibly owing to the unique nature of the pandemic, such as lockdown restrictions and ample liquidity being in place (Auerbach, Gorodnichenko, and Murphy 2021; Parker and others 2022). Small effects on consumption of low-income households were also found during the pandemic in the case of direct cash transfers for childcare in *Germany* (Goldfayn-Frank, Lewis, and Wehrhofer 2022).

[8]For example, the number of beneficiaries of *Ethiopia*'s Productive Safety Nets Program increases if there is warning of impending drought. Similarly, *Kenya*'s Hunger Safety Net Program has clear triggers specifying who is covered by the scheme, as well as the amount and duration of benefits, depending on drought conditions.

Table 1.1. Selected Examples of Social Spending during the COVID-19 Pandemic in Emerging Market and Developing Economies

Country	Expanded Eligibility	Increased Benefits	Additional Targeting	Digital Innovations	Remarks
Bolivia		✓	Elderly, school students, and families with children		Bolivia implemented several programs to support vulnerable groups, including: (i) the Bono Contra el Hambre program, a transfer of Bs1,000 (US$146) each to over 4 million people between 18 and 59 years old who were not receiving either salaries or pensions; (ii) the Bono Familia program to compensate low-income families, which paid Bs500 (US$73) for each child in elementary school, Bono Canasta Familiar, and Bono Universal; (iii) conditional cash transfers continued in Bono Juancito Pinto (for school students, created in 2006), Bono Juana Azurduy (for mothers needing assistance, created in 2009), Renta Dignidad (for the elderly, since 2008).
Brazil	✓	✓	Elderly, poor, and unemployed	Deliver payments through state-owned banks; mobile apps for registration	Brazil allocated more resources to the Bolsa Familia program and included an additional 1.2 million new beneficiaries; introduced the Auxilio Emergencial program for workers and low-income households during April 2020–December 2021.
Chile		✓	Low-income households	Deliver payments through state-owned banks	Cash transfers for the most vulnerable households.
China	✓	✓			China increased the coverage and benefits of Dibao—its social assistance program for the poorest—particularly to cover families affected by COVID-19 and falling into poverty.
Colombia	✓	✓	Informal workers	Mobile-banking applications	In addition to higher benefits for current beneficiaries in existing programs, a cash transfer program (Solidarity Income) of Col$160,000 (or US$42) monthly was delivered electronically for informal workers and families, including 3 million households identified via social registries and tax collection databases.
Egypt	✓		Informal workers in existing databases, by local governments or community organizations		Egypt provided a monthly payment of LE500 over three months for informal workers registered in the workforce directorates databases of governorates.
India		✓	Elderly and families with children	Mobile-banking applications	India provided Rs1000 (US$13) to all beneficiaries under the National Social Assistance Program (NSAP) for elderly, widows, and disabled receiving social pensions (35 million beneficiaries), front-loaded payments of Rs2000 (US$26) for 87 million farmers, and transferred Rs500 (US$6.5) for three months to 200 million women with a Pradhan Mantri Jan Dhan Yojana (PMJDY) (financial inclusion) account.
Indonesia	✓	✓		Dedicated website for registration	Assistance for 10 million beneficiary families in the Family Hope Program was increased by 25 percent in 2020; the food aid program (e-food vouchers) was expanded to more recipients with additional benefits for nine months.
Peru		✓	Families affected by COVID-19 in existing databases, by local governments or community organizations	Digital networks for cash payments	Peru introduced an exceptional payment of about US$107 for each vulnerable family affected by the quarantines.
Rwanda			Informal workers in existing databases, by local governments or community organizations		Rwanda distributed food to informal sector workers in Kigali identified through the system of Mudu Gudus, a network of community organizations in charge of targeting and distributing social transfers.
Togo	✓	✓		The Novissi system used a machine-learning approach based on geospatial, survey, and phone metadata.	The Novissi emergency social assistance program was introduced in April 2020 to provide cash transfers to more than 570,000 informal workers and additional beneficiaries in the poorest 100 cantons.

Sources: Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic (https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19); Shang, Evans, and An 2020; and Una and others 2020.

to map the poorest urban areas and target beneficiaries in *Nigeria*. Countries increased transfers through the social safety net, but the transfers were often delayed and it was challenging to deliver support on time and reach those most in need, according to extensive surveys by the World Bank on more than 50 developing countries (World Bank 2022).

Takeaways from Pandemic-Related Measures to Support Households

Diverse and forceful fiscal responses during the pandemic opened new grounds to support households against income or job loss. The preceding analyses provide several takeaways that can inform policy design when policymakers are tackling current challenges and preparing for future adversity.

First, job-retention schemes can become a more prominent part of the resilience toolkit for future crises, together with unemployment income support measures. Once their architecture is put in place, both schemes can provide a timely, effective buffer and reduce the loss of labor income, especially for vulnerable workers such as youth and low-skilled workers. These two tools are best used in different conditions. The pandemic presented a unique situation for using job-retention schemes, given that it triggered a deep but short-lived disruption to the labor markets (April 2021 *World Economic Outlook,* Chapter 3). Policymakers were wary of the risks of massive layoffs that could undermine valuable employer-employee relationships (see "Ensuring the Resilience of Firms in Extraordinary Times"), especially in countries with rigid labor markets that would be less able to reabsorb unemployed workers quickly, or in countries with inadequate levels of social protection. In this context, job-retention schemes are especially useful for workers who typically fall outside of regular unemployment income support, such as workers who have not worked long enough to qualify for unemployment assistance.

The advantage of preserving work relationships in the short term is illustrated by a model analysis (calibrated to a typical advanced economy) whereby long-term unemployment leads to a productivity loss for workers even after they are re-employed (Online Annex 1.4). Simulations show that a persistent productivity loss from unemployment would reduce the consumption stabilization coefficient by 80 percent, even when unemployed workers receive unemployment income support.[9] Job-retention schemes can avert such large productivity loss from unemployment, which would then help contain the decline in the consumption stabilization coefficient to only 10 percent. In contrast, if the shocks persisted for a long time, preserving jobs through job-retention schemes would hinder necessary reallocation. In that case, a well-designed unemployment support scheme is preferred. In the early stages of the pandemic, concerns about large economic transformation after the pandemic made job-retention schemes appear less appropriate. In hindsight, the pandemic did not lead to overwhelming structural changes, and the use of job-retention schemes quickly returned to prepandemic levels.

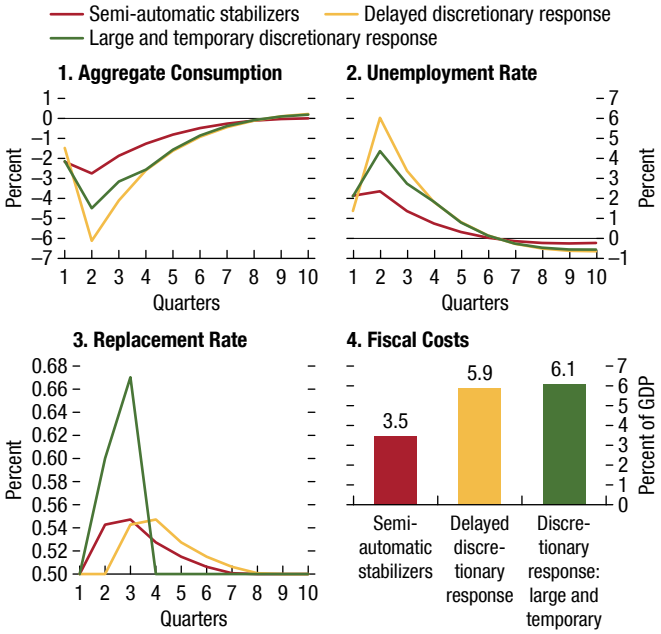
The second takeaway is that targeting support to the right beneficiaries would raise the impact of fiscal responses and save valuable fiscal resources. Policymakers can integrate social registries updated with current information (for instance, Ingreso Familiar de Emergencia in *Chile* and the National Socio-Economic Registry in *Pakistan*) and make use of high-frequency household surveys, where available, to facilitate better targeting for new beneficiaries. Broad-based support to households' incomes was necessary—at least at the onset of the pandemic. As economic conditions improved, the generosity of measures could have been scaled back faster.

Preparing a strategy in advance to deploy fiscal tools can improve governments' ability to target those in need of most support and to attune support to evolving economic conditions. One option is to set out the likely course of action and policy responses under different scenarios. This allows a timely response without delaying the necessary fiscal support in a large crisis. In some cases, it would be helpful to put in place semi-automatic stabilizers—that is, prelegislated increases in benefits or eligibility with previously agreed triggers such as a decline in employment beyond a threshold. These combine the benefits of timely and targeted support, while retaining the flexibility to adjust the generosity and coverage of income support to the severity of

[9]The productivity loss is calibrated to 0.12 percentage points in the quarter following a negative shock, as in Engler and Tervala (2018). The consumption stabilization coefficient is defined as 1 minus the ratio of volatility of consumption in the scenario with productivity loss of unemployment to that in the baseline scenario without productivity loss. A higher coefficient means households can stabilize consumption more in a negative shock (see Online Annex 1.4).

Figure 1.8. Simulated Effects of Discretionary Support and Time-Varying Automatic Stabilizers

(Percentage point deviations from the baseline scenario, unless otherwise stated)



Source: IMF staff estimates (see Online Annex 1.4).
Note: The unanticipated adverse events occur in the first and second quarters and then gradually fade away. The semi-automatic unemployment income support features a time-varying replacement rate that increases by 2 percentage points for each 1 percentage point deviation of unemployment rate from its natural rate. The two discretionary responses vary in terms of size and timing. Fiscal costs across scenarios are cumulative over 2½ years and are expressed in percent of GDP.

the negative shocks (Solow 2005; Boushey, Nunn, and Shambaugh 2019; Blanchard and Summers 2020; April 2020 *Fiscal Monitor*; April 2020 *World Economic Outlook*, Chapter 2).

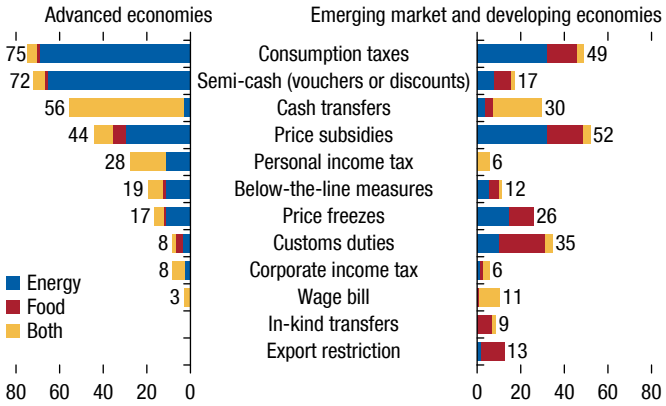
Results from a dynamic stochastic general equilibrium model show that semi-automatic stabilizers could stabilize household consumption better than conventional automatic stabilizers (that is, those with fixed generosity and coverage), at a modest fiscal cost (Online Annex 1.4). Additional stabilization comes from greater support at the time of a crisis and guidance of expectations about fiscal policy. In addition, by transferring resources toward low-income unemployed individuals, semi-automatic stabilizers support aggregate consumption and reduce inequality. This enhances stabilization at aggregate and individual levels for a relatively modest fiscal cost, thanks to lower output losses. Timeliness and tailoring to economic conditions of fiscal support are crucial, as Figure 1.8 illustrates (see Online Annex 1.4). The figure depicts the effects of a severe adverse shock that, in the absence of a fiscal response, would raise the unemployment rate by 7 percentage points. Three policy scenarios are considered: (1) timely and anticipated fiscal support—in the form of expanding the benefit levels of unemployment income support—tailored to the aggregate economic conditions (such as semi-automatic stabilizers); (2) large but short-lived discretionary fiscal support; and (3) delayed discretionary response. Fiscal support tends to be more effective if it is timely and short-lived than if it is smaller and delayed. At a similar fiscal cost, a timely fiscal support stabilizes consumption one-third more than a delayed response. The "semi-automatic" mechanism is more effective in stabilizing consumption and employment than the other two scenarios. Semi-automatic stabilizers have, however, two potential limitations. First, it is difficult to prespecify the triggers for more generous support because the nature of shocks is different. Ideally, these would be based on observable variables that are available at high frequency and co-move strongly with the underlying economic conditions. Second, putting policy support in place for too long could generate work disincentives (Grosh and others 2008; Landais, Michaillat, and Saez 2018).

The third takeaway is that social safety nets can be scaled up quickly, but this requires preparatory work ahead of future crises. Social safety nets are compatible with a diverse set of shocks and can reach a targeted (but potentially large or specific) segment of the population, if governments can identify those in need and deliver assistance in a timely manner. Doing so necessitates large-scale and dynamic information systems, including universal and robust identification systems and the ability to collect and verify up-to-date socioeconomic information, while addressing concerns about information quality, privacy, and security (Aiken and others 2022). Strong implementation capacity to deliver payments is also key, as is coordination among government entities.

Responses to Surging Food and Energy Prices

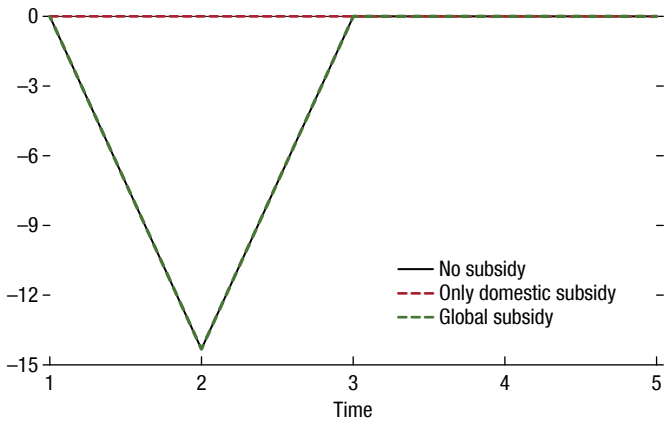
The sharp rise in food and energy prices that began in 2021 and was exacerbated by Russia's invasion of Ukraine has prompted governments to respond once more. Since early last year, global oil prices have doubled, natural gas prices in Europe have increased sharply, and prices for fertilizers have more than tripled.

Figure 1.9. Recently Announced Measures in Response to High Energy and Food Prices
(Share of surveyed countries, as of July 2022)



Source: IMF staff estimates.
Note: Based on an IMF survey of 174 countries on the measures taken during the period from January to June 2022 in response to rising food and energy prices. The stacked bars show the breakdown of total measures in each category.

Figure 1.10. Domestic Consumption by Low-Income Households under Different Energy Subsidy Schemes
(Percent of precrisis consumption)



Source: IMF staff simulations (see Online Annex 1.5).
Note: At time 2, a temporary reduction in global supply increases the international price of energy products. Under the "no subsidy" scenario, domestic consumption of low-income households falls. Under the scenario with "only domestic subsidy" on energy prices, with that subsidy financed by taxes on richer households, consumption of low-income households can be fully stabilized. But if all countries enact the same "global subsidy" scheme, then international prices rise and consumption is the same as with "no subsidy."

Soaring food and energy prices have raised the cost of living for households and thus reduced their real incomes across most countries. These developments have given rise to concerns about potential social unrest, have pushed more households into poverty, and have placed more than 340 million people at risk of food shortage in the short term, according to the World Food Programme. The impact has differed across countries—depending on whether they are net importers or exporters of commodities. Some emerging markets and low-income developing countries may be at risk of a food crisis. Adverse effects have also differed across individuals within a country, considering that a surge in food prices hurts low-income households, especially, who spend a greater share of their income on food than others do. Rising prices of necessities and basic staples can cause devastating, long-lasting harm for people.

These concerns underlie the multiple measures undertaken in response to the recent spike in food and energy prices (Figure 1.9). In many cases, countries implemented measures to mitigate directly the rise in the cost of living for most households, although some of these measures involve large fiscal costs and tend to be inefficient (Amaglobeli and others 2022). In advanced economies, cash and semi-cash transfers (including vouchers and utility bill discounts) have been common, but most other measures have aimed at lowering prices including reductions in the value-added tax (VAT) for some energy products (for example, in *Belgium* and *Italy*) and excise taxes (for example, in *France* and *Korea*). Emerging market and developing economies have most used price subsidies and reductions in VAT and excise taxes (for example, *Poland, Thailand,* and *Türkiye*). The lower pass-through of the global spikes to domestic energy prices in emerging market and developing economies is explained by the prevalence of price subsidies, especially in the Middle East, North Africa, and sub-Saharan Africa. Pricing subsidies or cuts on fuel and energy taxes to limit the pass-through are often hard to reverse when prices come down.

Energy pricing subsidies do not really insulate the domestic economy from the shock when many countries implement them at the same time, because commodity price increases lead to a negative terms-of-trade shock and a fall in real income for commodity importers, regardless of the domestic subsidy scheme in place. Energy price subsidies in many countries at a global scale would translate one to one into a higher global energy price, while leaving the domestic (subsidized) price relatively unchanged. Price subsidies on energy across countries will be costly but ineffective at protecting the most vulnerable individuals, as illustrated in a multicountry model (Online Annex 1.5; Figure 1.10). They will also complicate the green transition toward renewable energy sources.

Overall, they will result in a net transfer of fiscal resources from commodity-importing countries to commodity exporters. The global bidding up of prices from subsidies can be detrimental to low-income countries that already lack policy space and strong social protection.

Protecting vulnerable households from spikes in food and energy prices is best achieved by strengthening social safety nets to deliver temporary targeted cash transfers (Online Annex 1.4; Amaglobeli and others 2022). The fiscal cost can be offset by other measures, including taxes, although one needs to weigh carefully whether taxes on windfall profits from fuel extractions are appropriate. In general, a permanent tax on windfall profits from fossil fuel extraction based on economic rents (that is, excess profits) can be considered if an adequate fiscal instrument is not already in place. It helps raise revenue without reducing investment or increasing inflation and avoids distortions from a temporary tax on windfall profits (Baunsgaard and Vernon 2022). Targeted cash transfers are a better option than blanket price subsidies on fuel because they allow the rise in fuel costs to pass on eventually to end users to facilitate energy conservation and switching out of fossil fuels. In most countries, pricing subsidies provide greater benefits to high-income individuals. Low-income countries should prioritize food security within the existing fiscal envelope. Countries without strong social safety nets can expand existing social programs (for example, public transportation and school feeding programs) to provide relief to vulnerable households. A gradual adjustment of food prices may help reduce food waste especially in advanced economies.

At the global level, facilitating trade and lifting export restrictions on the purchase of food for humanitarian assistance will support low-income countries at risk of a food crisis in meeting their urgent needs. Ensuring an adequate and affordable supply of food and energy in global markets will also support low-income countries in the short term. Stronger domestic and international efforts to transition to a more diverse, renewable energy mix would reduce vulnerabilities to fossil fuel price shocks.

Ensuring the Resilience of Firms in Extraordinary Times

Government support to firms expanded massively in scale and scope during the COVID-19 pandemic and the global financial crisis that began in 2008. The goal during the pandemic was to allow firms to avoid bankruptcy and preserve employer-employee relationships while economic activity was restricted, so that firms could bounce back as soon as lockdowns ended and business resumed. Direct lending, public guarantees, subsidized private bank lending, and equity support were used on an unprecedented scale. For example, some countries including *Germany, Italy,* and *Japan* announced public guarantee envelopes reaching about 30 percent of GDP. Many emerging market and developing economies intervened in their distressed state-owned enterprises, which often operated in core sectors or provided basic services. Some also used discretionary budget measures such as deferrals on taxes and social security contributions, in addition to job-retention schemes that, as noted, benefited workers and firms jointly. Likewise, during the global financial crisis, many advanced economies made ample use of public loans, guarantees, and equity support to shore up the balance sheets of financial institutions and systemic firms (Cusmano and Thompson 2018). Collectively, these measures alleviated corporate cashflow crunches and preserved working capital, although private demand recovered more gradually in the 2010s than in 2021, partly because of differences in the strength of the balance sheets of private financial institutions and households.

In times of normal economic activity, government support to private firms is usually limited to encouraging investment through tax incentives or promoting access to finance for small and medium-sized enterprises or specific sectors. In typical business cycles, support to firms seldom extends beyond the automatic stabilization implied by the tax system (because firms pay lower taxes when profits decline).

During major crises, exceptional interventions by the public sector can avert an economic collapse, although such support entails large fiscal risks. In situations of extreme uncertainty, banks may become reluctant to extend liquidity even to sound and viable firms, impairing their ability to conduct business. A failure of systemic firms could disrupt supply chains or credit relationships, and the disruptions could spread to other firms and lead to sizable job and income losses if left unaddressed (Gourinchas and others 2022). In such circumstances, public interventions—along with monetary or financial policies—can restore market confidence, preserve valuable links between firms and their creditors, and reduce lasting effects from systemic bank failures (Edelberg, Sheiner, and Wessel 2022).

The benefits of public financial support to viable firms amid major crises include the confidence channels—in which firms' expected profits depend on

investors' and consumers' views of future economic conditions (Battersby and others 2022). Adverse events can make people more pessimistic, leading to a contraction in demand. Incentives for firms to invest wane and business prospects suffer. Banks become less willing to extend credit. A wave of bankruptcies, even among viable firms, is possible. The adverse impact of the initial shock is thus amplified by widespread pessimism. A well-designed public guarantee program can break this self-reinforcing formation of pessimistic expectations by reducing the share of viable firms that are forced to downsize. This in turn lifts people's views on economic prospects. Such benefits of support to firms by governments are larger in deeper crises, when a greater share of firms is subject to bankruptcy risks.

However, public support to firms comes with risks, which could outweigh potential benefits. When uncertainty is great, distinguishing between illiquid but viable and nonviable firms is difficult (Ebeke and others 2021) and processing or monitoring support for many small and medium-sized enterprises can strain governments' administrative capacity (Diez and others 2021). For countries with limited fiscal space, borrowing costs may rise during crises, increasing the opportunity cost of public funds for other needed spending. Moreover, prolonged support to firms can delay the reallocation of resources to more productive uses or crowd out funding for new businesses. The costs of exceptional support to firms likely outweigh the benefits in most circumstances for countries with large shares of informal jobs and businesses in their economies, weak governance, and scant information about firms' balance sheets. Even in advanced economies with strong legal, administrative, and institutional systems, the large fiscal costs and fiscal risks may be warranted only in exceptional circumstances to avert a severe economic crisis.

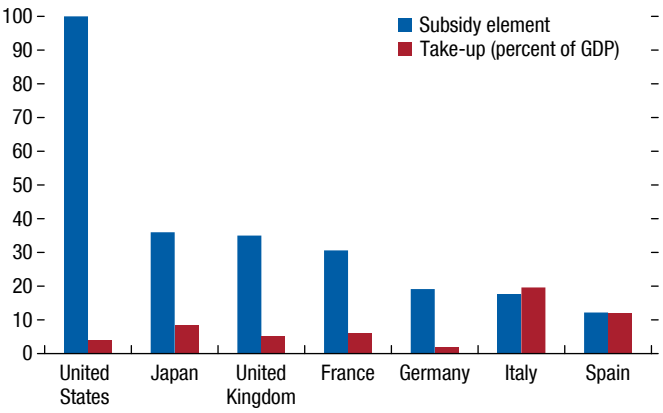
While government interventions to support firms contained the rise of bankruptcies during the pandemic, some programs entailed large fiscal risks. Bankruptcy rates declined by 11 percent on average across 42 advanced economies and emerging markets during the pandemic (Araujo and others 2022).[10] However, some programs appeared generous and entailed large fiscal costs (Chodorow-Reich, Sunderam, and Iverson 2022). Untargeted programs can imply that nonviable firms before the pandemic nonetheless obtained benefits. In the *United States*, some firms used loans from the Paycheck Protection Program—intended to retain workers during the pandemic—to make non-payroll payments or build up savings, leading to small employment effects (Granja and others 2020), while many small businesses did not receive support loans (Kaplan, Mills, and Sarkar 2022). Firm-level survey results across 74 emerging market and developing economies suggest that about one-fifth of firms that were not much affected during the pandemic received some form of government support. In low-income developing countries, the majority of firms that did not receive (but likely qualified for) policy support missed out because firm owners were not aware of those support measures (World Bank 2021).

To make support to firms more effective, governments should strive for good targeting and communication. Support should be triaged based on an assessment of firms' viability. Well-defined exit strategies, sound legal frameworks, good governance, and sound management of fiscal risks are priorities in this regard (Box 1.2). Limiting the duration of support programs can contain fiscal costs. Likewise, sharing risks with private banks through partial guarantees can reduce government exposure.

Estimating and managing fiscal risks from support to firms on an ongoing basis reduce subsequent losses. This requires establishing regular surveys or registries to obtain timely information about firms. Some measures, such as public guarantee programs that do not have immediate budget impact and are contingent on the recovery of the firms, make estimation difficult. Countries use different approaches to report the cost of support, including contingent liabilities, in the budget and fiscal risk statements but often underestimate the true cost (Battersby and others 2022). This in part reflects the difficulty in estimating implicit subsidies from government loans and guarantee programs. Hong and Lucas (forthcoming) apply an approach reflective of the fair value of support in seven advanced economies. They measure the fair value of the subsidy component as the difference between actual disbursement of loans and guarantees and the net present value of expected future cash flows (including loan principal repayment, interest, and guarantee fees) over the duration of the programs. To calculate this net present value, market interest rates are used as the discounting factor because they reflect market participants' views about the default risk for firms participating in the loan guarantee programs (US Congressional Budget Office 2012). Results for seven advanced economies suggest that

[10]Estimates by Auerbach and others (2022) for the United States suggest that fiscal support to firms, alongside other fiscal responses, contained the rise of bankruptcies, particularly for firms at the brink of exit.

Figure 1.11. Estimated Implicit Subsidy and Take-Up of Government Guarantee Programs, 2020–21
(Percent of loan principal and percent of GDP)



Source: Hong and Lucas, forthcoming.
Note: The take-up is measured by the take-up rate multiplied by the announced program size in percent of GDP. The subsidy component is a weighted average across countries as of the end of 2021.

governments subsidized a median of 30 percent of loan principal during the pandemic (Figure 1.11). Differences in program design explain the variation across countries, ranging from 24 percent to 100 percent: longer maturities or higher guarantee rates raise the subsidy component, whereas higher fees or interest rates reduce it. Guarantees were often more generous for small enterprises, leading to higher subsidies and associated fiscal risks. For example, the US Paycheck Protection Program is estimated to have been fully subsidized (essentially amounting to grants to firms), partly reflecting lenient requirements on repayment.

Preparing a Strategy Ready to Deploy

Preparation can help governments protect households and firms even better during large adverse shocks in advance. Specifying fiscal responses in advance to tackle all possible adversities is not feasible. Similarly, targeting support in real time in situations of great uncertainty is challenging. Nonetheless, countries can prepare strategies and tools that can be more readily deployed.

Building fiscal buffers in normal times is a prerequisite for policies to respond flexibly during crises without jeopardizing access to financing. As evident during the pandemic and the global financial crisis, fiscal policy can be active and powerful, if resources are available. Experience from the aftermath of earlier crises indicates that countries often do not rebuild sufficient buffers afterward—public debt remained elevated after the emergencies subsided, constraining countries' ability to respond to negative shocks. In the early stages of the pandemic, advanced economies and some emerging markets were able to finance a major fiscal expansion, despite elevated public debts, because interest rates were at the effective lower bound and inflation was below target. Those conditions are no longer in place and may not be in place when the next crisis strikes. Low-income countries face a stark trade-off because they need to build fiscal buffers against adverse shocks while pursuing development goals—similarly important elements of resilience. Building buffers requires gradual fiscal adjustment and involves trade-offs, including prioritizing competing spending needs and mobilizing domestic revenues, while pursuing inclusive and sustainable growth. Fiscal adjustments should in general be gradual and differentiated according to circumstances, under a medium-term fiscal framework to promote credibility.

Experience from the pandemic points to trade-offs between the risk of doing too much and the risk of doing too little, or between large fiscal costs and generosity of support (in terms of coverage or amounts per individual). Preparation can ameliorate those trade-offs, by improving the ability to target those in need and limiting incentives for individuals and firms to shirk or take on excessive risks. It may be helpful to develop a strategy that sets out desirable policy responses under various scenarios. In some cases, the evolution of high-frequency indicators of economic conditions can then be related by policymakers to such scenarios, facilitating their responses. In a few instances, it may also be feasible to put in place "semi-automatic" stabilizers (preagreed responses) that will thus be timely and attuned to economic conditions. Such an approach would make fiscal policy responses more predictable. The anticipation of policy support would help guide households' and investors' expectations and increase policy effectiveness. In turn, timely and efficient measures would limit net fiscal costs. The transparency of such an approach would integrate measures into medium-term fiscal frameworks, promote fiscal credibility, and reduce the influence of short-term political pressures.

Social protection systems are part of a resilience infrastructure and are compatible with a broad set of negative shocks. The recent crises have shown not only that social safety nets can be expanded quickly, often leveraging new technologies, but also that preparation is necessary to make them more readily scalable and well targeted to deliver cash or in-kind support to those who truly need it. Gathering information about

people and firms, and reducing informality in normal times make it possible to provide support more effectively and efficiently during crises.

In the face of soaring food and energy prices that have squeezed household budgets, countries can provide targeted and temporary support to vulnerable households. For emerging market and developing economies without strong social safety nets, existing social programs (for example, child benefits, public transportation, or school feeding programs) can be expanded to provide relief to vulnerable households, while taking advantage of the opportunity to strengthen the social protection system. Existing targeting methods in developing countries, although imperfect, can provide more on a per beneficiary basis, compared with universal programs (Hanna and Olken 2018). Improved legal frameworks and administrative capacity can facilitate targeting, leveraging digital innovations to verify eligibility and deliver payments, while limiting leakage and fraud.

Different types of adversity require a different mix of policy tools. The appropriate choice depends on the nature of the event, available policy space, and the extent of resilience in the private sector. For example, when inflationary pressures are high, fiscal policy should protect the most vulnerable while maintaining a tightening stance to facilitate the monetary policy's price stability objective. Scaling up existing means-tested cash transfers is preferable to enacting energy pricing subsidies because the rise in fuel costs passes on to end users, facilitating energy conservation and switching out of fossil fuels. For low-income countries, food security should be prioritized within the existing fiscal envelope. In general, rare events with major adverse impact (for example, major natural disasters or pandemics) would require multiple instruments and more proactive public interventions (Table 1.2). The response to negative shocks that occur with high probability but have less pronounced impact (for example, typical business cycles

Table 1.2. Appropriate Fiscal Tools to Deploy Depend on the Nature of the Adversity of Shocks

	Type of Adversity			
	Output or Employment Shock		Major Disruption in Key Goods and Services (for example, large spikes in food and energy prices)	Major Natural Disasters
Fiscal Tools	Temporary	Longer Lasting		
Automatic stabilizers	✓	✓	✓	✓
Unemployment income support[1]	✓	(✓): Supplement with active labor market policies	✗	✓
Job-retention schemes	✓	✗	✗	✓
Scale-up of social protection	(✓): Ready to scale up as needed	(✓): Facilitate better social well-being (equity and poverty reduction)	✓	(✓): Widen eligibility to cover affected people not just poor people
Progressive taxes	✓	✓	✓	✓
Discretionary or ad hoc measures				
Cash transfers	(✓): Only if targeted and severe adversity	✗	(✓): Build on current social protection system or targeted discounts on utility bills	(✓): Targeted transfer
Pricing subsidies	✗	✗	✗	✗
Discretionary support to firms				
Tax deferral	(✓): Particularly if limited access to finance before the shocks	✗	✗	✓
Financing measures (for example, direct lending and public guarantees)	(✓): If severe externalities exist	(✗): Should instead facilitate exit of nonviable firms	(✗): Unless evident severe externalities exist	✓

Source: IMF staff compilation.

[1] Comprises contributory unemployment insurance and noncontributory unemployment assistance benefits.

Note: ✓ refers to appropriate tools to be used to protect against income losses for the specific type of adversity. ✗ stands for less appropriate tools. Fiscal tools are not mutually exclusive, and governments can use multiple tools at the same time depending on the availability of the fiscal space and the nature of the shocks, institutional capacity of governments, debt sustainability concerns, and the private sector risk-sharing mechanism, among other factors.

or seasonal hurricanes) could rely on automatic stabilizers or existing market-based mechanisms such as private insurance for natural disasters. If those stabilizers are not available, targeted discretionary support could protect against income losses within available fiscal space and fiscal rule limits.

Fiscal responses need to have a clear exit strategy to ensure that they are temporary. To manage fiscal risks from measures without immediate budget impact, governments should focus on good governance, transparency, and quantification of risks and contingent liabilities. Regarding exceptional circumstances that call for fiscal support to viable firms, governments need to identify beforehand the externalities that warrant public interventions and clearly assess the trade-offs. Fiscal risks from the support programs need to be managed over time to reflect the implicit cost of measures, including by involving the private sector in sharing risks.

Global cooperation can bolster resilience by limiting the negative externalities a country could impose on others and by coordinating policy responses in the face of negative shocks. The COVID-19 pandemic has shown that global efforts are needed to step up vaccinations and pandemic preparedness to prevent, detect, and manage global health threats. Resilience to climate change calls for international support for investment in climate adaptation in vulnerable countries and the transition toward green energy. The new IMF Resilience and Sustainability Trust is part of such collaborative efforts. Building buffers in low-income developing countries is challenging given other pressing needs and limited capacity. In that context, advancing the Group of Twenty Common Framework for Debt Treatment could provide relief for low-income countries facing high risks of debt distress. In addressing the adverse impact from the surge in food and energy prices, governments need to eliminate export restrictions and avoid food hoarding, while increasing aid and humanitarian support to low-income developing countries. Energy pricing subsidies in individual countries harm others, particularly low-income developing countries without policy space. Global efforts are needed to support these low-income developing countries, including through emergency finance, humanitarian assistance, affordable food supply and production, and safeguards on access to finance.

Box 1.1. Building a Resilient Future

This box outlines how fiscal policy and institutions can build resilience to prominent challenges such as health shocks and pandemic preparedness, access to opportunities, and adaptation to climate change and natural disasters.

Investment in Health Care and Pandemic Preparedness

A health system supports resilience when it helps people recover from illness, injury, or disabilities and resume productive activities quickly, without incurring excessive expenditures that might lead to financial distress or personal bankruptcy (IMF 2022a). Deteriorated health conditions keep individuals out of work and school (Garcia-Gomez 2011; Bor and others 2012; Halla and Zweimüller 2013; Weil 2014; Trevisan and Zantomio 2016; Meyer and Mok, 2019; Jones, Rice, and Zantomio 2020) and lead to lower GDP growth (Dixon, McDonald, and Roberts 2001; Tompsett 2020). Unfavorable chronic health status in childhood is associated with lower educational attainment and reduced lifetime earnings (Almond 2006; Black, Devereux, and Salvanes 2007; Smith 2009; Currie 2016).

Global and national efforts are needed to build societal resilience to health shocks. The COVID-19 pandemic has led to a greater focus on invigorating country capacities to prevent, detect, and manage threats to health security, administer vaccinations and testing, and invest in global pandemic preparedness (Ahuja and others 2021; Agarwal and others 2022). Boosting health resilience requires well-articulated systems to respond to large outbreaks of diseases or public health emergencies without crowding out other health care needs and socioeconomic priorities. For example, the COVID-19 pandemic and associated disruptions led to 25 million children missing out on regular immunizations in 2021, nearly 6 million more than in 2019, according to the World Health Organization (Figure 1.1.1). More generally, investments in nutrition, clean water, improved sanitation, and basic health services such as primary care and immunizations are critical to improving health and resilience in many low-income countries that face financing and fiscal space constraints (Deaton 2013).

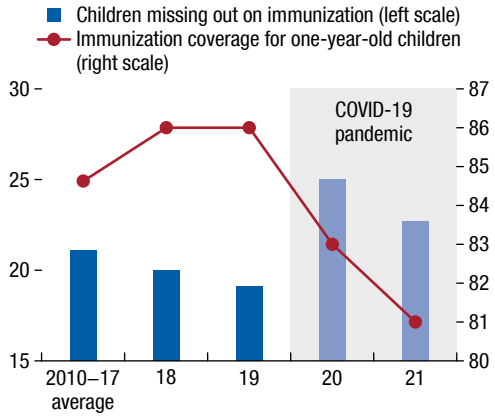
Equitable Access to Opportunities

A society is more resilient if individuals have similar access to opportunities, irrespective of the economic and social conditions into which they were born. If people do not face scarring for life after an adversity, inequality is lower, which helps preserve social and macroeconomic stability (Chetty and others 2020; IMF and World Bank 2020; April 2021 *Fiscal Monitor*).

Public investment in basic services such as education can build opportunity for individuals from disadvantaged backgrounds who have suffered setbacks. For example, additional resources are needed for students—especially those from lower-income families—who missed out on schooling during the pandemic (Agostinelli and others 2022). In countries with more developed tax systems, child tax credits to lower-income households can boost children's school attendance, performance, and future earnings (Chetty and others 2015) not only by making learning and health-related expenses more affordable for families, but also by relieving the stress of income insecurity.

Likewise, policies focusing on the acquisition of productive skills and on adapting labor market institutions to new forms of work can help workers adjust to and gain from economic transformation, such as digitalization (Organisation for Economic Co-operation and Development 2018). Policies include active labor market policies—vocational training, job search assistance, hiring subsidies—and support for entrepreneurship or independent workers. Making childcare more affordable and narrowing gender gaps in work can allow women to realize their full economic potential, even after pandemic-related disruption (Elborgh-Woytek and others 2013).

Figure 1.1.1. Children Missing Out on Non–COVID-19 Immunization
(Millions, left scale; immunization coverage in percent, right scale)



Sources: World Health Organization; and IMF staff estimates.

Box 1.1 *(continued)*

Adaptation to Climate Change and Resilience to Natural Disasters

By raising the frequency and severity of extreme weather events and natural disasters, climate change can have major fiscal costs and cause irreversible economic losses (IMF 2019; Intergovernmental Panel on Climate Change 2022). Vulnerability to recurrent disasters hampers a country's growth potential, both directly through damage to physical capital and indirectly through a higher effective cost of capital and greater migration outflows (April 2016 *Fiscal Monitor*). Disasters also disproportionately hurt the poor, who have fewer mechanisms for coping with them. For low-income and developing economies, economic development is an important element of resilience to climate change (Bellon and Massetti 2022).

Resilience to natural events requires investment in adaptation policies—often with the private sector participation (Roy and others 2018; October 2019 *Fiscal Monitor*; Intergovernmental Panel on Climate Change 2022). Investing in adaptation can reduce losses from climate change, support growth, and yield social and environmental benefits (Global Commission on Adaptation 2019). Adaptation strategies should be built on three pillars (IMF 2019; Bellon and Massetti 2022). The first is investment in physical and information infrastructure, including accompanying regulations. Both "hard" policy measures (for example, upgrading infrastructure resilience such as reliable power systems and efficient irrigation systems) under a strong infrastructure governance (Schwartz and others 2020; IMF 2022b) and "soft" measures (such as early warning systems and low-emission building codes and zoning rules) are needed. The second pillar concentrates on strengthening financial resilience to protect fiscal sustainability. Depending on the frequency and severity of disasters, governments can manage their risk by (1) building fiscal buffers to self-insure, (2) transferring risk through private sector insurance or regional mechanisms to share risks, (3) arranging credit lines or other contingent financing, or (4) accessing concessional financing and humanitarian assistance when risk transfer is not cost-effective in the event of large and rare disasters. The third pillar ensures a prompt response to and recovery from a major disaster through contingency planning and related investments. For example, social protection systems, including primary care networks, can be scaled up speedily for humanitarian needs.

Box 1.2. Designing Government Support to Firms during a Crisis

This box presents considerations for designing government support to firms in the event of a large shock, focusing on financing measures such as public loans, credit guarantees, and solvency support. Such support entails sizable risks and thus poses difficult trade-offs. It should generally be reserved for exceptional adverse shocks.

When designing measures to support firms, a comprehensive approach can manage risks and trade-offs. Public support for firms is usually extended in conjunction with other fiscal measures and financial policies. Policymakers need to set priorities, determine available resources, and coordinate different policies depending on the nature of the shocks and institutional capacity. Scarce public resources should focus on addressing market failures, such as widespread strains on firms' liquidity as a result of great uncertainty, which could have knock-on effects and further disrupt economic activity if left unaddressed.

Design Considerations

Policy priorities and sequencing. At the onset of a crisis, when uncertainty is great and market failures are evident, there is a premium on a swift response over fine-tuned targeting. Broad-based measures can buy time for policymakers to better assess the likely duration and impact of the shock (Balibek and others 2020). As activity recovers and information becomes available, priorities should shift toward more targeted measures to contain cost and avoid wasting support on nonviable firms. Existing institutional expertise and capacity influence the desired role of public and private sectors.

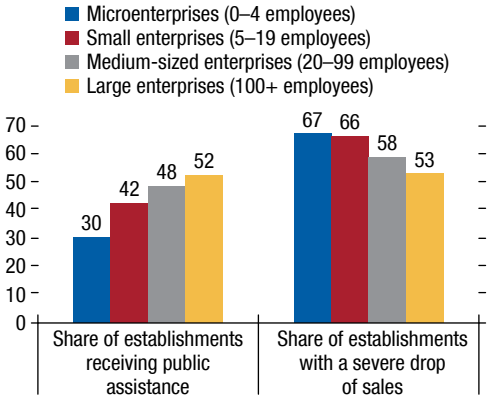
Assessing firms' viability and targeting support. Determining which firms to support is critical but challenging. Viability should be a key criterion—support should be directed to viable firms that face temporary difficulties, whereas unhealthy firms should be restructured or closed to avert a drag on productivity (Group of Thirty 2020; April 2021 *Global Financial Stability Report*). However, governments often lack the information or capacity to assess viability efficiently, especially during large crises. To overcome this constraint, some pandemic-related programs have engaged the private financial institutions or development banks (Credit Guarantee Fund in *Korea*, Micro Enterprise Facility in *Malaysia*) with a comparative advantage in serving as intermediaries. For example, *Colombia* relied on its development bank to extend credit support to firms during the pandemic.

To better target credit programs as recovery takes hold, governments could apply stricter credit underwriting standards, focus on addressing the effects of negative externalities on the loan portfolio rather than individual loans, and encourage differentiated credit spreads among supported firms. As the health crisis subsided, public loan programs became better targeted as in *Australia*, *Germany*, and the *United States.*

Choice of fiscal instruments. The selection of fiscal measures will depend on policy space and administrative capacity.

- *Large strategic viable firms.* Support for viable strategic firms tends to be arranged on an individual, ad hoc basis. In addition to extending direct solvency support, governments sometimes act as intermediaries between the problem firm and its creditors—for example, by creating incentives for greater private participation through debt-to-equity conversion.
- *Micro, small, and medium-sized enterprises.* Governments generally do not have the capacity to assess the viability of each firm, making it more challenging to target support to micro- and small-sized enterprises, which are numerous and diverse (Figure 1.2.1). Temporary standardized support by sector or based on the extent of losses may allow some differentiation but full tailoring to individual firms is not practical. Large informality also makes it challenging to reach firms in need. In this case, support can better be provided through the social protection system to limit income losses to households.

Figure 1.2.1. Firms Receiving Public Support



Sources: World Bank COVID-19 Business Pulse Surveys Dashboard; and IMF staff estimates.
Note: The numbers are group averages based on the latest wave of the survey for 2021. The survey months varied across countries from January to October.

Box 1.2 *(continued)*

Exit strategy. Government support should include an exit strategy. Prolonged support would add to fiscal costs and delay a necessary reallocation of resources toward productive uses. For example, the guarantee programs in the *United Kingdom* have clear sunset clauses. To avoid potential "cliff effects" as support is withdrawn, an exit strategy could be contingent on observable indicators rather than based on a preannounced timetable. A gradual withdrawal could narrow the scope of new loans, reduce the generosity of benefits, and increase private risk exposures. Raising gradually the guarantee fees or reducing the guarantee ratio backed by governments can facilitate exit from credit guarantee programs.

Managing fiscal risks. As many financing support measures are outside the traditional budget and fiscal reporting apparatus, strengthening the reporting of contingent liabilities and fiscal risks and quantifying such risks is crucial (see IMF Fiscal Risk Toolkit). Lack of clarity in legislative requirements on disclosure adds to the challenges. Robust oversight, sound legal frameworks, good governance, and transparency about the benefits and cost of support to firms will help prevent unwelcome surprises that could strain public finances (Emre and others 2020). In that context, preparing a framework in advance for the use of financing measures is important.

Supporting Institutions

Support to firms can involve other macroeconomic and financial policies, such as easing of bank capital requirements and provisioning requirements for nonperforming loans. Moreover, countries can strengthen their insolvency frameworks to prepare for a crisis. This may involve better use of out-of-court restructurings and bolstering the insolvency regime (Araujo and others 2022). Strong social protection systems are an important backstop for microenterprises and informal firms because targeted support to these firms is likely not practical.

References

Agarwal, Ruchir, Jeremy Farrar, Gita Gopinath, Richard Hatchett, and Peter Sands. 2022. "A Global Strategy to Manage the Long-Term Risks of COVID-19." IMF Working Paper 2022/68, International Monetary Fund, Washington, DC.

Agostinelli, Francesco, Matthias Doepke, Giuseppe Sorrenti, and Fabrizio Zilibotti. 2022. "When the Great Equalizer Shuts Down: Schools, Peers, and Parents in Pandemic Times." *Journal of Public Economics* 206 (104574).

Ahuja, Amrita, Susan Athey, Arthur Baker, Eric Budish, Juan Camilo Castillo, Rachel Glennerster, Scott Duke Kominers, Michael Kremer, Jean Lee, Canice Prendergast, Christopher M. Snyder, Alex Tabarrok, Brandon Joel Tan, and Witold Więcek. 2021. "Preparing for a Pandemic: Accelerating Vaccine Availability." *AEA Papers and Proceedings* 111: 331–35.

Aiken, Emily, Suzanne Bellue, Dean Karlan, Chris Udry, and Joshua Blumenstock. 2022. "Machine Learning and Phone Data Can Improve Targeting of Humanitarian Aid." *Nature* 603: 864–70.

Almond, Douglas. 2006. "Is the 1918 Influenza Pandemic Over? Long-Term Effects of In Utero Influenza Exposure in the Post-1940 U.S. Population." *Journal of Political Economy* 114 (4): 672–712.

Amaglobeli, David, Emine Hanedar, Gee Hee Hong, and Celine Thevenot. 2022. "Fiscal Policy for Mitigating the Social Impact of High Energy and Food Prices." IMF Note 2022/001, International Monetary Fund, Washington, DC.

Ando, Sakai, Ravi Balakrishnan, Bertrand Gruss, Jean-Jacques Hallaert, La-Bhus Fah Jirasavetakul, Koralai Kirabaeva, Nir Klein, Ana Lariau, Lucy Qian Liu, Davide Malacrino, Haonan Qu, and Alexandra Solovyeva. 2022. "European Labor Markets and the COVID-19 Pandemic: Fallout and the Path Ahead." IMF Departmental Paper 2022/004, International Monetary Fund, Washington, DC.

Araujo, Juliana, Jose Garrido, Emanuel Kopp, Richard Varghese, and Weijia Yao. 2022. "Policy Options for Supporting and Restructuring Firms Hit by the COVID-19 Crisis." IMF Departmental Paper 2022/002, International Monetary Fund, Washington, DC.

Auerbach, Alan, Yuriy Gorodnichenko, Peter McCrory, and Daniel Murphy. 2022. "Fiscal Multipliers in the COVID-19 Recession." *Journal of International Monetary and Finance* 126 (102669).

Auerbach, Alan, Yuriy Gorodnichenko, and Daniel Murphy. 2021. "Inequality, Fiscal Policy, and COVID-19 Restrictions in a Demand-Determined Economy." *European Economic Review* 137: 103810.

Autor, David, David Cho, Leland Crane, Mita Goldar, Byron Lutz, Johsua Montes, William B. Peterman, David D. Ratner, Daniel Villar Vallenas, and Ahu Yildirmaz. 2022. "An Evaluation of the Paycheck Protection Program Using Administrative Payroll Microdata." NBER Working Paper 29972, National Bureau of Economic Research, Cambridge, MA.

Balibek, Emre, Paulo Medas, John Ralyea, and Sandeep Saxena. 2020. "Public Sector Support to Firms." COVID-19 Special Series, International Monetary Fund, Washington, DC.

Barnes, Mitchell, Wendy Edelberg, Sara Estep, and Moriah Macklin. 2022. "Bolstered Balance Sheets: Assessing Household Finances since 2019." Report, Brookings Institution.

Battersby, Bryn, Raphael Espinoza, Jason Harris, Gee Hee Hong, Sandra Lizarazo Ruiz, Paolo Mauro, and Amanda Sayegh. 2022. "The State as Financier of Last Resort." IMF Staff Discussion Note 2022/02, International Monetary Fund, Washington, DC.

Baunsgaard, Thomas, and Nate Vernon. 2022. "Taxing Windfall Profits in the Energy Sector." IMF Note 2022/002, International Monetary Fund, Washington, DC.

Bellon, Matthieu, and Emanuele Massetti. 2022. "Planning and Mainstreaming Adaptation to Climate Change in Fiscal Policy." IMF Staff Climate Note 2022/003, International Monetary Fund, Washington, DC.

Bellon, Matthieu, Carlo Pizzinelli, and Roberto Perrelli. 2020. "Household Consumption Volatility and Poverty Risk: Case Studies from South Africa and Tanzania." IMF Working Paper 20/51, International Monetary Fund, Washington, DC.

Black, Sandra E., Paul J. Devereux, and Kjell G. Salvanes. 2007. "From the Cradle to the Labor Market? The Effect of Birth Weight on Adult Outcomes." *Quarterly Journal of Economics* 122 (1): 409–39.

Blanchard, Olivier J., Giovanni Dell'Ariccia, and Paolo Mauro. 2010. "Rethinking Macroeconomic Policy." IMF Staff Position Note 10/03, International Monetary Fund, Washington, DC.

Blanchard, Olivier J., and Lawrence H. Summers. 2020. "Automatic Stabilizers in a Low-Rate Environment." *AEA Papers and Proceedings* 110: 125–30.

Blanchet, Thomas, Emmanuel Saez, and Gabriel Zucman. 2022. "Real-Time Inequality." NBER Working Paper 30229, National Bureau of Economic Research, Cambridge, MA.

Blinder, Alan. 2016. "Fiscal Policy Reconsidered." The Hamilton Project Policy Proposal 2016–05, Brookings Institution, Washington, DC.

Bor, Jacob, Frank Tanser, Marie-Louise Newell, and Till Bärnighausen. 2012. "In a Study of a Population Cohort in South Africa, HIV Patients on Antiretrovirals Had Nearly Full Recovery of Employment." *Health Affairs* 31 (7): 1459–69.

Boushey, Heather, Ryan Nunn, and Jay Shambaugh, eds. 2019. *Recession Ready: Fiscal Policies to Stabilize the American Economy.* Washington, DC: Brookings Institution.

Brollo, Fernanda, Gabriel Lara Ibarra, and Ricardo Campante Vale. Forthcoming. "Strengthening Income Stabilization through Social Protection in Emerging and Developing Economies: The Case of Brazil." IMF Working Paper, Washington, DC.

Brunnermeier, Markus. 2021. *The Resilient Society: Economics after COVID*. Colorado Springs, CO: Endeavor Literary Press.

Caroll, Christopher, Jiri Slacalek, and Kiichi Tokuoka. 2014. "The Distribution of Wealth and the MPC: Implications of New European Data." *American Economic Review* 104 (5): 107–11.

Cereda, Fabio, Rafael M. Rubiao, and Liliana D. Sousa. 2020. "COVID-19, Labor Market Shocks, and Poverty in Brazil: A Microsimulation Analysis." Policy Note in Poverty and Equity Global Practice, World Bank, Washington, DC.

Chetty, Raj, John N. Friedman, Nathaniel Hendren, Michael Stepner, and the Opportunity Insights Team. 2020. "The Economic Impacts of COVID-19: Evidence from a New Public Database Built from Private Sector Data." *Opportunity Insights* (blog), Center for First-Generation Student Success, September.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. 2015. "The Economic Impacts of Tax Expenditures: Evidence from Spatial Variation across the U.S." Internal Revenue Service, Washington, DC.

Chodorow-Reich, Gabriel, Adi Sunderam, and Ben Iverson. 2022. "Lessons Learned from Support to Business during COVID-19." In *Recession Remedies: Lessons Learned from the U.S. Economic Policy Response to COVID-19,* edited by Wendy Edelberg, Louise Sheiner, and David Wessel, 123–61. Washington, DC: Hamilton Project, Brookings Institution.

Christl, Michael, Silvia De Poli, Francesco Figari, Tine Hufkens, Chrysa Leventi, Andrea Papini, and Alberto Tumino. 2022. "Monetary Compensation Schemes during the COVID-19 Pandemic: Implications for Household Incomes, Liquidity Constraints, and Consumption across the EU." JRC Working Papers on Taxation and Structural Reforms No. 03/2022, European Commission, Joint Research Centre, Seville. JRC128996.

Coady, David, Silvia De Poli, Adrian Hernández, Andrea Papini, and Alberto Tumino. Forthcoming. "An Analysis of the Extent and Composition of Automatic Stabilization in EU Countries." IMF Working Paper, International Monetary Fund, Washington, DC.

Currie, Janet. 2016. "The Long-Term Consequences of Children's Health and Circumstance." Focus on Poverty and Classroom Supplement, Institute for Research on Poverty, University of Wisconsin-Madison.

Cusmano, Lucia, and John Thompson. 2018. "Alternative Financing Instruments for SMEs and Entrepreneurs: The Case of Mezzanine Finance." OECD SME and Entrepreneurship Paper 2, OECD Publishing, Paris.

Deaton, Angus. 2013. *The Great Escape: Health, Wealth, and the Origins of Inequality*. Princeton, NJ: Princeton University Press.

Diez, Federico, Romain Duval, Jiayue Fan, Jose Garrido, Sebnem Kalemli-Ozcan, Chiara Maggi, Soledad Martinez-Peria, and Nicola Pierri. 2021. "Insolvency Prospects among Small and Medium-Sized Enterprises in Advanced Economies: Assessment and Policy Options." IMF Staff Discussion Note 2021/002, International Monetary Fund, Washington, DC.

Dixon, Simon, Scott McDonald, and Jennifer Roberts. 2001. "AIDS and Economic Growth in Africa: A Panel Data Analysis." *Journal of International Development* 13 (4): 411–26.

Dolls, Mathias, Clemens Fuest, and Andreas Peichl. 2012. "Automatic Stabilizers and Economic Crisis: US vs. Europe." *Journal of Public Economics* 96 (3–4): 279–94.

Ebeke, Christian, Jacques Miniane, Laura Papi, Manasa Patnam, Magnus Saxegaard, Volodymyr Tulin, and Laura Valderrama. 2021. "Solvency Support for Enterprises: Key Considerations and Preliminary Lessons from European Programs." COVID-19 Special Series, International Monetary Fund, Washington, DC.

Edelberg, Wendy, Louise Sheiner, and David Wessel, eds. 2022. *Recession Remedies: Lessons Learned from the U.S. Economic Policy Response to COVID-19*. Washington, DC: Brookings Institution.

Elborgh-Woytek, Katrin, Monique Newiak, Kalpana Kochhar, Stefania Fabrizio, Kangni Kpodar, Philippe Wingender, Benedict Clements, and Gerd Schwartz. 2013. "Women, Work, and the Economy: Macroeconomic Gains from Gender Equity." IMF Staff Discussion Note 13/10, International Monetary Fund, Washington, DC.

Emre, Ender, Alessandro Gullo, Christina Müller, Mia Pineda, Mario Tamez, and Karla Vasquez. 2020. "Legal Considerations on Public Guarantees Schemes Adopted in Response to the COVID-19 Crisis." COVID-19 Special Series, International Monetary Fund, Washington, DC.

Engler, Philipp, and Juha Tervala. 2018. "Hysteresis and Fiscal Policy." *Journal of Economic Dynamics and Control* 93 (C): 39–53.

Eyraud, Luc, Vitor Gaspar, and Tigran Poghosyan. 2017. "Fiscal Politics in the Euro Area." IMF Working Paper 17/018, International Monetary Fund, Washington, DC.

Ganong, Peter, Fiona Greig, Pascal Noel, Daniel Sullivan, and Joseph Vavara. 2022. "Unemployment Insurance." In *Recession Remedies: Lessons Learned from the U.S. Economic Policy Response to COVID-19,* edited by Wendy Edelberg, Louise Sheiner, and David Wessel, 49–90. Washington, DC: Brookings Institution.

García-Gómez, Pilar. 2011. "Institutions, Health Shocks and Labour Market Outcomes across Europe." *Journal of Health Economics* 30 (1): 200–13.

Gelman, Michael, and Melvin Stephens, Jr. 2022. "Economic Impact Payments during COVID-19." In *Recession Remedies: Lessons Learned from the U.S. Economic Policy Response to COVID-19,* edited by Wendy Edelberg, Louise Sheiner, and David Wessel, 91–122. Washington, DC: Brookings Institution.

Giupponi, Giulia, Camille Landais, and Alice Lapeyre. 2022. "Should We Insure Workers or Jobs during Recessions?" *Journal of Economic Perspectives* 36 (2): 29–54.

Global Commission on Adaptation. 2019. "Adapt Now: A Global Call for Leadership on Climate Resilience." Global Center on Adaptation and World Resources Institute, Rotterdam, The Netherlands.

Goldfayn-Frank, Olga, Vivien Lewis, and Nils Wehrhofer. 2022. "Spending Effects of Child-Related Fiscal Transfers." Deutche Bundesbank Discussion Paper 26/2022, Deutche Bundesbank, Frankfurt am Main, Germany.

Gourinchas, Pierre-Olivier, Sebnem Kalemli-Özcan, Veronika Penciakova, and Nick Sander. 2022. "Estimating SME Failures in Real Time: Application to the COVID-19 Crisis." NBER Working Paper 27877, National Bureau of Economic Research, Cambridge, MA.

Granja, João, Christos Makridis, Constantine Yannelis, and Eric Zwick. 2020. "Did the Paycheck Protection Program Hit the Target?" NBER Working Paper 27095, National Bureau of Economic Research, Cambridge, MA.

Grosh, Margaret, Carlo del Ninno, Emil Tesliuc, and Azedine Ouerghi. 2008. *For Protection and Promotion: The Design and Implementation of Effective Safety Nets.* Washington, DC: World Bank.

Group of Thirty (G30). 2020. "Reviving and Restructuring the Corporate Sector Post-Covid: Designing Public Policy Interventions." G30, Washington, DC.

Halla, Martin, and Martina Zweimüller. 2013. "The Effect of Health on Earnings: Quasi-Experimental Evidence from Commuting Accidents." *Labour Economics* 24: 23–38.

Hanna, Rema, and Benjamin A. Olken. 2018. "Universal Basic Incomes versus Targeted Transfers: Anti-Poverty Programs in Developing Countries." *Journal of Economic Perspectives* 32 (4): 201–26.

Hong, Gee Hee, and Deborah Lucas. Forthcoming. "Evaluating the Costs of Government Credit Support Programs during COVID-19: International Evidence." Washington, DC.

Intergovernmental Panel on Climate Change (IPCC). 2022. "Climate Change 2022: Impacts, Adaptation, and Vulnerability." Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva, Switzerland.

International Monetary Fund (IMF). 2019. "Building Resilience in Developing Countries Vulnerable to Large Natural Disasters." IMF Policy Paper 2019/20, Washington, DC.

International Monetary Fund (IMF). 2022a. "IMF Engagement on Health Spending Issues in Surveillance and Program Work." IMF Technical Notes and Manuals 2022/004, Washington, DC.

International Monetary Fund (IMF). 2022b. *PIMA Handbook Public Investment Management Assessment* (1st ed.). Washington, DC: IMF.

International Monetary Fund (IMF) and World Bank. 2020. "Enhancing Access to Opportunities." IMF and World Bank, Washington, DC.

Johnson, David S., Jonathan A. Parker, and Nicholas S. Souleles. 2006. "Household Expenditure and the Income Tax Rebates of 2001." *American Economic Review* 96 (5): 1589–610.

Jones, Andrew M., Nigel Rice, and Francesca Zantomio. 2020. "Acute Health Shocks and Labour Market Outcomes: Evidence from the Post-Crash Era." *Economics & Human Biology* 36: 100811.

Kaplan, Nathan, Claire Mills, and Asani Sarkar. 2022. "Did Changes to the Paycheck Protection Program Improve Access for Underserved Firms?" *Liberty Street Economics* (blog), Federal Reserve Bank of New York, July 6.

Lam, W. Raphael, and Alexandra Solovyeva. Forthcoming. "Income Stabilization in European Union Countries During the Pandemic—Microsimulation Approach." International Monetary Fund, Washington, DC.

Landais, Camille, Pascal Michaillat, and Emmanuel Saez. 2018. "A Macroeconomic Approach to Optimal Unemployment Insurance: Theory." *American Economic Journal: Economic Policy* 10 (2): 152–81.

McKay, Alisdair, and Ricardo Reis. 2016. "The Role of Automatic Stabilizers in the U.S. Business Cycle." *Econometrica* 84 (1): 141–94.

McKay, Alisdair, and Ricardo Reis. 2021. "The Optimal Automatic Stabilizers." *Review of Economic Studies* 88 (5): 2375–406.

Meyer, Bruce D., and Wallace K. C. Mok. 2019. "Disability, Earnings, Income, and Consumption." *Journal of Public Economics* 171: 51–69.

Meyer, Bruce D., Connacher Murphy, and James X. Sullivan. 2022. "Changes in the Distribution of Economic Well-Being during the COVID-19 Pandemic: Evidence from Nationally Representative Consumption Data." NBER Working Paper 29878, National Bureau of Economic Research, Cambridge, MA.

Mohl, Philipp, Gilles Mourre, and Klara Stovicek. 2019. "Automatic Fiscal Stabilizers in the EU: Size and Effectiveness." Economic Brief 045, Directorate-General for Economic and Financial Affairs, European Commission, Luxembourg.

Ohnsorge, Franziska, and Shu Yu, eds. 2022. *The Long Shadow of Informality: Challenges and Policies*. Washington, DC: World Bank.

Organisation for Economic Co-operation and Development (OECD). 2018. "Achieving Inclusive Growth in the Face of Digital Transformation and the Future of Work." OECD Report to the G20 Finance Ministers, OECD Publishing, Paris.

Parker, Jonathan, Jake Schild, Laura Erhard, and David Johnson. 2022. "Household Spending Responses to the Economic Impact Payment of 2020: Evidence from the Consumer Expenditure Survey." NBER Working Paper 29468, National Bureau of Economic Research, Cambridge, MA.

Romer, Christina, and David Romer. 2010. "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks." *American Economic Review* 100 (3): 763–801.

Roy, Joyashree, Petra Tschakert, and Henri Waisman. 2018. "Sustainable Development, Poverty Eradication, and Reducing Inequalities." In *Global Warming of 1.5°C*, edited by Valerie Masson-Delmotte, Panmao Zhai, Hans-Otto Portner, Debra Roberts, Jim Skea, Priyadarshi R. Shukla, Anna Pirani, Wilfran Moufouma-Okia, Clotilde Pean, Roz Pidcock, Sarah Connors, J. B. Robin Matthews, Yang Chen, Xiao Zhou,

Melissa I. Gomis, Elisabeth Lonnoy, Tom Maycock, Melinda Tignor, and Tim Waterfield, 445–538. Cambridge: Cambridge University Press.

Schwartz, Gerd, Manal Fouad, Torben S. Hansen, and Genevieve Verdier, eds. 2020. *Well Spent: How Strong Infrastructure Governance Can End Waste in Public Investment.* Washington, DC: International Monetary Fund.

Shang, Baoping, Brooks Evans, and Zhiyong An. 2020. "Expenditure Policies in Support of Firms and Households." COVID-19 Special Series, International Monetary Fund, Washington, DC.

Smith, James P. 2009. "The Impact of Childhood Health on Adult Labor Market Outcomes." *Review of Economics and Statistics* 91 (3): 478–89.

Solow, Robert. 2005. "Rethinking Fiscal Policy." *Oxford Review of Economic Policy* 21 (4, Winter): 509–14.

Tompsett, Anna. 2020. "The Lazarus Drug: The Impact of Antiretroviral Therapy on Economic Growth." *Journal of Development Economics* 143 (March): 102409.

Trevisan, Elisabetta, and Francesca Zantomio. 2016. "The Impact of Acute Health Shocks on the Labour Supply of Older Workers: Evidence from Sixteen European Countries." *Labour Economics* 43: 171–85.

Una, Gerardo, Holger van Eden, Ashni Singh, Felipe Bardella, and Alok Verma. 2020. "Enhancing Digital Solutions to Implement Emergency Responses." COVID-19 Special Series, International Monetary Fund, Washington, DC.

US Congressional Budget Office. 2012. "Fair-Value Estimates of the Cost of Federal Credit Programs in 2013." Washington, DC: US Congressional Budget Office.

Weil, David N. 2014. "Health and Economic Growth." In *Handbook of Economic Growth* (1st ed.), edited by Philippe Aghion and Steven Durlauf, 623–82. Amsterdam: Elsevier.

World Bank. 2021. *Supporting Firms in Restructuring and Recovery*. Equitable Growth, Finance, and Institution Insight, Washington, DC: World Bank.

World Bank. 2022. *Poverty and Shared Prosperity 2022: Toward Inclusive Recovery*. Washington, DC: World Bank.