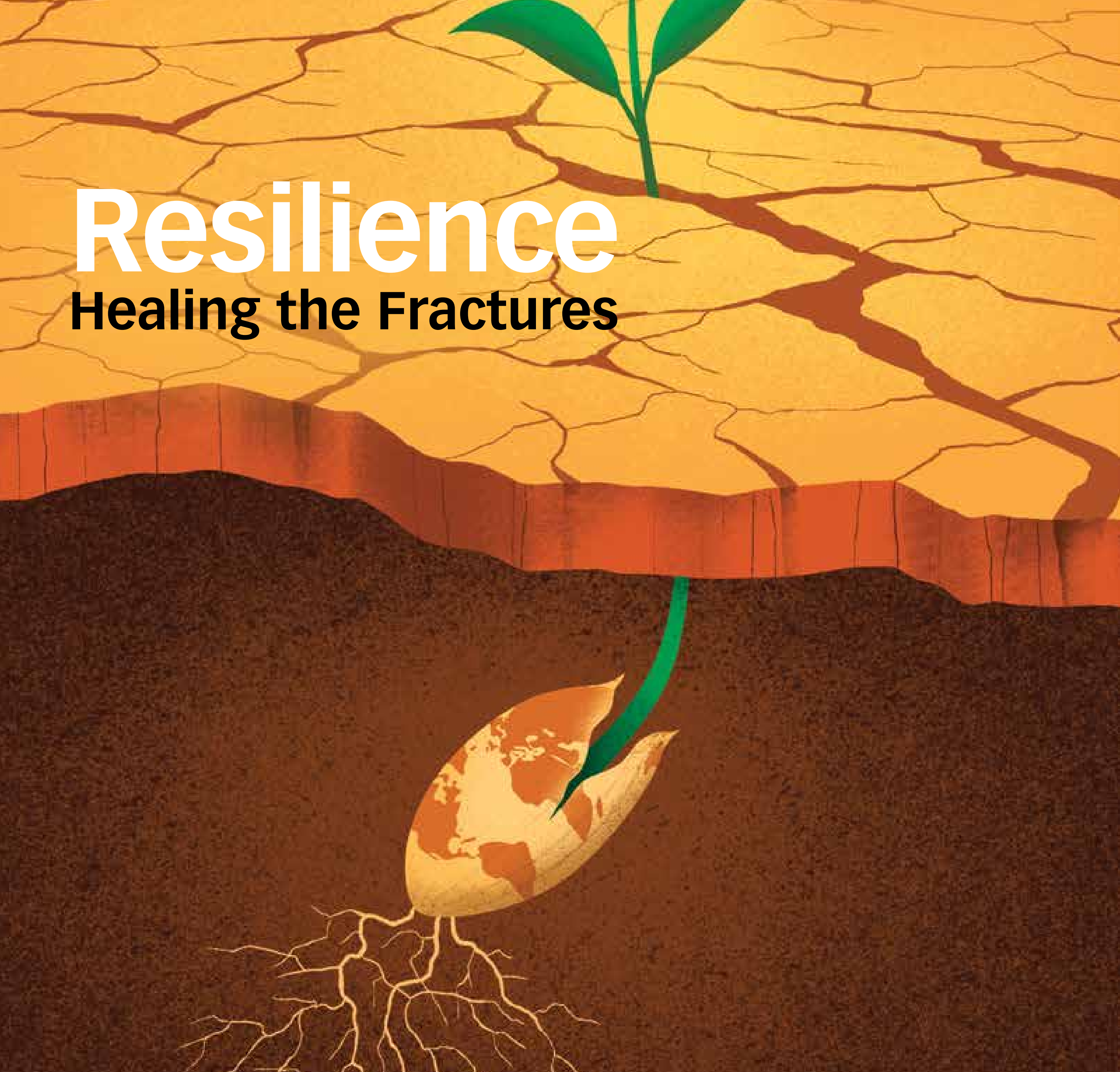
F&D
FINANCE AND DEVELOPMENT
SEPTEMBER 2020

Resilience
Healing the Fractures



INTERNATIONAL MONETARY FUND

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We must use this crisis to build new and **stronger bonds**, in our communities, in our countries, and globally

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FINANCE & DEVELOPMENT
A Quarterly Publication of the International Monetary Fund
September 2020 | Volume 57 | Number 3

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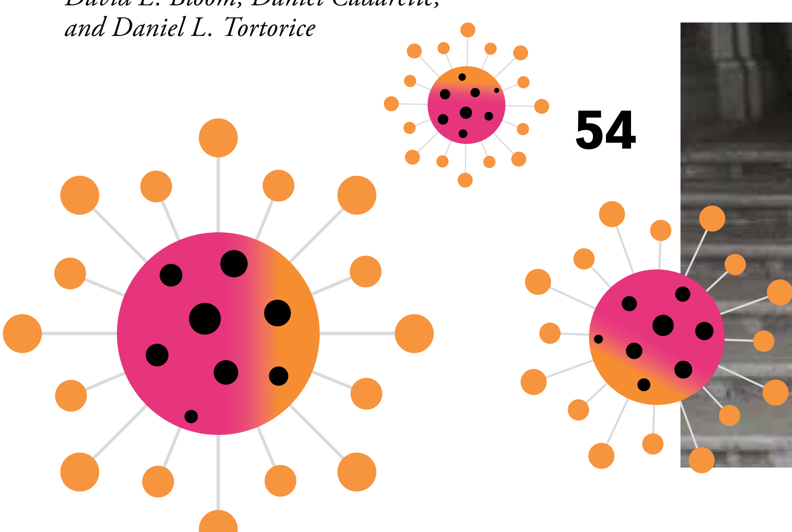

DEPARTMENTS

PHOTO: TANIA/CONTRASTO/REDUX

Cracks of Light

WHEN THE WORLD returns to work, we face many unknowns. Will jobs come back? How will we travel again? What will recovery look like? Much is still a question mark. What we do know is that the age of COVID-19 has painfully exposed and widened existing economic and social divisions and created new ones. It has accentuated disparities among workers, especially the young, female, and least educated. It has made more acute frailties in public health systems, the precariousness of work, and the digital divide. It has challenged governments, which now face higher spending needs and ballooning debts. And it has brought to light the simmering issue of racial injustice.

Yet this crisis and the fault lines it is exposing are inspiring calls for a rethinking of our priorities and reconsidering the very structure of the world economy toward a future that is more equitable, adaptable, and sustainable—more resilient. This issue of F&D gives voice to diverse contributors on what needs to be done.

"The networked problems of our time are amenable to networked solutions," writes Ian Goldin, making the case for international cooperation not only among governments but also in civil society and business. Joseph Stiglitz argues for rewriting the rules of the economy to protect workers and the environment, calling for greater global and national solidarity. Carmen Reinhart, Kenneth Rogoff, and others consider ways to handle a coming wave of debt restructuring for the poorest countries. Other contributors focus on digital technology, climate, and public health, including vaccine development.

The post-pandemic world will be transformed in important ways. If the crisis prompts a radical reset of our economic and social life with policies that invest in people and reflect a shared sense of our fate as human beings, so much the better. The world will emerge resilient from this dark chapter. In the words of songwriter Leonard Cohen, "There's a crack in everything, that's how the light gets in." FD

GITA BHATT, editor-in-chief

ON THE COVER

Our September 2020 issue shines a light on the fault lines exposed by the COVID-19 crisis while holding out hope that the world will emerge resilient. Illustrator Davide Bonazzi's cover likens that resilience to a green shoot bursting forth from the parched earth.

FINANCE & DEVELOPMENT
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Subscriber services, changes of address, and advertising inquiries:
IMF Publication Services
Finance & Development
PO Box 92780
Washington, DC 20090, USA
Telephone: (202) 623-7430
Fax: (202) 623-7201
E-mail: publications@imf.org

Postmaster: send changes of address to *Finance & Development*, International Monetary Fund, PO Box 92780, Washington, DC 20090, USA.

The English edition is printed at Dartmouth Printing Company, Hanover, NH.

Finance & Development is published quarterly by the International Monetary Fund, 700 19th Street NW, Washington, DC 20431, in English, Arabic, Chinese, French, Russian, and Spanish.
English edition ISSN 0145-1707

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RETHINKING GLOBAL RESILIENCE

The pandemic is straining economic and social fault lines: the only remedy is international cooperation

Ian Goldin

An infected passenger flies from Wuhan to Milan, a computer virus invades an internet connection, subprime defaults in the US Midwest trigger a global economic crisis. The super-spreaders of the goods of globalization—airport hubs, fiber-optic cables, global financial centers—are also the super-spreaders of the bads. This is the "butterfly defect" of globalization, the systemic risk endemic to our hyperconnected world, in which small actions in one place can spread rapidly to have global effects.

My book *The Butterfly Defect* shows why globalization creates systemic risks. It also shows why stopping globalization will not stop global threats but rather will amplify them. There is no wall high enough to keep out climate change, pandemics, and other catastrophic risks. But high walls undermine the potential for cooperation required to manage our shared risks. Protectionism reduces investment, trade, tourism, and technological advances, which create jobs and higher incomes, reducing the capacity of countries to build resilience. The solution is in working together to make globalization safe and sustainable, not in working against each other.

Leadership is required to manage the negative dimensions of globalization and harvest the positive, to ensure progress is not overwhelmed by common threats. Resilient systems are only as strong as their weakest links. Stopping the next pandemic, which could be even worse than COVID-19, must be a priority. This requires reinforcing and reforming the World Health Organization (WHO) to give it the governance, staff, and capacity it needs to be the world's rapid-response fighting force on global health.

In recent decades, globalization has led to revolutionary changes that have outstripped the slower evolution of institutions, causing a widening gap between our increasingly complex systems and our methods for managing their risks. As we saw with the financial crisis and now with COVID-19, systemic risks can quickly overwhelm processes that previously appeared robust. While there is no doubting the pandemic threat, the slower-moving but accumulating dangers posed by climate change require equally concerted action.

The pandemic has highlighted our lack of immunity to natural threats, but also created an opportunity to reset our economies. There is no shortage of ideas regarding green stimulus policies, which offer the potential to build back better and accelerate the transition from fossil fuels. Global protests, from climate to race, have demonstrated the appetite for fresh thinking. And COVID-19 has also demonstrated that citizens are prepared to change their behavior when required to do so. All that remains is for governments to act.

Networked solutions needed

COVID-19 has highlighted the pressing need for better global risk management. So too has escalating climate change. As did the financial crisis. Urgent reform is required to tame the butterfly defect of globalization.

These networked threats require changes in all parts of the system. Action must begin with us as individuals changing our behavior—for example by wearing masks and weaning ourselves off fossil fuels. Resilience cannot be delegated to others. It is everyone's responsibility. Firms should value a prudent level of spare working capital as a valuable investment in resilience, not just as excess fat to be trimmed to maximize leverage. Minimizing the amount of capital or spare capacity tied up through just-in-time or lean management systems can undermine resilience. Regulators should note the lessons from the Eyjafjallajökull volcano, the Tohoku tsunami, Hurricanes Katrina to Maria, and now COVID-19—that widespread leanness can multiply into systemic fragility.

Our financial, digital, trade, and other systems are intertwined through complex networks. The intersecting nodes and hubs are concentrated in specific locations, such as global financial centers and major ports and airports. The concentration of logistic or other nodes in one location makes them vulnerable, as does the concentration of key personnel and information in headquarters buildings. Resilience can be enhanced by greater geographic diversification, but its benefits have not yet found their way into competition policy or risk management strategies.

A growing number of shareholders and managers of forward-looking firms have expressed their desire to improve their companies' resilience to systemic shocks. And politicians are similarly keen to improve the resilience of the public sector. Although welcome, this requires deeper analysis, including to determine how much resilience, and to what; firms and governments do not have the financial or other resources to insulate themselves totally from all possible shocks.

Resilience can be improved by decentralization, so that individuals, businesses, and countries are empowered to make their own decisions. The principle of subsidiarity is, however, a complement not a substitute for higher levels of authority. Overarching principles are necessary for risk management, and for global systemic risks. This requires that countries yield some autonomy to supranational institutions. Countries that have assiduously followed the guidelines of the WHO have done best, whether they are relatively poor, such as Vietnam, or richer, such as Canada. Stark differences in the management of COVID-19 have demonstrated the importance of operating at multiple levels to contain risk and that robust international, national, subnational, and local actions are required.

Multilateral institutions should be at the apex of this layered approach. Yet there remains a set of orphan issues with no institutional home. A number of international agencies provide analysis and information on climate change, such as the International Panel on Climate Change. But there is no global institution with decision-making and enforcement power to coordinate responses. There also is no major global organization working on cybercrime, even though a single computer virus, such as WannaCry or NotPetya—whether produced by organized state agencies or lone-wolf individuals—can spread globally and cause billions of dollars of damage within days. This threat, like that of extremist ideologies and the subversion of democracy or vaccination campaigns through fake news, is spread opportunistically through the digital networks of globalization. While these threats transcend national borders, as do the threats posed by climate change, pandemics, and terrorism, current responses are predominantly national (or regional, in the case of the European Union).

Significant progress can still be made using the Pareto principle (which states that 80 percent of consequences come from 20 percent of causes), since a small set of actors can usually resolve a large part of any problem. And those that contribute the greatest share of the problem have the greatest responsibility to resolve it. A small number of countries and companies account for well over two-thirds of carbon emissions. New York state accounts for more carbon emissions than 45 African countries. It also consumes more antibiotics than all these nations combined. As the Oxford Martin Commission for Future Generations report "Now for the Long Term" argues, a C20-C30-C40 partnership of the largest countries, companies, and cities would include enough key players to make a significant difference in addressing climate change. The success of coalitions that emerged to tackle ozone depletion or reverse the tide of HIV/AIDS provides inspiring insight into the ability of coalitions of committed citizens, companies, and countries to make a difference, bolstering the efforts of the United Nations and multilateral institutions.

Global governance in the 21st century

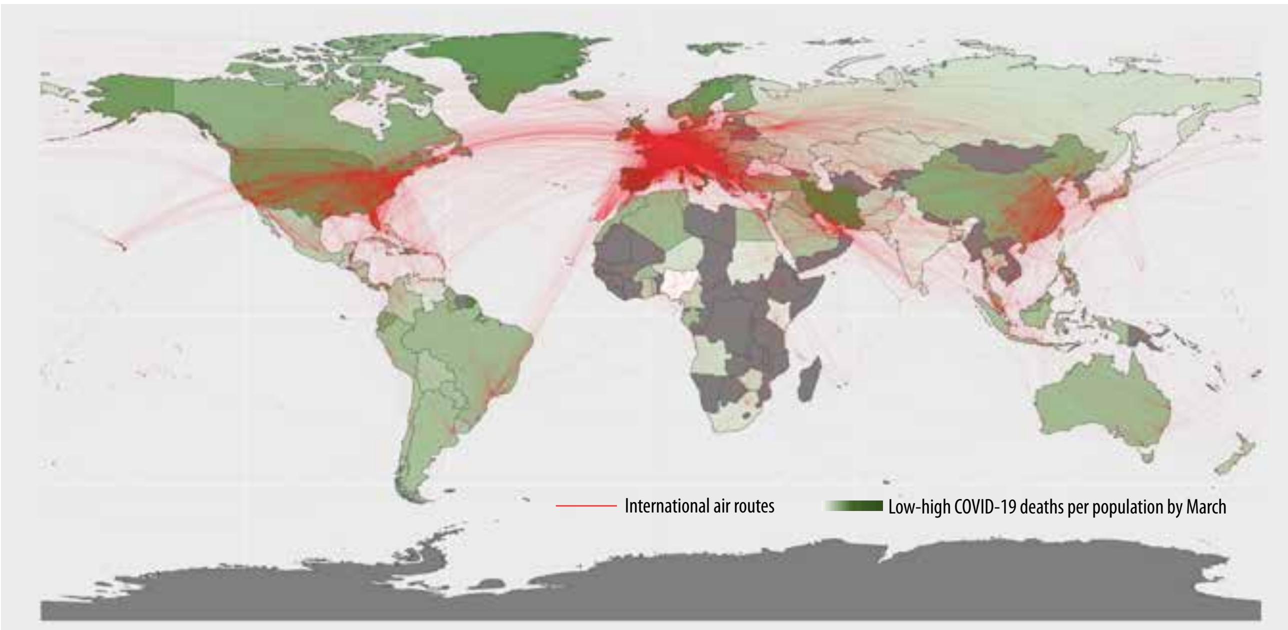
Multilateral institutions can only be as effective as their shareholders allow. In response to the COVID-19 crisis, the IMF has streamlined its processes and provided unprecedented support for its members. But not all institutions have been able to rise to the challenge, and developing economies remain in dire need of additional multilateral support. The WHO should be the world's rapid-response force on global health but has been undermined just when it is needed most. And while global trade could use a shot in the arm, the effectiveness of the World Trade Organization is stymied by trade wars and the blocking of much-needed appointments and reforms.

China-centered institutions are becoming increasingly important, including the Asian Infrastructure Investment Bank and the constellation of bilateral agreements forming the Belt and Road Initiative. Working with these institutions, rather than against them, is essential, as solving global problems requires more firepower and coordination. More diverse personnel also bring greater effectiveness and legitimacy, with broader engagement providing a source of strength rather than anxiety.

In addition to the rise of new powers and the inclusion of more diverse government views, the

Airlines and the Pandemic

The initial spread of the virus was aided by the international flight network.



Sources: Deaths – Our World in Data; Flights – OpenFlights.org.

growing role of private companies needs to be factored into the global architecture. Amazon Web Services and Google Cloud are now systemically important financial infrastructure, while Amazon Marketplace is critical for commerce. Facebook has emerged as a dominant distribution system for public health information, and Alibaba for personal protective equipment; Apple and Google lead Western attempts at app-based contact tracing.

As ever, the next crisis will not conform to our old mental maps; establishing partnerships with those who understand the new landscape is vital to prepare for it. But the private sector is not always benign, and we require independent regulators who are able to control the rising power of superstar firms. A constant renewal of technical expertise is also necessary to ensure that the experience of the financial crisis, when experts and regulators failed to understand credit derivatives, is not repeated with newly emergent threats.

Four meta-horsemen

What are the biggest barriers to reform of global institutions? We can fight pestilence, war, famine, and death—and we have in the past—but to do so we must confront the four meta-horsemen: short-termism, nationalism, cost, and capture. Electorates can prevent governments taking long-term actions and may support protectionist policies, while governments themselves have only limited finances and feel the need to prioritize the urgent issues of the day rather than vitally important looming issues.

COVID-19 shows that where there is a will, all four meta-horsemen can be overcome. Politicians have a limited attention span and focus on the issues of the day, but electorates shaken by COVID-19 will demand long-term solutions. Leaders in the United States, the United Kingdom, Russia, Brazil, and beyond are facing growing criticism over their responses to the pandemic; voters will not forgive governments caught unprepared a second time. Nor will history forgive a generation of leaders who fail to prevent catastrophic climate change. As the inspiring leaders who forged a new world order while fighting World War II taught us, it is possible to focus on both short-term and longer-term challenges simultaneously. The shareholders of global institutions, and of private companies, need to do the same thing.

The next crisis will not conform to our old mental maps; establishing partnerships with those who understand the new landscape is vital to prepare for it.

The COVID-19 health and economic emergencies demonstrate that coordinated global efforts are required. To stop boomerang infections takes international cooperation on vaccines. To overcome chronic shortages of skilled doctors and nurses we need immigrants. And to address climate change, stop future financial crises, and overcome poverty we must harvest the benefits of globalization while resolutely remedying its weaknesses, not least the butterfly defect of systemic risk.

Resources are available in high-income countries—governments and electorates simply need to reorder their priorities. Governments around the world allocate an average 6 percent of their expenditures to the military but less than one one-hundredth of this amount to the prevention of pandemics, despite their much greater threat to the population than war. At the international level, the budget of the WHO is less than that of a single major hospital in the United States. Rapid growth in response to the COVID-19 crisis shows that when the national interest is at stake the resources can be found. These lessons need to be carried forward.

The financial crisis highlighted the risks arising from groupthink and capture of regulatory agencies by lobbies. Ensuring that gamekeepers have the knowledge and independence to keep increasingly agile and well-resourced poachers at bay is essential for resilient systems.

Inertia bedevils institutional reform. Overcoming the capture of organizations by vested interests is vital to ensure that their governance, staff, and activities reflect the needs of the future rather than those of the past. The institutional landscape is littered with well-intentioned reforms that have not been implemented.

Progress is possible, as is evident in the radical changes that many institutions have undertaken. Once a limited technical organization, the European Coal and Steel Community grew into the European Union, which has taken on a wide range of national responsibilities. Crisis can be a catalyst. The United Nations, IMF, World Bank, Marshall Plan, and welfare state were all forged in the fires of World War II. In recent months the IMF has approved a record number of loans in record time, with fewer conditions attached, while its staff was working remotely. National governments have torn up the old rulebooks to provide direct support to workers and firms. What once seemed impossible has been done.

The devastation caused by COVID-19 compels us to redouble our efforts to create a fairer and more inclusive world. This requires that we address the threats that endanger our lives and exacerbate inequality, poverty, and climate change. Building a resilient and sustainable future requires action by all of us, from the individual level up to the global level. International cooperation is vital not only between governments, but through civil society, business, and professional collaboration. The networked problems of our time are amenable to networked solutions. We must use this crisis to build new and stronger bonds, in our communities, in our countries, and globally. FD

IAN GOLDIN is professor of Globalization and Development at Oxford University, presenter of the BBC Series *The Pandemic That Changed the World*, and coauthor of *Terra Incognita*. Alex Copestake provided research assistance for this article.

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PHOTO: IMF/CORY HANCOCK

Knightmare Uncertainty

In the COVID-19 world, risk has become riskier

Geoffrey Okamoto

THE AMERICAN ECONOMIST Frank Knight theorized about the difference between risk and uncertainty in his classic book *Risk, Uncertainty and Profit*. Risk is "a quantity susceptible of measurement." A precise outcome may not be known, but the probability of a few that are most likely can be calculated. Uncertainty means there is not enough information to even narrow down the possibilities. When a situation is "not susceptible to measurement" economists call it *Knightian uncertainty*.

If this sounds familiar, it is because we are living in the most *unmeasurable* of times. All aspects of life have been disrupted by the simple fact that it is harder to quantify the risk of going to work, shopping for groceries, or having a wedding. Despite necessary optimism, there is great uncertainty about treatments for COVID-19 and a vaccine: when they may be available, how effective they will be, how willing people will be to take them. While it will take years to rebuild the economic devastation and restore jobs and growth, the pandemic will have a lasting impact on how we choose to live our lives. The 1920s economic chaos left many Germans traumatized about inflation to this day; Americans who experienced the Great Depression remained frugal throughout their lives. This pandemic could fundamentally change how we view and manage risk and uncertainty, with lasting consequences on investment decisions, business strategies, government policies, and overall economic productivity.

Individuals may change their risk perceptions permanently after a sharp and sudden loss of income, leading to higher precautionary saving. In the short term, this may mean less debt, but in the long term it could lead to deeper structural changes, such as less willingness to take on a 30-year mortgage. In many countries, home ownership is low because long-term debt is seen more as a risk than an opportunity. Consumption patterns may change if people whose health is at high risk avoid certain activities. Consumers may decide to hold more essential goods in fear of new lockdowns—good news for toilet paper manufacturers, at least! But what about a young woman who has mulled over a transformational business idea night after night at her kitchen table, but whose now-heightened aversion to risk means a business is never started, employees are never hired, and products are never launched? High uncertainty makes it harder still to predict the net impact of so many behavior changes.

Companies also face a new set of uncertainties. US carmakers have experienced parts shortages because the Mexican state of Chihuahua, where many suppliers are based, has limited factory attendance to 50 percent of employees. Such disruptions may lead manufacturers to diversify their supply chains or keep more inventory on hand. Employee health is another new operational risk. Will companies decide to rely more on automation as a result?

Changing suppliers, keeping more inventory, and needing to invest in more advanced machinery all bear costs for manufacturers often operating on thin profit margins. But raising prices in a recession is also difficult. For goods deemed "essential," like medical supplies, countries may change regulations or subsidize domestic production, altering the competitive landscape. Similar to households, companies hit by a sharp drop in revenue may keep higher liquidity buffers. Some changes may be quantifiable once shifts in production stabilize and the impact on earnings becomes clearer, but uncertainty will remain for a long time for many companies.

Market volatility, defaults, and evolving regulation will change the landscape for the **financial sector**. The extreme swings in market conditions and asset prices seen early in the outbreak will change risk management models, with impacts on liquidity and capital buffers held to manage such risks. Regulations may also change, as policymakers seek to prevent a recurrence of the volatility and reduce the need for central bank interventions to preserve market functioning. Moreover, the recession will increase losses.

Economic policymakers are confronted with an intricate new puzzle: how to finance higher spending demands amid falling revenue and ballooning debt. Without a solution to the health crisis, governments will be dealing with unmeasurable variables in trying to plan the future. Private sector interventions through guarantees or direct ownership may have lasting and hard-to-quantify implications for competition and private risk-taking, beyond the immediate impact on public sector balance sheets

What does all this mean for the IMF? We have been called to action like never before, providing emergency support to a record number of countries within a short time frame. We have introduced new support facilities and expanded the borrowing limits on existing ones.

The IMF faces new operational challenges. Many countries have requested financial assistance to weather this storm. Some have challenging debt loads, where sustainability is hard to measure amid elevated uncertainties about growth and trade prospects. And if some countries do need to renegotiate their debts in a post-COVID world, the private sector will have to play a larger role in providing financing assurances to reduce uncertainty, given its increased importance as a creditor. Our members are also asking for policy advice and for help developing the capacity to cope with this severe shock. We must respond while still largely working remotely and unable to travel. Similar operational restrictions have challenged production of one of our key raw materials: timely and accurate country statistics.

In fact, one of our core functions, economic surveillance, has had to reinvent itself. Going back to Knight's concepts, much of our work focuses on measuring and addressing quantifiable risks. We use macroeconomic data to create baseline scenarios and estimate their likelihood. Following the global financial crisis, the approach had already been broadened by developing various scenarios and analyzing their probability so as to better understand the risks around numeric forecasts.

The size and simultaneity of the pandemic shock make for extreme Knightian uncertainty and ever-changing landscapes. We have had to become more agile in that regard. When the infection was still a suspicious pneumonia outbreak in China, we reached out to epidemiologists to learn how to combine their forecasting models with ours. New sources of big data were incorporated to understand consumer behavior changes where traditional statistics fell short. Even before the pandemic, we had started using military-style simulations to study escalating trade tensions. The approach has proved helpful as we attempt to quantify new risk.

Some time ago, I came across an article about how a US epidemiologist teamed up with a German reinsurance company to develop pandemic insurance product. They designed health models and early warning systems, estimated the economic impact for vulnerable industries, and determined how to distribute the risk. The policy became available in late 2018, but potential clients found it too expensive for such an unlikely event. When the catastrophe materialized in early 2020, it was too late to buy insurance.

This cautionary tale shows how much we need to improve risk assessment and management. Manufacturers, for example, must strike a balance in their supply chains between just-in-time (cheaper but inflexible) and just-in-case (more resilient but costlier) methods while factoring in trade, logistics, and sanitary conditions. Going back to the old ways seems reckless; erring too much on the resilience side might decrease the productivity of the economic engines.

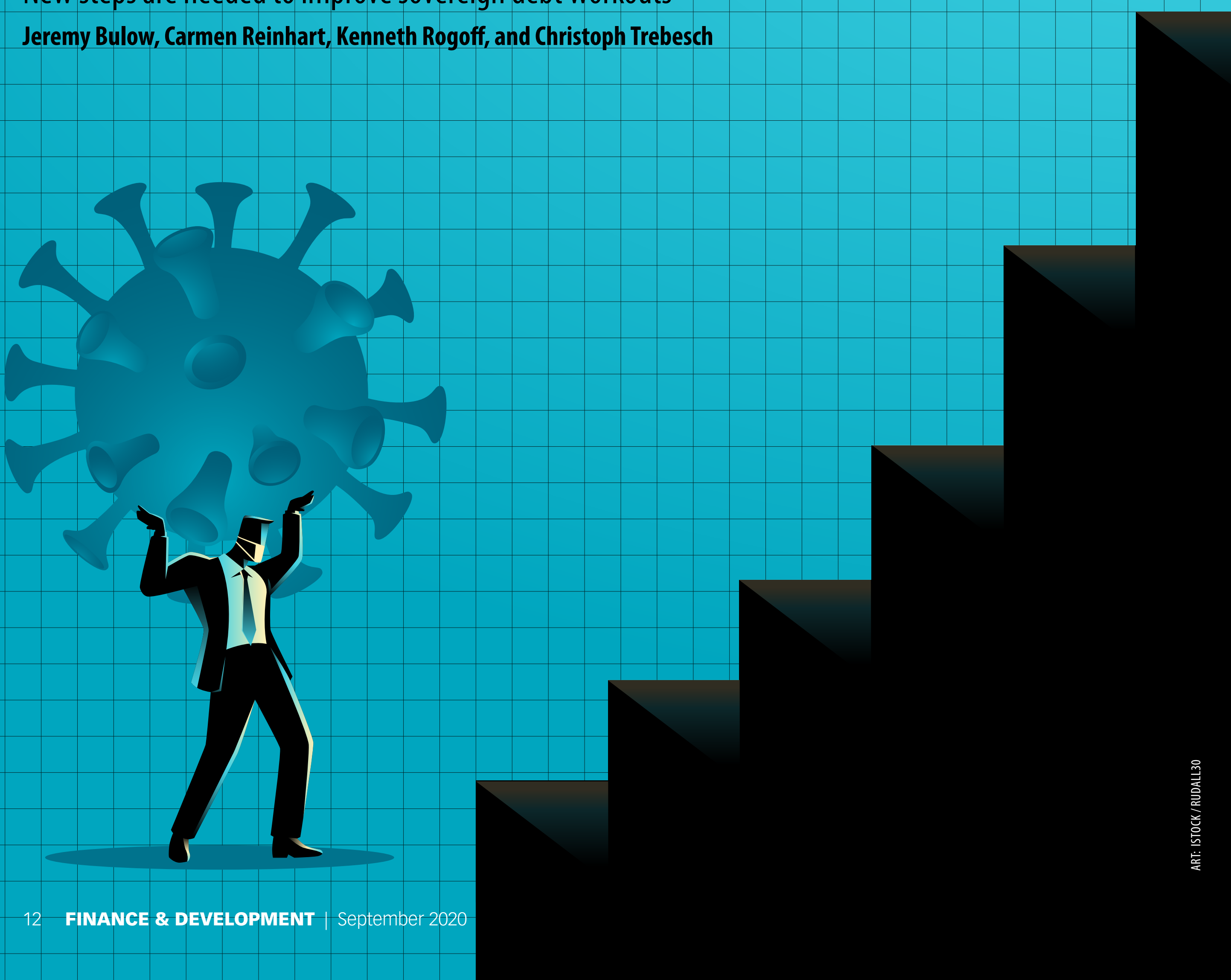
Finding this new equilibrium between risk and resilience when there is so much uncertainty is a challenge we will face far into the future. It will require effort, patience, and innovative thinking. Fundamentally we will need more global cooperation. Everyone will be safe only when each one is safe. Only by working together will we overcome the massive uncertainty and the economic turmoil caused by this mighty microscopic scourge. FD

GEOFFREY OKAMOTO is the first deputy managing director of the IMF.

THE DEBT PANDEMIC

New steps are needed to improve sovereign debt workouts

Jeremy Bulow, Carmen Reinhart, Kenneth Rogoff, and Christoph Trebesch



ART: ISTOCK / RUDALL30

The COVID-19 pandemic has greatly lengthened the list of developing and emerging market economies in debt distress. For some, a crisis is imminent. For many more, only exceptionally low global interest rates may be delaying a reckoning. Default rates are rising, and the need for debt restructuring is growing. Yet new challenges may hamper debt workouts unless governments and multilateral lenders provide better tools to navigate a wave of restructuring.

The IMF, the World Bank, and other multilaterals acted quickly to provide much-needed funding amid the pandemic as government revenues collapsed alongside economic activity, while private capital flows came to a sudden stop (see Chart 1). In addition to new loans from multilaterals, Group of Twenty (G20) creditors granted a debt moratorium to the world's poorest countries. They have encouraged private lenders to follow suit—albeit with little success.

So far, the pandemic shock has been limited to the poorest countries and has not morphed into a full-blown middle-income emerging market debt crisis. Thanks in part to favorable global liquidity conditions conferred by massive central bank support in advanced economies, private capital outflows have moderated and many middle-income countries have been able to continue to borrow in global capital markets. According to the IMF, emerging market governments issued $124 billion in hard currency debt during the first six months of 2020, with two-thirds of the borrowing coming in the second quarter.

Yet there are still reasons for concern about sustained emerging market access to capital markets. The riskiest period may still lie ahead. The first wave of the pandemic is not over. Experience from the 1918 influenza pandemic suggests the possibility of an even more severe second wave, especially if it takes until mid-2021 (or later) for an effective vaccine to become widely available. Even in the best-case scenario, international travel will face roadblocks, and uncertainty among consumers and businesses is likely to remain high. World poverty has risen sharply, and many people will not be returning to work when the crisis passes. The political ramifications of the crisis in advanced economies are also still unfolding. The backlash against globalization, already rising before COVID-19, may intensify.

Although many emerging market governments have succeeded in borrowing more in local currencies, businesses have continued to accumulate foreign currency debt. Under severe duress, it's likely that emerging market governments would yield to pressure to bail out their corporate national champions, just as the United States and Europe have done.

On top of the dramatic retreat in private funding, remittances from emerging market citizens working in other countries are expected to drop by more than 20 percent this year. At the same time, borrowing needs have skyrocketed, as emerging market and developing economies contend with the same budgetary stresses as advanced economies. Health systems must be strengthened and support must be provided for citizens whose lives are affected most acutely. Borrowing needs will only rise further as the economic damage mounts.

Rising budget pressures have been accompanied by a new wave of sovereign debt downgrades, surpassing peaks during prior crises (see Chart 2). They have persisted even as major advanced economy central banks have eased credit conditions. Central bank purchases of corporate bonds to provide support for local firms in emerging market and developing economies have also handicapped their debt ratings.

History shows that it is not unusual that countries can keep borrowing even when default risk is high. A review of 89 default episodes from 1827 to 2003 shows the typical experience to be a sharp rise in borrowing, both external and domestic, in the run-up to default (Reinhart and Rogoff 2009). Ideally this time will be different, but the record is not encouraging.

Amid massive and synchronous financing needs across a broad swath of countries, there is brewing in the background a growing need for debt restructurings in numbers not seen since the debt crisis of the 1980s. Official creditors should be prepared to act as needed.

Here they will be impeded by two trends that have been developing independently of the COVID-19 crisis. Call them "preexisting conditions."

First, private creditors are increasingly claiming outsize shares of repayment in debt restructurings. Although theoretically the official sector is a senior creditor to the private sector, much of the historical experience suggests otherwise.

During the 1980s emerging market debt crisis, private creditors were quite successful at pulling out funds as official creditors went in ever deeper (Bulow, Rogoff, and Bevilaqua 1992). Similar developments were at play during the European debt crisis, when investors did take some losses in Greece; a large portion of their funds had been pulled out, with repayments facilitated by large-scale loans by euro area governments (Zettelmeyer, Trebesch, and Gulati 2013). This pattern has recurred over two centuries of private and official lending: when private investors retrench, official lenders often step in (Horn, Reinhart, and Trebesch 2020, cited in Chart 1).

A recent analysis comparing losses (haircuts) taken by official and private creditors raises further doubt about the supposed seniority of official sector loans (Schlegl, Trebesch, and Wright 2019).

These outcomes should not be surprising. After all, governments have a history of protecting domestic creditors who lent abroad (think northern European banks in the case of Greece), and at the same time also care about stability and welfare in the borrowing country. Such altruism, in turn, weakens the official sector's bargaining position—especially vis-à-vis private creditors. Thus, official creditors may be left holding the bag for the bulk of the losses, even when they start with little of the outstanding debt, as in Greece.

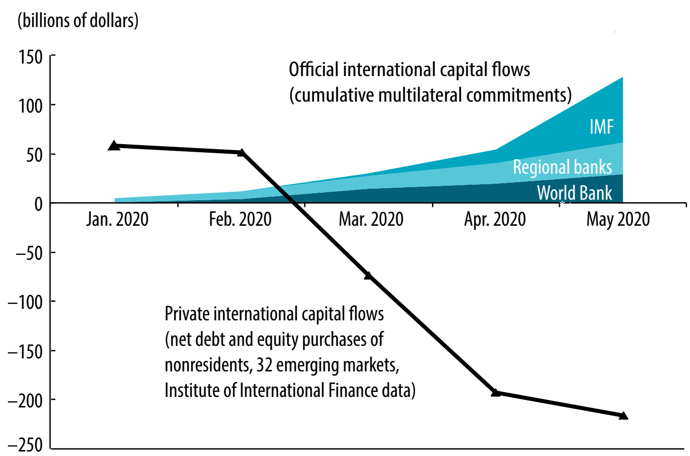
A further challenge comes from new **holdout and litigation tactics by private investors** to resist large debt write-downs and restructurings. As the number of restructurings has declined, an increasing share of them have involved lawsuits (see Chart 3, from Schumacher, Trebesch, and Enderlein 2018). While this may not completely explain the private sector's success in maximizing its share in debt restructuring, it is disconcerting.

The second preexisting condition is the length of time debt crises are dragging on. As former Citibank chairman William Rhodes famously said during the debt crisis of the 1980s: "It is easy to get into a debt moratorium. It's tough to get out."

Default episodes have taken, on average, seven years to resolve and typically involve multiple restructurings (see Chart 4). Unfortunately, debt restructurings can become a bargaining game in which the country debtor is often (rightly) willing to exchange higher future debt for lower payments now, fully intending to restructure debt again as necessary. Delay also helps both sides bargain for larger infusions from official creditors (Bulow and Rogoff 1989). And creditors may often be willing to repeatedly renew (or "evergreen") debt in order to temporarily make their balance sheets look better. The COVID-19 crisis could, in the worst case, lead to another "lost decade" in development, with long delays in debt resolution.

What can governments and multilateral lenders do to make sure new funding ends up benefiting the citizens of debtor countries affected by the pandemic rather than lining the pockets of creditors? And how can they make debt restructuring more expedient? Here are three practical ideas:

Chart 1
Multilateral lifeline
Quick funding by multilaterals helped offset a collapse of government revenues and the withdrawal of private capital.



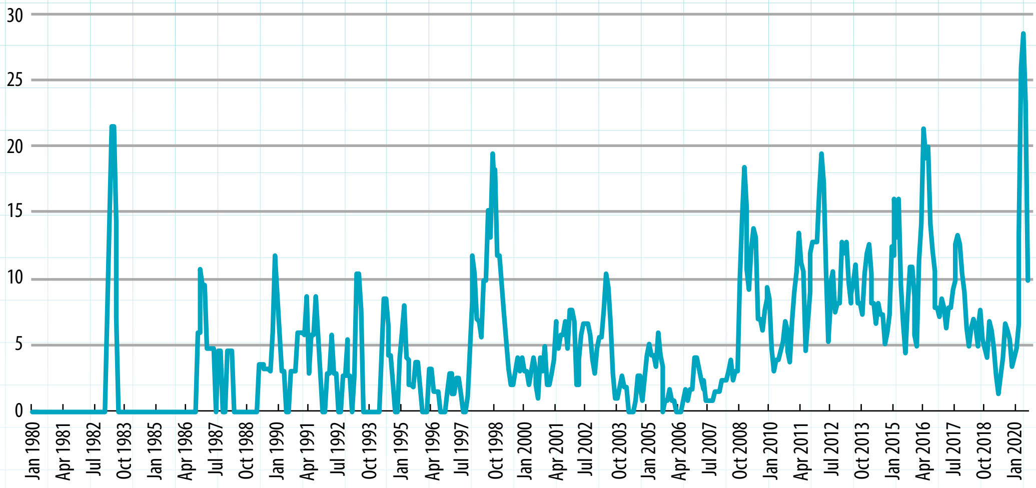
Source: Horn, Sebastian, Carmen M. Reinhart, and Christian Trebesch. 2020. "Coping with Disasters: Two Centuries of International Official Lending," NBER Working Paper 27343, National Bureau of Economic Research, Cambridge, MA.

Chart 2

Sovereign debt downgrades

A surge in rating downgrades in 2020 has surpassed peaks in previous crises.

(three-month sums of share of sovereign downgrades, 1980–2020)



Sources: Fitch; Moody's; Standard and Poor's; and Trading Economics.

- *More transparency on debt data and debt contracts*

It is of utmost importance that the World Bank, the IMF, and the G20 continue to insist on strengthening the transparency of debt statistics.

A new and significant complication in assessing the external indebtedness of many developing economies involves China, which has become the largest bilateral creditor in recent years. Unfortunately, China's lending is often shrouded in nondisclosure clauses, and a full picture is still elusive. More granular data on private sector creditor exposure may facilitate, in case of debt distress, more expedient creditor-debtor negotiations and allow both creditors and governments to identify which bonds are at risk of holdout or litigation tactics. An encompassing transparency initiative would include, for instance, full disclosure on sovereign bond ownership as well as credit default swaps that shift lender composition overnight. Knowing the players involved and the amounts owed would allow the international community and the citizenry of affected countries to better monitor how scarce resources in a time of crisis are being deployed. The accounts for the country itself must become more comprehensive, with improved data on domestic debt and debt owed by state-owned enterprises. Accounting for pension burdens is also increasingly important, as recent debt workouts in Detroit and Puerto Rico vividly illustrate.

- *Realistic economic forecasts that incorporate downside risks*

Realistic growth forecasts are critical to avoid underestimating a country's near-term financing needs and overestimating its capacity to service its debt commitments. IMF historian James Boughton notes that during much of the 1980s debt crisis, overoptimistic growth expectations persisted, especially in Latin America. Realistic forecasts, particularly recognizing the fragility of highly indebted countries, can speed resolution of any crisis. Earlier detection of insolvency and identification of cases in which large write-downs are necessary cannot guarantee a faster resolution but are a step in that direction.

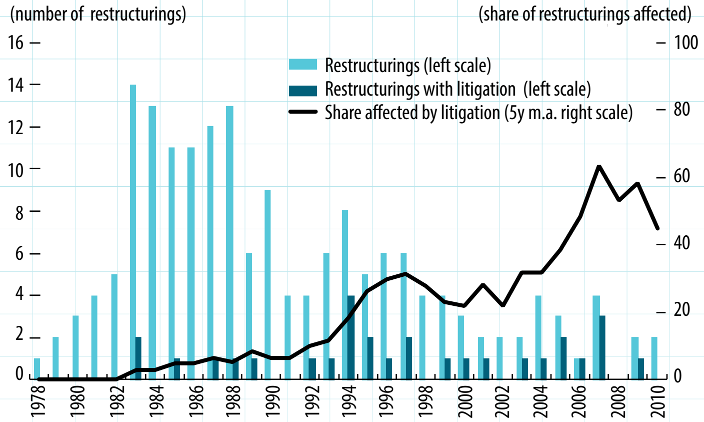
- *New legislation to support orderly sovereign debt restructurings*

Legal steps in jurisdictions that govern international bonds (importantly but not exclusively New York and London) or where payments

Chart 3

Legal risks

An increasing share of sovereign debt restructurings involve litigation.

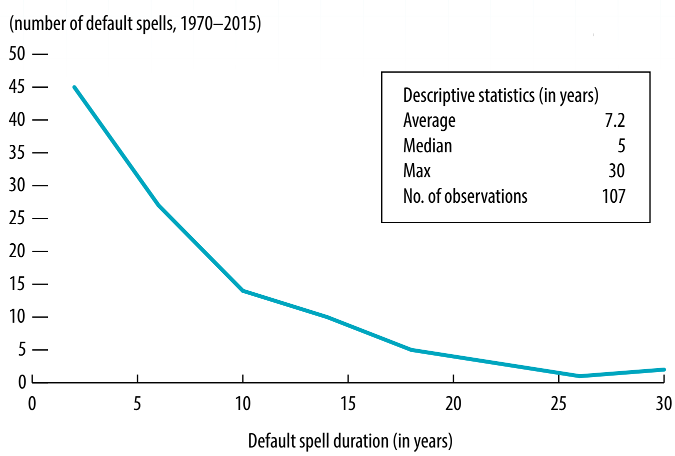


Source: Schumacher, Julian, Christoph Trebesch, and Henrik Enderlein. 2018. "Sovereign Defaults in Court." CEPR Discussion Paper 12777, Centre for Economic Policy Research, London.
Note: 5y m.a. = five-year monthly average.

Chart 4

Long sovereign workouts

Defaults, on average, last more than seven years.



Descriptive statistics (in years)	
Average	7.2
Median	5
Max	30
No. of observations	107

Source: Meyer, Josefin, Carmen M. Reinhart, Christoph Trebesch, and Clemens von Luckner, 2020. "Serial Sovereign Debt Restructurings and Delay: Evidence from the 1930 and 1980s Default Waves." Unpublished, Harvard University, Cambridge, MA.

are processed can contribute to more orderly restructuring by promoting a more level playing field between sovereign debtors and creditors. For instance, national legislation can cap the amounts that may be reclaimed from defaulted government bonds bought at a deep discount. In 2010, the United Kingdom enacted such a law for countries taking part in the Heavily Indebted Poor Countries (HIPC) debt relief initiative, while Belgium in 2015 passed the so-called Anti–Vulture Funds Law, which prevents litigious creditors from disrupting payments made via Euroclear. It would also energize legislation to facilitate a majority restructurings, which would allow a sovereign and a qualified majority of creditors to reach an agreement binding on all creditors subject to the restructurings.

The global pandemic is a once-in-a-century shock that merits a generous response from official and private creditors toward emerging market and developing economies, including preserving the global trading system and helping countries weather debt problems.

Support must be forthcoming, regardless of what progress can be made in better managing debt workouts. However, to make sure as much aid as possible gets through to debtor country citizens, it is essential to ensure inter-creditor equity and fair burden sharing, especially between official and private creditors. The more official aid and soft loans can go toward helping needy citizens around the globe—and the less such assistance ends up as debt repayments to uncompromising creditors—the better. FD

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Conquering the Great Divide

The pandemic has laid bare deep divisions, but it's not too late to change course

Joseph Stiglitz

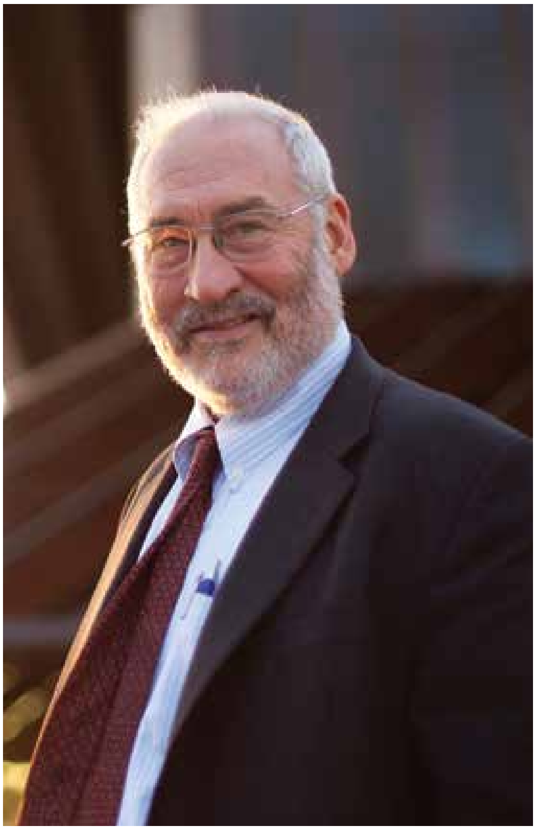

PHOTO: DANIEL BAUD AND SYDNEY OPERA HOUSE

COVID-19 HAS NOT BEEN an equal opportunity virus: it goes after people in poor health and those whose daily lives expose them to greater contact with others. And this means it goes disproportionately after the poor, especially in poor countries and in advanced economies like the United States where access to health care is not guaranteed. One of the reasons the United States has been afflicted with the highest number of cases and deaths (at least as this goes to press) is because it has among the poorest average health standards of major developed economies, exemplified by low life expectancy (lower now than it was even seven years ago) and the highest levels of health disparities.

Around the world, there are marked differences in how the pandemic has been managed, both in terms of how successful countries have been in maintaining the health of their citizens and the economy and in the magnitude of the inequalities on display. There are many reasons for these differences: the preexisting state of health care and health inequalities; a country's preparedness and the resiliency of the economy; the quality of public response, including reliance on science and expertise; citizens' trust in government guidance; and how citizens balanced their individual "freedoms" to do as they pleased with their respect for others, recognizing that their actions generated externalities. Researchers will spend years parsing the strength of various effects.

We need a comprehensive rewriting of the rules of the economy.

Still, two countries illustrate likely lessons that will emerge. If the United States represents one extreme, perhaps New Zealand represents the other. It's a country in which competent government relied on science and expertise to make decisions, a country where there is a high level of social solidarity—citizens recognize that their behavior affects others—and trust, including trust in government. New Zealand has managed to bring the disease under control and is working to redeploy some underused resources to build the kind of economy that should mark the post-pandemic world: one that is greener and more knowledge-based, with even greater equality, trust, and solidarity. There is a natural dynamic at work. These positive attributes can build on each other. Likewise, there can be adverse, destructive attributes that weigh down a society, leading to less inclusiveness and more polarization.

Unfortunately, as bad as inequality had been before the pandemic, and as forcefully as the pandemic has exposed the inequalities in our society, the post-pandemic world could experience even greater inequalities unless governments do something. The reason is simple: COVID-19 won't go away quickly. And the fear of another pandemic will linger. Now it is more likely that both the private and the public sectors will take the risks to heart. And that means certain activities, certain goods and services, and certain production processes will be viewed as riskier and costlier. While robots do get viruses, they are more easily managed. So it is likely that robots will, where possible, at least at the margin, replace humans. "Zooming" will, at least at the margin, replace airline travel. The pandemic broadens the threat from automation to low-skilled, person-to-person services workers that the literature so far has seen as less affected—for example, in education and health. All of this will mean that the demand for certain types of labor will decrease. This shift will almost surely increase inequality—accelerating, in some ways, trends already in place.

New economy, new rules

The easy answer is to accelerate upskilling and training in tandem with the changing job market. But there are good reasons to believe that these steps alone will not suffice. There will need to be a comprehensive program to reduce income inequality. The program needs to first recognize that the competitive equilibrium model (whereby producers maximize profit, consumers maximize utility, and prices are determined in competitive markets which equate demand and supply) that has dominated economists' thinking for more than a century does not provide a good picture of the economy today, especially when it comes to understanding the growth of inequality, or even innovation-driven growth. We have an economy rife with market power and exploitation. The rules of the game matter. Weakening constraints on corporate power; minimizing the bargaining power of workers; and eroding rules governing the exploitation of consumers, borrowers, students, and workers have all worked together to create a poorer-performing economy marked by greater rent seeking and greater inequality.

We need a comprehensive rewriting of the rules of the economy. For instance, we need monetary policies that focus more on ensuring full employment of all groups and not just on inflation; bankruptcy laws that are better balanced, replacing those that became too creditor-friendly and provided too little accountability for bankers who engaged in predatory lending; and corporate governance laws that recognize the importance of all stakeholders, not just shareholders. The rules governing globalization must do more than just serve corporate interests; workers and the environment have to be protected. Labor legislation needs to do a better job of protecting workers and providing greater scope for collective action.

But all of this will not, in the short run at least, create the equality and solidarity that we need. We will need to improve not just the market distribution of income but how we redistribute as well. Perversely, some countries with the highest degree of market income inequalities, like the United States, actually have regressive tax systems where top earners pay a smaller share of their income in taxes than workers lower down the ladder.

Over the past decade, the IMF has recognized the importance of equality in promoting good economic performance (including growth and stability). Markets on their own pay no attention to the broader impacts that arise from decentralized decisions leading to excessive borrowing in foreign-denominated currencies or excessive inequality. During the reign of neoliberalism, no attention was paid to how policies (such as capital and financial market liberalization) contributed to greater volatility and inequality, nor to how other policy changes—such as the shift from defined-benefit to defined-contribution retirement (or pension) plans, or from public to private pensions—led to greater individual insecurity, as well as to greater macroeconomic volatility, by weakening the economy's automatic stabilizers.

The rules are now shaping many aspects of economies' responses to COVID-19. In some countries, the rules encouraged shortsightedness and inequalities, two features of societies that have not managed COVID-19 well. Those countries were inadequately prepared for the pandemic; they built global supply chains that were insufficiently resilient. When COVID-19 hit, for instance, American

While the pandemic has revealed the enormous cleavages across the countries of the world, the pandemic itself is likely to increase disparities.

firms couldn't even provide enough supplies of simple things like masks and gloves, let alone more complicated products like tests and ventilators.

International dimensions

COVID-19 has exposed and exacerbated inequalities between countries just as it has within countries. The least developed economies have poorer health conditions, health systems that are less prepared to deal with the pandemic, and people living in conditions that make them more vulnerable to contagion, and they simply do not have the resources that advanced economies have to respond to the economic aftermath.

The pandemic won't be controlled until it is controlled everywhere, and the economic downturn won't be tamed until there is a robust global recovery. That's why it's a matter of self-interest—as well as a humanitarian concern—for the developed economies to provide the assistance the developing economies and emerging markets need. Without it, the global pandemic will persist longer than it otherwise would, global inequalities will grow, and there will be global divergence.

While the Group of Twenty announced that it would use every instrument available to provide this kind of help, the aid so far has been insufficient. In particular, one instrument used in 2009 and easily available has not been employed: an issuance of $500 billion in Special Drawing Rights (SDRs). So far, it has not been possible to overcome the lack of enthusiasm of the United States or India. The provision of SDRs would be of enormous assistance to developing economies and emerging markets—with no or little cost to the taxpayers of developed economies. It would be even better if those economies contributed their SDRs to a trust fund to be used by developing economies to meet the exigencies of the pandemic.

So too, the rules of the game affect not just economic performance and inequalities within countries, but also between countries, and in this arena the rules and norms governing globalization are central. Some countries seem committed to "vaccine nationalism." Others, like Costa Rica, are doing what they can to ensure that all knowledge relevant to addressing COVID-19 is used for the entire world, in a manner analogous to how the flu vaccine is updated every year.

The pandemic is likely to bring about a rash of debt crises. Low interest rates combined with financial markets in advanced economies pushing loans and profligate borrowing in emerging market and developing economies have left several countries with more debt than they can service, given the magnitude of the pandemic-induced downturn. International creditors, especially private creditors, should know by now that you can't squeeze water out of stone. There will be a debt restructuring. The only question is whether it will be orderly or disorderly.

While the pandemic has revealed the enormous cleavages across the countries of the world, the pandemic itself is likely to increase disparities, leaving long-lasting scars, unless there is a greater demonstration of global and national solidarity. International institutions, like the IMF, have provided global leadership, acting in exemplary ways. In some countries too there has been leadership that has enabled them to address the pandemic and its economic aftermath—including the inequalities that otherwise would have arisen. But as dramatic as the successes have been in some places, just as dramatic are the failures elsewhere. And those governments that have failed internally have hampered the necessary global response. As evidence of the disparate outcomes becomes clear, hopefully there will be a change of course. The pandemic is likely to be with us for a while and its economic aftermath for a much longer time. It's still not too late for such a change of course. FD

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Cultivating GLOBAL FINANCIAL COOPERATION

The current crisis highlights the urgency of strengthening the global financial architecture

Barry Eichengreen

The COVID-19 pandemic is the mother of all stress tests for the global economy, and not least for emerging markets and developing economies. Early on, there were hopes that the virus might bypass low-income countries, which have fewer air-transportation links to the rest of the world, or that it could be contained in countries with past epidemic experience—in sub-Saharan Africa, for example. Such hopes were disappointed. We now know that the virus threatens all parts of the world. Moreover, even where countries have been able to avert a full-blown health crisis, the financial effects have been severe.

That financial impact preceded COVID-19's physical arrival in the developing world. Between February and April, more than $100 billion in financial capital flowed out of emerging and frontier markets, five times as much as in the first three months of the global financial crisis. The World Bank forecast that remittances would fall by an additional $100 billion in 2020, four times as much as during that earlier crisis. Global trade was forecast to fall even faster than in 2009. Commodity prices collapsed in response to the global recession, while emerging market and developing economy currencies weakened against the dollar.

This was a shock of unprecedented proportions. Governments responded with emergency spending packages in support of households and firms. Emerging market central banks cut interest rates and in some cases undertook purchases of securities. As a result, the negative impact on economies and financial systems was somewhat less than anticipated initially.

For emerging markets, this policy response was unprecedented. It was the opposite of the actions they were forced to take in earlier crises. The contrast was indicative of progress made in building fiscal space and anti-inflation credibility. One indication lies in the actions of emerging market central banks that adopted a formal inflation-targeting framework as a credibility-enhancing device. Through the first five months of 2020, those central banks were able to cut interest rates by 40 to 50 basis points more than their non-inflation-targeting counterparts.

This is not to deny the existence of financial stress. But the tidal wave of debt defaults, currency crashes, and financial system collapses some had predicted has not come to pass. At least not yet.

Dollar dominance

Having averted the worst does not mean that emerging market and developing economies averted the bad. The financial repercussions of COVID-19 pointed up remaining flaws in the global financial architecture and underscored the need to correct them.

To start, the pandemic is a reminder of how much the global economy—and emerging market economies in particular—relies on the dollar for international liquidity. The international interbank market, in which banks borrow and lend to one another, runs heavily on dollars. The dollar is involved in 85 percent of foreign exchange transactions worldwide. It is far and away the most important vehicle for trade invoicing and settlement. Bonds marketed and sold to foreign investors are disproportionately denominated in dollars.

Countries can shield themselves from sudden liquidity shortages, when banks refuse to lend, by holding dollar reserves. There has been significant movement in this direction by central banks and governments in recent decades, which is one reason there was not a more severe pandemic-induced dollar shortage and greater financial distress.

But a more important explanation for the absence of disruptive dollar scarcity is the extraordinary action of the US Federal Reserve (Fed), which leapt into the breach with dollar swaps and Treasury bond repurchase facilities for foreign central banks. The Fed purchased a wide range of fixed-income assets, flooding financial markets with liquidity and bringing credit spreads back down to precrisis levels. Investors seeking higher-yielding investments had nowhere to look but emerging markets, whose debt was one of the few fixed-income assets the Fed did not buy. This explains much of why capital flowed back to emerging markets after the initial period of strain.

While the Fed's forceful action prevented global financial markets from seizing up, it also pointed to a fly in the international financial ointment. The Fed provided swaps only to a selection of countries,

ART: DAVIDE BONAZZI

and the selection criteria were not transparent. Nor is it obvious that there will be an equally foresightful Federal Reserve Board to do the same in a future crisis.

This has led to suggestions that the Fed, and perhaps other advanced economy central banks as well, should delegate the decision to extend swaps to an impartial arbiter, such as the IMF. Since central banks are not members of the IMF, this would be a decision for governments—which is a problem. Governments, especially the governments of countries that issue key international currencies, are not inclined to cede control of their central banks' balance sheets to the international community.

IMF and World Bank roles

This mention of the IMF points to another source of dollars for emerging market and developing economies: IMF lending facilities. The IMF moved quickly in response to the pandemic to create the Short-term Liquidity Line, a new facility for disbursing liquidity assistance, while enhancing access to existing facilities, including some that allow for lending without a full-fledged program. In the first half of 2020, it received more than 100 calls for emergency funding.

The IMF's overall lending capacity is limited to $1 trillion. This sum may not be enough to deal with the full impact of the pandemic and with whatever comes next. Shrinkage of IMF resources was averted by renegotiation of the Fund's multilateral and bilateral borrowing arrangements, including the New Arrangements to Borrow. However, efforts to augment those resources through an increase in IMF quotas have not produced results. Further, there has not been the requisite agreement of a supermajority of countries on a new allocation of Special Drawing Rights (SDRs), despite widespread calls from the official and scholarly communities. Reforming IMF governance in the context of the General Review of Quotas and enhancing the international role of the SDR are long-standing issues. The COVID-19 crisis is a reminder that these efforts are incomplete, and that their incompleteness weakens the global financial safety net.

The IMF's sister institution, the World Bank, could point to pandemic bonds as its contribution to weathering the crisis. In 2017, in response to the outbreak of Ebola in West Africa, the World Bank, with financial support from a set of advanced economy donor nations, underwrote bonds to be placed with private investors that paid out in a pandemic. Ex ante, this instrument seemed ideally suited to providing poor countries with insurance against health-related shocks.

It didn't turn out that way. The bonds now look to have been overengineered; their documentation was so complex that neither investors nor governments knew what they were getting. The stringent conditions triggering payments were satisfied only 132 days into the outbreak and after more than 2 million cases were identified worldwide. One of the variables triggering payouts was the number of cases identified and reported at the national level, and poor countries were the least able to identify and report cases. Unlike catastrophe bonds, which pay out in response to a hurricane or earthquake affecting one or a handful of countries, pandemic bonds triggered many simultaneous payouts, because the COVID-19 pandemic was global. Investors in these bonds therefore saw their stakes wiped out.

The distaste for this structure for both developing economies and investors became apparent when the World Bank abandoned plans for another pandemic-related issue this year. The notion of some form of financial insurance for pandemics is sound conceptually, but a satisfactory structure has yet to be found.

Dealing with debt

Last, there is the challenge of servicing debt when commodity prices and global trade have collapsed. Acknowledging these realities, in April 2020 the IMF provided debt service relief for an initial six months to 29 low-income countries that were previous loan recipients. In addition, Managing Director Kristalina Georgieva called on governments with bilateral loans to low-income countries and on private sector creditors to suspend repayments. Following a meeting of finance ministers and central bank governors, the Group of Twenty (G20) issued a declaration, the "G20 Action Plan," voicing support for these ideas.

These initiatives faced collective action problems, however. For official bilateral creditors, it made little sense to suspend payments if other governments failed to do likewise. In this case, the debtor would receive only limited relief, and the governments that agreed would end up footing the bill.

Since the 1950s, the official community has addressed this issue through the Paris Club, a group of creditor countries originally made up of Group of Seven governments, whose chair is a French Treasury official. Unfortunately, China, now the source of more official bilateral poor country debt covered by the G20 initiative than all other creditor countries combined, is not a member. China has agreed to match the Paris Club's debt relief terms, but it is not clear whether this commitment extends to loans by state banks and state-owned companies. It is not even clear how much poor-country governments owe to the Chinese official sector overall. All this would have been easier to sort out had China been a full-fledged member of the Paris Club, but it is not—yet another failure to update the global financial architecture to match the realities of the 21st century.

In the case of private debt, the task of setting out terms and organizing negotiations was outsourced to the Institute of International Finance (IIF), the association of institutional investors. This response had something of a fox-in-the-henhouse quality. The IIF cautioned emerging markets that seeking to restructure their debt could jeopardize market access. It warned that institutional investors were responsible to their clients, not to governments or the global community. Early efforts at renegotiating Argentine government bonds got hung up over conflicting contractual terms governing different bonds, reflecting the absence of a single standard for bond covenants. Progress was slowed by obstacles thrown in the way by holdout creditors.

There was no sense that the existing ad hoc machinery had the capacity to deal with a flood of cases. The absence of an international facility or even a standard procedure to deal with a wave of restructurings was glaring.

The agenda

What, then, have we learned about the financial architecture from the COVID-19 crisis? We have been reminded that resilience starts with institution and resource building at home. Governments possessing fiscal space have been able to put it to use. Where inflation expectations are well anchored, central banks have been able to support financial markets and the economy. A surprising number of emerging markets—surprising by the standards of past crises—have been able to implement supportive policies. This capacity reflects their success at building more robust monetary, fiscal, and financial institutions.

Experience at the international level is less heartening. Cross-border financial transactions remain dollar-based. There is reason to think that this will change, but little reason to think that it will change anytime soon. While the demand for dollars is global, the supply remains national: it depends on the policies of the Federal Reserve. There are potential alternative sources of dollars—not least the IMF, which could provide greater access through its existing programs and lending facilities if it had more resources. A new allocation of SDRs is another possibility. Unfortunately, there is as yet no consensus on how to proceed.

We have been reminded that resilience starts with institution and resource building at home.

Although the performance of pandemic bonds has been disappointing, the idea of using financial instruments and markets to insure against these risks is sound. Streamlining the design of such instruments and increasing the subsidy element provided by donors could make them more attractive to both governments and investors. The question is whether this would be enough.

Finally, there is the need to strengthen arrangements for dealing with debt. The structure of the Paris Club should be updated to match the realities of the 21st century. Official institutions should take a larger role in negotiations over restructuring private debt. They can set standards for such negotiations. They can encourage regulatory agencies to mandate institutional investors' adherence to those standards. Governments and regulators can require provisions in loan contracts (so-called single-limb aggregation clauses) that encourage rapid restructuring when a pandemic or other global crisis hits. They can prohibit trading of bonds that lack these provisions. This strategy just might work. If it doesn't, then calls for a more heavy-handed approach, involving some kind of international bankruptcy court for sovereigns, will be back. FD

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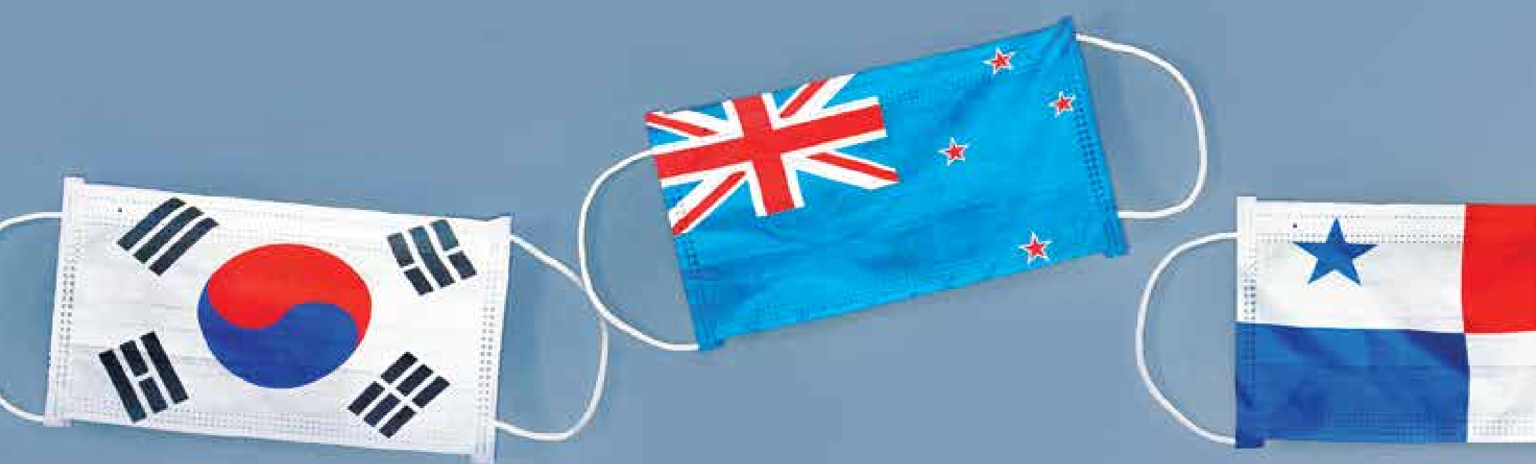

Overhauling HEALTH SYSTEMS

As countries' first line of defense against a crisis, health systems need to be strengthened

Genevie Fernandes

Millions of infections, hundreds of thousands of deaths, and widespread lockdowns. In just six months, the COVID-19 pandemic has changed our world dramatically. As we adapt, we are learning about the virus—especially the possibility that transient immunity could expose people to waves of the virus—and about long-term effects on the lungs, heart, kidneys, and brain among those who recover.

Despite these unknowns, COVID-19 has exposed several well-known and deeply persisting inequalities. People with comorbidities such as cardiovascular and respiratory disease and diabetes are at a higher risk of complications from COVID-19, and these risk factors disproportionately affect those who are socioeconomically disadvantaged.

Women bear the brunt of caring for the sick and children, are at high risk of domestic violence during quarantines and lockdowns, and are affected by disruptions in access to sexual and reproductive health services, as well as by job losses in the informal sector.

This pandemic has also laid bare inequality between rich and poor countries. For the most part, rich countries have better-funded health systems and can afford to temporarily freeze their economies and inject billions of dollars into economic stimulus packages. Yet most poor countries have underfunded and inadequately staffed health systems, weak water and sanitation systems, large populations, mounting debt, colossal unemployment, and limited fiscal capacity for economic relief.

To make matters worse, another pandemic can strike at any time, even as we struggle with the current crisis. Apart from looming global pandemics, there is also the threat of extreme weather events and natural disasters, as well as recurring economic crises, all of which have devastating effects on communities and health systems.

During all of these natural and human-caused crises, it is a country's health system that is the first line of defense, and if the system is not resilient, it will be overwhelmed and collapse, exacerbating the health impact and adding to inequality. Countries such as Germany, New Zealand, South Korea, Taiwan Province of China, and Vietnam—all of which have managed to control COVID-19 better than others—have demonstrated resilience in their health systems.

Resilient health systems

Harvard public health professor Margaret Kruk defines health system resilience as "the capacity of health actors, institutions, and populations to prepare for and effectively respond to crises; maintain core functions when a crisis hits; and, informed

by lessons learned during the crisis, reorganize if conditions require it" (Kruk and others 2015). In the face of a crisis, a resilient health system can cope with the shock, continue to provide services, and return to normal functioning once the crisis settles, thereby delivering positive health outcomes in both good and bad times.

However, a health system does not function in a silo; it operates within a socioeconomic and political context, clearly reflected by the direct and indirect health effects of pandemics and other shocks on vulnerable populations. A resilient post–COVID-19 health system must also address these vulnerabilities and inequalities and sustainably respond to a range of crises in the future.

Based on the growing literature and country experiences of Ebola and COVID-19, we can outline five broad features of a resilient national health system.

First, it must be vigilant. Countries must strengthen their existing disease surveillance systems to routinely collect and analyze information across public and private health care in order to prevent or quell outbreaks. Several simple and effective disease surveillance systems have been developed and adapted in low-resource settings. For instance, in the early 1980s, virologist T. Jacob John established a novel system in south India using a standardized set of symptoms (which would today be called "syndromic surveillance") to detect and limit disease outbreaks (John and others 1998). This national surveillance system must also incrementally build its capacity to routinely monitor such events in neighboring countries and regions and worldwide, which requires capacity building as well as diplomacy.

Second, it must be responsive. Early response is a defining feature of the health systems of Germany, New Zealand, South Korea, and Taiwan Province of China, as well as in states such as Kerala in India—all of which have managed to control COVID-19 effectively. Responsiveness calls for preparedness, which can take years of planning and investment, long before a pandemic hits. Singapore and Taiwan Province of China responded to the deadly 2003 SARS outbreak with elaborate response plans and annual drills in hospitals, while in South Korea, following the 2015 MERS outbreak, the government invested heavily in standard operating protocols and incentivized its biomedical companies to research and develop rapid diagnostic tools. Countries may have emergency preparedness plans and protocols, but these need to be aligned with dedicated individuals and teams with decision-making autonomy to respond swiftly, as well as with investment to strengthen the health infrastructure and a workforce and procedures for emergency procurement and replenishment in the event of shortages.

Third, it must be flexible and adaptable. Hospital staff in several countries have been redeployed to COVID-19 wards. In January and February, nearly 3,000 health workers in Cambodia were trained and deployed to implement rapid detection and contact tracing. In China, Fangcang shelter hospitals were rapidly set up in February 2020—large-scale venues such as stadiums and exhibition centers were converted to temporary hospitals to isolate and care for people with mild to moderate COVID-19 symptoms and reduce the burden on hospitals. Across the world, hospitals have shifted some of their health services to virtual forums such as telephone and video consultations. Such practices show the potential of flexible use of existing resources—whether the workforce or health care facilities—and adaptation to a rapidly changing situation.

Fourth, it is only as resilient as the communities it serves. District public health teams must engage and involve local leaders and community volunteers in structured roles during emergencies; extension of roles during normal times could enhance participatory governance. In Thailand, more than 1 million village health volunteers have monitored communities for COVID-19. In Kerala more the 300,000 youth volunteers were trained and deployed by the government to deliver social services to local communities during the lockdown and support quarantined households (WHO 2020). Local leaders and volunteers are trusted in their communities, and when district health teams partner with such stakeholders it can ensure two-way communication and persuade communities to adopt recommended behavior.

Fifth, and most important, resilient health systems must be equitable. People in both rich and poor countries without effective health coverage have struggled to get tested and seek timely treatment for COVID-19 and other health emergencies. Universal health coverage, regardless of socioeconomic status, geographic location, gender, age, or preexisting conditions, is needed now more than ever (WHO 2010). Countries must invest in universal health coverage, particularly by expanding health insurance coverage and strengthening primary health care services, to ensure early detection and response to COVID-19 and other infectious diseases. This will prevent

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secondary and tertiary health facilities from being overburdened and disrupting the delivery of other essential health services. Most important, universal health coverage will keep families from falling into poverty during such public health emergencies.

Govenments will also have to strengthen three cross-cutting areas to ensure health system resilience. *First, a multisectoral government approach* is urgently needed, whereby mechanisms are built and activated for health policymakers to work closely with their counterparts in other relevant public sectors, including education, social welfare, finance and trade, and the environment.

Partnership with the private health sector is the second cross-cutting task. In several low- and middle-income countries, private facilities are the first health care contact point and deliver the bulk of services. This sector cannot be ignored and must be sustainably engaged under public stewardship.

Third, clear, consistent, transparent, and timely communication is needed through various channels, including credible voices for both internal (public sector departments) and external (public) audiences. These communication channels must include and incorporate feedback. Good communication will build public trust in government and encourage adherence to the behavior needed to disrupt transmission and control outbreaks.

Making it happen

Financing is critical to achieving the above features in cross-cutting areas of health system resilience. Governments must increase domestic financial resources for the public health system through mechanisms such as budget reallocation, tax reform and management, and luxury and sin taxes as well as collaboration with the private and philanthropic sectors. In 2013, within one year of introducing sin taxes on alcohol and tobacco, the Philippines generated $1.2 billion, which made it possible to enroll an additional 45 million citizens in universal health coverage.

Governments can also make a substantial difference by reducing inefficiencies in their health spending. This can be achieved through strategies such as reforming incentive and payment structures to address overuse of services, controlling excessive markups on medicines and promoting generics, pooled medicine purchases, and addressing corruption.

Poorer countries suffering from economic shocks will have a hard time raising money for domestic health financing, which is why we urgently need a coordinated global response. Richer countries, donors, and multilateral agencies must step up development assistance. Institutions such as the World Bank and the IMF have taken initial steps with increased emergency financing, debt relief, and support for debt service suspension. Future support beyond unconditional emergency financing should support broad health system strengthening and resilience and protect social spending and safety nets for the most vulnerable.

Governance holds the key to an effective response for resilient health systems in the face of COVID-19 and future public health emergencies. Effective governance calls for committed leadership across political parties and structures that reflect accountability and transparency, as well as mechanisms for decision-making autonomy and incentives for public health officials across all levels of government.

Worldwide commitment to cooperation on COVID-19 vaccines and therapies starts with collective support for the World Health Organization (WHO). Despite its shortcomings, no other international agency has the technical, normative, and convening capacity to bring countries together at the same table for ensuring equitable access to global public goods for public health emergencies. With the recent US announcement to withdraw from the WHO and threats to overall funding, international cooperation, as demonstrated at the World Health Assembly in May 2020, is more relevant than ever (Sridhar and King 2020).

As former Liberian President Ellen Johnson Sirleaf said, "Coronavirus anywhere is a threat to people everywhere." No government can completely resolve the COVID-19 crisis alone; it takes global cooperation and solidarity. FD

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INVESTING IN A GREEN RECOVERY

The pandemic is only a prelude to a looming climate crisis

Ulrich Volz

This crisis is a rupture. A moment of profound turmoil and disruption. Even more than the 2008–09 global financial crisis—which was most directly felt in the United States and in European countries—this pandemic is affecting almost all of humanity. In countries around the world, rich and poor, the COVID-19 crisis has exposed the vulnerabilities of our health and social systems and the fragility of our economies. It has also highlighted in dramatic ways the need for better disaster preparation. Increasing resilience needs to be one of the main guiding principles when rebuilding our economies and societies after the crisis. We need to ensure we are better prepared to withstand future pandemics but also the other major looming threat to humanity—climate change.

Despite long-standing and plentiful warnings from scientists about the risks of a pandemic, the world was woefully unprepared for this crisis. The same is unfortunately true for climate change. As was the case with pandemics, scientists have long been sounding the alarm about a climate crisis. There can be no doubt that it is here and accelerating. Recent wildfires in Australia and California, the thaw of permafrost in the Arctic, and the increase in the number and intensity of storms, floods, droughts, and other climate-related natural disasters all point to a problem that has already arrived. The earth will soon exceed climate tipping points, presenting a real threat of abrupt and irreversible climate changes.

This pandemic strikes us at a time when—according to the Intergovernmental Panel on Climate Change—we have about a decade left to achieve a low-carbon transition and bring the world economy to a trajectory limiting global warming to 1.5°C above preindustrial levels. The next few years are our last chance to avoid catastrophic global warming. It is imperative that the various crisis response measures amount to a transformative policy response. Short-term crisis responses aimed at protecting jobs

A bush fire rages outside Tuncurry, Australia.

and boosting recovery need to be coupled with longer-term, strategic goals of mitigating climate change and shoring up climate change adaptation and resilience. As much as possible, we need to use economic stimulus and recovery measures to strengthen the resilience of our economies and engineer a just transition. As IMF Managing Director Kristalina Georgieva has said, this is the time to "revive or lose" the Paris Agreement.

Enabling sustainable investment

There is no trade-off between choosing a sustainable recovery and economic progress. Many green technologies have matured, and low-carbon energy is, in most cases, cheaper now than fossil-fuel-based energy. Recent evidence suggests that well-designed green projects can generate more employment and deliver higher short-term returns per dollar spent, compared with conventional fiscal stimulus. Moreover, today's investment in climate change mitigation and adaptation generates substantial long-term returns and cost savings, whereas the cost of inaction or late action on climate change is high. Steps taken now to mitigate climate change represent an investment that will generate dividends into the future, while continued inaction will give way to disastrous global warming and much greater costs down the line. Likewise, failing to invest in making our economies and societies more climate resilient undermines our future growth and well-being. The Global Commission on Adaptation calculated that every dollar invested in building climate resilience could result in between $2 and $10 in net economic benefits.

There is, however, a major problem: Many countries lack the means to finance a recovery and undertake critically needed investments in climate adaptation and mitigation. The COVID-19 crisis has dramatically worsened public finances, which in many countries were already shaky in the run-up to the current crisis. The IMF projects global public debt to increase to more than 100

PHOTO: ISTOCK/ JOHNCARNEMOLLA

THE COVID-19 PANDEMIC HAS SHOWN HOW QUICKLY A NATURAL DISASTER CAN BRING OUR ECONOMIES TO COLLAPSE.

percent of GDP this year, up 19 percentage points year over year. Going forward, many countries will require debt relief to respond effectively to the crisis and undertake meaningful investment to climate-proof their economies. For now, the international financial architecture still lacks an adequate system for addressing situations where sovereign debt becomes unsustainable. Ways need to be found to systematically deal with the coming debt crisis in developing economies.

Moreover, in the face of stretched public finances, it is crucial to align all public expenditures as well as the tax system with the climate goals. Importantly, this should include the phasing out of all fossil fuel subsidies. According to IMF estimates, global fossil fuel subsidies amounted to $5.2 trillion, or 6.5 percent of world GDP, in 2017. Putting an end to these would not only deliver significant public savings, but also lower emissions. Furthermore, as shown in the IMF's October 2019 *Fiscal Monitor*, meaningful carbon taxes—the IMF suggests $75 per ton of CO_2—are a powerful tool to reduce carbon emissions and generate additional environmental benefits, including lower mortality from air pollution. Carbon tax revenues could be redistributed to support low-income households or communities that are hit particularly hard by the transition to a low-carbon economy or the physical effects of climate change. The currently relatively low level of oil prices would provide a good opportunity to levy or increase carbon taxes at a reduced political cost.

Aligning finance

Beyond fiscal policy, it will be imperative to align finance flows with a pathway toward low greenhouse gas emissions and climate-resilient development, as stipulated in Article 2.1c of the Paris Agreement. To this end, monetary and financial authorities need to fully integrate climate risks into their prudential and monetary frameworks. Over the past couple of years, a growing number of central banks and financial supervisors have recognized that climate change represents a material risk for individual financial institutions and systemic financial stability. The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) was established in December 2017 by eight central banks and supervisors and has grown to a membership of 66 central banks and supervisors. In a number of reports, the NGFS highlighted the macroeconomic and financial stability impacts of climate change. It is important that monetary and financial authorities move ahead swiftly in implementing a comprehensive framework for addressing climate-related risks. Such a framework should make the disclosure of climate and other sustainability risks mandatory across the financial sector to help with better risk analysis; require financial institutions to conduct regular climate stress testing that considers multiple transition scenarios; and integrate climate-related financial risks into prudential supervision.

Importantly, central banks and supervisors should also align their current crisis responses to avoid locking in a high-carbon recovery while fulfilling their mandates for financial stability (Dikau, Robins, and Volz 2020). Liquidity-enhancing stimulus measures that are not Paris-aligned can contribute significantly to the buildup of climate-related risks in portfolios of financial institutions and overall in the financial system. Moreover, easing countercyclical and other prudential instruments without considering climate risk can further increase these risks. The implementation of prudential instruments that account for climate risks should therefore not be delayed, but rather strengthened to minimize the potential buildup of additional risks in portfolios.

Supporting vulnerable countries

International financial institutions, many of which have become observers of the NGFS, have a special role to play in helping member countries align their financial systems with sustainability goals. That includes supporting capacity building and leading by example in developing best practices for integrating climate risks in all aspects of their own operations. For multilateral development banks, this also means aligning their own portfolios with the Paris Agreement and completely phasing out any high-carbon lending and investments. In the

current crisis situation, multilateral development banks as well as national development banks can also assume an important role by providing countercyclical lending that at the same time supports economic activity and employment in the short term, while contributing to the transition to a more sustainable low-carbon economy.

International financial institutions should also ramp up support to climate-vulnerable countries. The sad truth is that the impact of climate change is the greatest in countries that contributed the least to global warming caused by human industry and agriculture. A rapid scaling up of investment in climate resilience is a matter of life and death for these countries. Unfortunately, climate-vulnerable developing economies are those struggling the most to finance adaptation and resilience. These economies are particularly exposed to climate-related financial risks, and both governments and firms are already facing a climate risk premium on the cost of capital (Kling and others 2020; Beirne, Renzhi, and Volz 2020). There is a real danger that climate-vulnerable developing economies will enter a vicious circle in which greater climate vulnerability raises the cost of debt and diminishes fiscal space for investment in climate resilience.

The financial risk of climate-vulnerable countries is already high and is likely to increase further as financial markets increasingly price climate risks and global warming accelerates (Buhr and others 2018). International support for increased funding in climate resilience and mechanisms to transfer financial risks is urgently needed and could help these countries to enter a virtuous circle. Greater resilience funding could reduce both vulnerability and the cost of debt, providing these countries with extra room to scale up investments to tackle the climate challenge.

The IMF and multilateral development banks will also need to develop new instruments, including extended emergency facilities, to support climate-vulnerable developing economies when they are hit by disasters. Over the past two decades, about 20 countries—most of them small island nations—suffered losses amounting to more than 10 percent of their GDP. The most extreme case is Dominica, where Hurricane Maria caused estimated damage in 2017 equaling 260 percent of GDP. In 2004, Hurricane Ivan wiped out about 150 percent of Grenada's GDP. But even in less extreme cases, disasters can wreak havoc on public finances and make sovereign debt unsustainable. We urgently need a discussion around the treatment of climate debt; that is, public debt incurred as a direct result of climate disasters or necessary adaptation measures.

Avoiding permanent crisis mode

The COVID-19 pandemic has shown how quickly a natural disaster can bring our economies to collapse. Climate-vulnerable countries have been living with this risk for a long time already. If we don't act now and make a concerted effort to significantly strengthen investment to mitigate and adapt to climate change, many more countries will find themselves in permanent crisis mode. The few countries fortunate enough to be spared will not be able to shield themselves from problems elsewhere. Just as the COVID-19 virus has spread across borders, the impacts of climate change will be felt across the world, not least through an increase in migration in the context of disasters and climate change.

The stakes are high. We have a decade to transform our economies and avoid catastrophic global warming. Collective efforts at all levels—locally, nationally, and internationally—and across all sectors—public and private—are needed to tackle climate change and build more resilient societies and economies. The challenges are enormous. But this crisis also provides an opportunity to rethink our economies and societies. As the IMF's Georgieva rightly said, it is upon us to "choose what kind of recovery we want." We'd better choose wisely. FD

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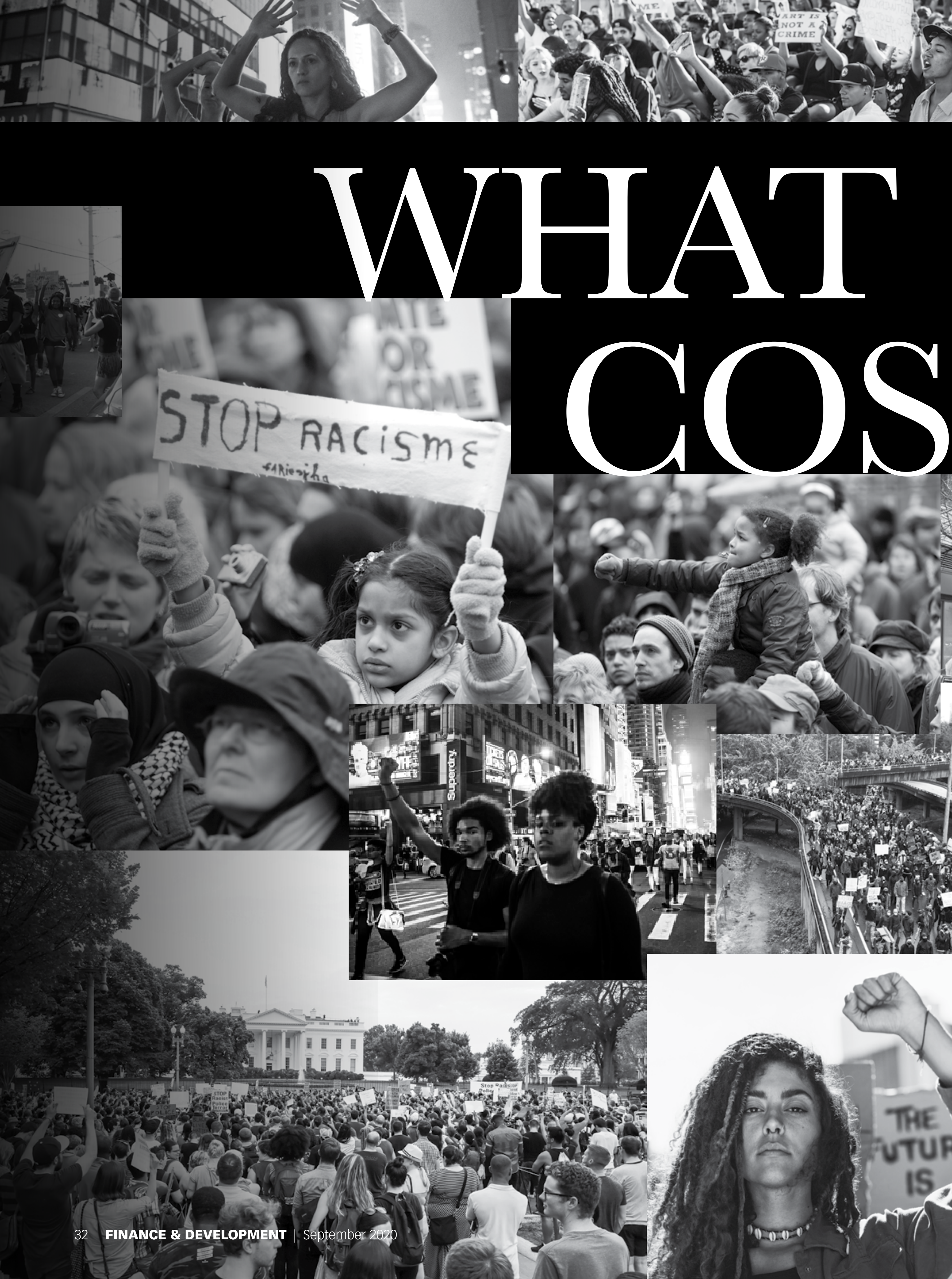

RACISM TS US ALL

Addressing systemic racism is a moral imperative; it can also make economies stronger

Joseph Losavio

George Floyd. Breonna Taylor. Ahmaud Arbery. Three Black Americans killed in acts that reminded the world that systemic racism is still very real in the United States. The early summer protests that followed, though sparked by those deaths, were manifestations of deeper anger and despair at the racism that has plagued the country since its founding.

As protests spread worldwide, many began to shift focus from solidarity with Black Americans to racial injustice within their own countries. Adama Traoré. João Pedro Matos Pinto. David Dungay, Jr. Different names from different countries, but still victims whose deaths have forced reexamination of the global presence of systemic racism and sent demonstrators into the streets to demand better.

Demanding an end to racism, and a remedy for its legacy, is not just morally correct but a boost to economic development. Continuing to deny the existence of racism, and refusing to confront it, will lead to a less vibrant, less cohesive, less prosperous world.

Birth of a nation

A multiracial nation since its independence, the United States has struggled to overcome what many refer to as its "original sin"—slavery—and the de jure and de facto racial discrimination that followed its abolition. Systemic racism continues to burden the United States, and Black Americans have borne the brunt of its legacy.

Racism in local American police departments is a deep-seated problem. According to analysis by the *Washington Post* and the *Guardian*, Black Americans are twice as likely as whites to be killed by police while unarmed. Although this is one of the most widely known forms of systemic racism, the problem runs much deeper.

For example, racism is rampant in medicine—in 2016, the US National Academy of Sciences found that 29 percent of white first-year American medical students thought

that Black people's blood coagulates more quickly than white people's, and 21 percent believed that Black people have stronger immune systems. Such misunderstanding often leads to inadequate preventive care and inferior treatment, resulting in worse health outcomes for Blacks than whites across the board. One study published by the American Heart Association found that racist medical notions contributed to Black women in America being a third more likely to die of heart disease than white women.

Racism has restrained Black economic progress for decades. The benefits of the post–World War II GI Bill, which fueled the growth of the American middle class, were largely denied to Black people at the insistence of white members of Congress from the South desperate to enforce racial segregation—war heroes or not. "Redlining," a Federal Housing Administration policy that refused to insure mortgages in Black neighborhoods, shut Black Americans out of one of the most common avenues for accumulating wealth, home ownership. These factors have all played a role in a persistent Black-white wealth gap. According to a 2019 McKinsey report, median Black families have 10 times less wealth than median white families.

Liberté, égalité, fraternité—pour qui?

Many other countries, such as France, experience similarly entrenched racism, even though that country's national mythology purports it to be a steadfastly color-blind society. The government refuses to compile statistics on faith, ethnicity, or skin color in its census. This universalist outlook masks modern-day racism resulting from historical atrocities. As is true of many countries in Europe, France's role in perpetuating colonial race-based slavery in the Americas is often misunderstood, leading to a belief that racism is a new-world, not an old-world, problem.

As Maboula Soumahoro, a specialist in African diaspora studies at the University of Tours, told France 24, "Because slavery was illegal on the mainland, people in France have the impression that this hyper-racialized history that is characteristic of the modern world only concerns the Americas," adding that "France is not blind to racism. France *thinks* it's blind to racism." This refusal to see race, and the official policy that derives from it, leaves the country unprepared to address systemic racism.

Policing in France may be less lethal than in the United States, but violence and discrimination are targeted far more toward racial minorities than toward French people who are white. Young men perceived as Black or Arab are 20 times more likely to face identity checks. Twenty percent of young Black or Arab French people reported being the victim of brutality in their most recent police interaction—well above the 8 percent of their white counterparts.

As in the United States, however, this systemic racism extends far beyond treatment by police. In a country where religion is often strongly correlated with race, men perceived to be Muslim by employers are up to four times less likely to get a job interview than candidates seen as Christian, according to the think tank Institut Montaigne (Valfort 2015). A 2018 study by the University of Paris-Est Créteil found that job applicants with Arab-sounding names got 25 percent fewer responses than those with French-sounding names.

Racial—or racist—democracy?

Brazil's views on racism are also deeply rooted in its national self-image. For many, the country is viewed as a "racial democracy"—which stems from the belief that Brazil transitioned directly from the 1888 abolition of slavery (the last country in the Western Hemisphere to do so) to participatory, multiracial democracy, avoiding the discrimination enshrined in law in countries like the United States and South Africa. In the minds of many Brazilians, racism and discrimination don't exist in Brazil—after all, Brazil never passed laws like Jim Crow segregation or apartheid, so how could it be truly racist?

Yet in a country where people of partial or full African descent are in the majority, Blacks in Brazil lag far behind whites in major quality of life indicators. Black Brazilians fare far worse in educational attainment. For example, in 2012 fewer than 13 percent of Afro-Brazilians over the age of 16 had received postsecondary education, 15 points lower than whites (Pereira 2016).

Some would ascribe this to class differences, not race; however, one study found that among sets of Brazilian twins in the same household where one was labeled white and the other nonwhite, the nonwhite twin was at a distinct disadvantage in educational attainment, particularly if the twin was male (Marteleto and Dondero 2016).

Black Brazilians also bear the brunt of violence at the hands of law enforcement. In 2018, the police

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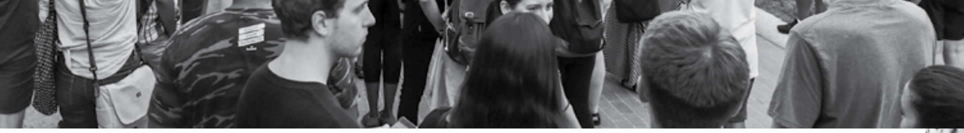

A less racist society can be an economically stronger one.

killed 6,220 people in Brazil, and despite representing about half of the national population, 75 percent of those killed were Black (Sakamoto 2019).

These systemic factors have widespread socioeconomic consequences. A study by the Brazilian Institute of Geography and Statistics found in 2019 that the average income for white workers was 74 percent higher than for Black and brown workers—a gap that has remained stable for years. Even with the same level of education, Afro-Brazilian men made only 70 percent of comparable white men's income, and Afro-Brazilian women only 41 percent.

Economic costs

Systemic racism is a global problem. It is real, and there is a robust moral argument for addressing it. However, one factor that is often ignored in this critical conversation is the broader economic dimension. Because it prevents people from making the most of their economic potential, systemic racism carries significant economic costs. A less racist society can be an economically stronger one.

For instance, the wealth gap between American whites and Blacks is projected to cost the US economy between $1 trillion and $1.5 trillion in lost consumption and investment between 2019 and 2028. This translates to a projected GDP penalty of 4 to 6 percent in 2028 (Noel and others 2019).

Or think of France, where GDP could jump 1.5 percent over the next 20 years—an economic bonus of $3.6 billion—by reducing racial gaps in access to employment, work hours, and education (Bon-Maury and others 2016). Witness also Brazil, which is losing out on vast sums of potential consumption and investment because of its marginalized communities.

A worldwide scourge

Of course, these three countries are not the only ones to experience racism, its deleterious social and economic effects, and the need for broader acknowledgment of its existence.

For instance, in a poll of Australians taken in the wake of the George Floyd protests, 78 percent of respondents said that US authorities have been unwilling to address racism. Only 30 percent believed there was institutional racism in Australian police forces. This view conflicts with both the lived experience of indigenous Australians in particular and with the A$44.9 billion the Alfred Deakin Institute believes racism cost Australia between 2001 and 2011.

Meanwhile, various racist incidents in China against African immigrants jeopardize the lucrative Sino-African trade and investment relationship. According to Yaqiu Wang, a researcher at Human Rights Watch, this is another case of discrimination denial, "where Chinese authorities claim 'zero tolerance' for discrimination, but what they are doing to Africans in Guangzhou is a textbook case of just that."

Countries should not try to address racism simply because it will help their economic development. It is a debt owed to their own citizens. However, the world should understand that commitment to respecting human rights and racial equity shouldn't be a passive statement of values. It should be a call to action, backed by active measures to acknowledge, understand, measure, and eradicate systemic racism. The world is at an inflection point, and it is up to our policymakers to meet the moment. If not, racism will continue to cost us all. FD

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RACE IN ECONOMICS

Economists and policymakers need a wake-up call to root out racial discrimination

Martin Čihák, Montfort Mlachila, and Ratna Sahay

The recent widespread protests in the United States and across the world against police brutality and systemic racism have stirred our collective conscience. As staff working in a multilateral institution that represents 189 countries, we have a moral duty to speak out against racism and discrimination. As economists, we also have a professional duty—we need to expose how discrimination harms people's livelihoods and economies, and how freeing the world of bias would also help address many of our economic challenges, to the benefit of all.

Yet, if we are to live up to these responsibilities, we have a long way to go.

Wrong side of history

The field of economics has been far from immune from discrimination and racism. George Stigler, a 1982 Nobel laureate, argued in 1965 that Black people were inferior as workers and that the solution was in fostering "the willingness to work hard" (Stigler 1965). This was not an exception: it reflected biases of economists and economic institutions of the time. Indeed, as Howard University's William Spriggs points out, economics has "a deep and painful set of roots that too few economists acknowledge" (Spriggs 2020).

The economic debate has progressed since Stigler's 1965 piece. Gary Becker, a 1992 Nobel laureate, demonstrated in his 1971 *Economics of Discrimination* that discrimination from several factors, including race, reduces the real income of both its target and the perpetrator. More recently, Harvard economist Raj Chetty and coauthors found that it is much harder for Black children in low-income US households to reach

PHOTOS: ISTOCK / MICHAELJUNG; RYASICK

higher income brackets than for white children, and that environmental conditions, such as racial bias, account for this finding (Chetty and others 2020).

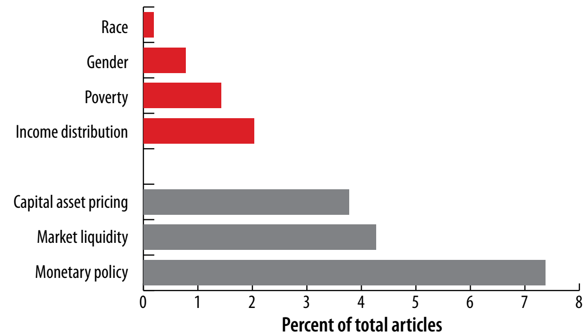
Despite the progress, economists still pay scant attention to race relative to other topics. We have compiled data on every article in the top 10 economics journals over the past 10 years (see chart). Only 0.2 percent of those top 7,920 articles cover issues of race, racial inequality, and racism. This is minuscule compared with the share of articles devoted, for example, to monetary policy (7.4 percent). While it could be argued that a focus on "mainstream" fields, such as monetary economics, is warranted, coverage of race is also several times lower than other inclusion-related topics, such as income distribution (2.0 percent), poverty (1.4 percent), and gender (0.8 percent).

This imbalance may partly reflect underrepresentation of minorities among economists. A global analysis is difficult due to lack of comparable data, but the American Economic Association provides illustrative data in the *Report of the Committee on the Status of Minority Groups in the Economics Profession*. Just 4 percent of economics PhDs awarded in the United States in 2018 went to Black economists, and Black representation in economics decreased from 6 percent in 1995 to 3 percent in 2019, while their representation in the US population remained about 13 percent. Black representation in economics was lower than in science, technology, engineering, and math (and the same was true for minority populations other than Black).

Still, the burden of conducting rigorous analysis on race must not fall only on those adversely affected. How can we transition to the right side of history?

Race and other topics in top economics articles

Only a tiny share of academic articles cover race, racial inequality, and racism.



Source: Authors' calculations based on Microsoft Academics and Research Papers in Economics (RePEc).

Note: The data set covers 7,920 articles from the top 10 economics journals (https://ideas.repec.org/top/top.journals.all.html) during 2010–20. The chart uses the Microsoft Academics and RePEc classification of "Field of Study." "Race" includes related terms such as racial differences and racism; "gender" includes gender discrimination, gender gap, and women's empowerment; and "monetary economics" includes terms such as monetary theory and monetary policy transmission.

Right side of history

In economic institutions—academic and policymaking alike—the first step is to create a safe environment to talk about racism, raise awareness, and provide mandatory bias training—including in those that are unconscious.

Rooting out discrimination starts by acknowledging that a problem exists. Ijeoma Oluo argues in her 2019 *New York Times* bestseller, *So You Want to Talk about Race,* that we filter information through our own experiences to assess the validity of biases. But race is not a universal experience, which makes another person's racial experience difficult to assess. While the fundamental solution lies in correcting systemic discrimination, silence at the individual level is deadly, as it perpetuates that system.

Motivated proponents can be inspired to focus more on the topic of race in their economic work, while skeptics can be persuaded to lessen pushback, fuel constructive discussion, and generate support. In turn, as the body of work on race grows, others will be encouraged to follow suit. Combating discrimination is not a zero-sum game: research shows that, overall, it improves the economy's performance (for example, Sahay and others 2018).

To make progress, economists need to further broaden their perspective. Harvard sociologists Mario Small and the late Devah Pager have argued that economists need to adopt more sociological perspectives on racial discrimination and begin to examine institutional discrimination and the forms of everyday interpersonal discrimination that can be highly consequential for economic outcomes (Small and Pager 2020).

Increasing diversity in the economics profession, including racial diversity, is an important part of the solution. Evidence suggests that instructors' demographics influence Black participation not only early on in the pipeline, but at all stages in

As IMF staff members, we recognize that addressing biases begins at home.

the profession, including admissions, job market placement, hiring, and promotion decisions. As noted by John Rice in his June 2020 article for the *Atlantic*, “The Difference between First-Degree Racism and Third-Degree Racism,” it is a fallacy to argue that there is a trade-off between increasing racial diversity and maintaining the excellence-based “meritocracies” that have made organizations successful. Leveling the playing field for minorities at each step goes a long way in addressing discrimination and making organizations more productive.

Proactively recruiting qualified minorities, who do not have the networks to get a foothold, is critical, as is developing and supporting them as they rise through the ranks. For instance, the American Economic Association’s Committee on the Status of Minority Groups in the Economics Profession runs several initiatives designed to encourage minorities to study economics and pursue an academic career. And if the supply of diverse candidates is lacking, then society needs to dig deeper to address where biases begin—health services, education opportunities, or access to housing.

As IMF staff members, we recognize that addressing biases begins at home. For more than half a century, men from Europe and the United States made up the majority of the IMF’s senior managerial positions. Starting in the mid-1990s, as efforts were made to promote diversity, we began to see some progress on improving the representation of women and staff from underrepresented regions such as East Asia, the Middle East, and sub-Saharan Africa. Since 2003, benchmarks have been set for gender and regional diversity. The regional benchmarks seek to broadly align the proportion of staff from a region with the financial contribution of the countries in the region to the IMF’s resources as well as the use of these resources by them. These benchmarks were not intended to address racial inequity, even if many consider them to be imperfect proxies for race. While we have achieved steady progress against these benchmarks, gaps remain in the shares of underrepresented staff and their promotions to managerial positions.

The good news is that IMF management has expressed its commitment and is taking concrete actions to further promote inclusion of diverse staff and eliminate all forms of discrimination, including racial inequities. The IMF will enhance training on unconscious biases and microinequities, refocus recruitment efforts, improve the promotion process, introduce a program of sponsors for underrepresented staff, and collect data on diversity dimensions, including by race and ethnicity, by asking staff members to voluntarily self-declare their identity. We look forward to all IMF member countries adopting the same principle—that inclusion begins at home.

The Black Lives Matter movement has given a new impetus to raising awareness, learning, and empowerment. Research suggests that more economically inclusive organizations, cities, and societies tend to be more resilient and more prosperous. Economists have a role to play in the action for change to help build inclusive systems for the benefit of all—but first we must all, individually and collectively, look within. FD

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FRIEND OR FOE?

Technology can boost either resilience or inequality, depending on how much you have of it

Andreas Adriano

The COVID-19 global lockdown triggered an unprecedented experiment. Millions of professionals had to do from home what they used to do in offices. TV anchors hosted from their living rooms; IMF officials working remotely approved more than 70 emergency loans in three months; traders continued to buy and sell stocks from mountain cabins. Companies got over the fear that dispersed teams would be less productive, and many—including Silicon Valley giants—told employees not to worry about returning to the office. Teleworking was promoted to viable long-term solution from temporary fix or precarious freelancer arrangement.

Advances in technology made this global randomized trial possible. Imagine a Webex meeting over a dial-up modem. Laptops, tablets, and smartphones connected to high-speed internet connected to cloud services have kept the world going. Technology has been a resilience factor for the global economy. But for those who can't afford it or earn a living through it, technology accentuates exclusion and inequality.

Half of the US labor force has been working from home amid the COVID-19 onslaught, up from 15 percent previously, according to Erik Brynjolfsson and four other Massachusetts Institute of Technology economists. By contrast,

PHOTO: ISTOCK / PHONLAMAIPHOTO

58 percent of households in Brazil don't even have a computer, according to a 2019 report. This is in line with recent IMF research showing that fewer than half of people in developing economies have internet access. Another IMF paper assessed how "teleworkable" various jobs are and estimated that 100 million people in 35 advanced and developing economies are at high risk of layoffs or pay cuts because their jobs can't be done remotely. These jobs are filled by mostly young, female, and less educated people who work in hospitality, food services, construction, and transportation.

In general, the poorer the country, the harder it is to telework. International Labour Organization researchers estimated that fewer than one in five workers worldwide are in occupations and live in countries with the infrastructure needed for effective working from home. That average disguises wide disparities. In North America and western Europe, the proportion is 1 in 3; in sub-Saharan Africa it is 1 in 17.

Destructive creation

In just a few weeks, the pandemic did as much damage to employment as automation was expected to inflict over decades, according to economist Daniel Susskind. In his most recent book, *A World Without Work*, he acknowledges that the fear of technology destroying jobs is as old as machines themselves—but argues that this time may be different.

The traditional argument is that innovation destroys some jobs but creates many others and frees people to do other things. The advent of automated teller machines in the 1960s, for example, didn't replace human tellers. It freed them up to do more complex tasks than dispensing cash. However, technology has since enabled online banking, which greatly reduced the need for a customer to go to a branch. In recent years, big data and machine learning have made it possible for financial institutions to have no physical branches at all.

Over time this "creative destruction" has not been favorable for people. The jobs created and lost don't necessarily match in terms of location and skills. Labor mobility is much lower than believed. Many experts agree that automation is largely responsible for the massive destruction of manufacturing jobs over the past few decades in countries such as the United States.

Susskind sees the automation trend strengthening with the rapid development of artificial intelligence (AI) because it accelerates machines' ability to outperform human beings in more tasks. "Machines will not do everything in the future, but they will do more," he writes, observing that automation has not replaced people entirely in farming and manufacturing, but it has greatly reduced the number and quality of jobs.

Scientist robot

Automation of assembly lines is nothing new. But robots are expanding into new occupations, including health services. Mechanical arms built by the German company KUKA can sort blood samples in Denmark and speed COVID-19 tests in the Czech Republic, mixing reagents to test swabs faster and more precisely than humans.

A similar machine in a University of Liverpool chemistry lab takes it some steps further. Using AI, Benjamin Burger, a PhD researcher, programmed the machine to conduct scientific experiments on its own, mixing samples and analyzing results. It can work 22 hours a day and once carried out more than 600 tests in eight days. Burger says the machine complements his work.

"It can easily go through thousands of samples," he told the BBC, "so it frees up my time to focus on innovation and new solutions." The machine also helps Burger with social distancing and allowed the scientist to continue experiments while quarantined. But it may have made one or more lab assistants redundant.

The goal of freeing people from repetitive or taxing jobs is valid only if they can find something else to do. Can they? Are there areas in which humans don't need to fear competition? Yes: professions that require social intelligence and face-to-face interaction. Between 1980 and 2012, these jobs grew 12 percent as a share of the US workforce.

At least until COVID-19 hit. "Jobs with a high level of social interaction and less susceptible to automation are exactly those most at risk with the pandemic," Susskind told F&D in a video interview from Oxford. "Many of the scenarios in the book that might have sounded outlandish five months ago are now completely mainstream."

Calling all doctors

Some eminently face-to-face professions have been able to rearrange themselves quickly using technology. The explosion in telemedicine is a good example of agility—but also of how the process might leave some people behind.

Videoconferencing instead of visiting a doctor has been available for years. But in the United Kingdom, only 1 percent of general practitioner appointments were remote before the pandemic. After it hit, it soared to 90 percent. In the United States, one health insurer reported that online appointments jumped from 10,000 a month before the pandemic to 230,000 last April—in only one state.

This explosion did not require groundbreaking technology. Telehealth can be as simple as a Skype call. Technology facilitated a behavior change that the pandemic supercharged. For safety, patients and doctors shed long-held habits and suspicions. Recent regulatory changes helped. In the United States, doctors were allowed to bill online appointments in the same way as physical visits. Patients were no longer required to be in a health facility for a remote appointment.

Although it worked well for doctors and patients, the transition may have left some victims in its wake. An online practice will probably need fewer nurses, receptionists, technicians, and managers.

Pandemic-induced cultural change is likely to meet technological convenience in many areas, with potentially serious consequences for jobs. E-commerce does not require scientist-robot technology. More online buying in itself puts physical retailers at a disadvantage. Teleworkers can fill their caffeine craving by ordering Nespresso capsules online instead of going to chic but probably empty shops. Indeed, Nestlé reported recently that online demand for coffee pods increased 30 percent with the pandemic.

RIP office?

As long as COVID-19 remains a threat, it will be impossible to tell whether the world is seeing real cultural change or just successful contingency adaptation. The global teleworking experiment has led many to herald the end of the office as we know it. But reports of its demise may be exaggerated. What is now considered lifesaving technology has been around for years without triggering a mass exodus. While there are many potential benefits—flexible working hours, less commuting, people able to work and companies able to hire anywhere—the long-term consequences of home working are yet to be fully assessed. One obvious danger is cybersecurity: more people connected to unprotected domestic networks increase the so-called attack surface available for hackers. The impact on cities and office areas, as well as on hotels, restaurants, shops, and other services, is hard to estimate, but it could be meaningful.

Brynjolfsson, recently named director of Stanford University's Digital Economy Lab, believes the change is more permanent and predicts expanded use of machine learning. "The question is, What parts of the economy are going to be most [or] less affected?" he said in a recent seminar. Without an effective treatment or a vaccine, the pandemic can lead to more automation because of social distancing and businesses seeking resilience. A more automated assembly line is less susceptible to outbreaks.

Economies—advanced or developing—must make technology work in their favor.

"In the UK, the incentive for automation has been suppressed by government interventions to protect workers," Susskind told F&D. "Once these protections expire, this incentive might be unleashed again."

Technology has kept the world humming but has also accentuated many fault lines: education, income, types of jobs. The solution to this dilemma is complex. Governments will be called on to spend more in the short term—helping companies keep current employees, expanding training, and facilitating rehiring—and over the long run, in particular, investing in education and broader internet access. It's a tall order even for advanced economies, but especially for emerging economies still struggling with basic needs.

Maybe the solution is inside the problem. Economies—advanced or developing—must make technology work in their favor, and governments must make inclusiveness a priority. "Innovation can create new growth and boost productivity," Era Dabla-Norris, lead author of the teleworkability study, told F&D. "Digitalization is reshaping many activities and can help workers and business adjust to this new world. The key is to create digital inclusion and then translate it into economic inclusion." FD

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Biology student Samela Satere-Mawe, 23, mails a package of masks.

Portraits of Resilience

Samela Satere-Mawe
Manaus, Brazil

Samela's mother, Sonia, gives her a massage after a long day at work.

BIOLOGY STUDENT SAMELA SATERE-MAWE, 23, serves as secretary of the Association of Satere-Mawe Indigenous Women in Manaus, Brazil. Despite her youth, Samela—whose indigenous name means "bee"—is already committed to fighting for the rights of her people.

But the association—which has long thrived by selling handicrafts made from Amazonian products, mainly to tourists—has seen its usual activities come to a halt, thanks to COVID-19. The group began making face masks—initially for its members' own use and later for sale more broadly. Their work drew the attention of organizations that donated sewing machines, material, and even food. Samela coordinates the production of face masks that are now the lifeblood of the association, which has successfully pivoted to stay afloat during the pandemic.

Photography and reporting by **RAPHAEL ALVES** in Manaus, Brazil.

Sonia Satere-Mawe, coordinator of the association, displays with her daughters Samela (right) and Sandiely (left) the masks produced at the association.

Residents of the Association of Satere-Mawe Indigenous Women gather for a group photo in July after receiving gift baskets from the Amazonas Sustainable Foundation.

Members of the association sew face masks.

A bundle of face masks to prevent COVID-19, packaged by the association.

Lupe Salmeron Ibarra on a visit to her alma mater, Edgewood College, in Madison, Wisconsin, United States. Because Lupe is an undocumented immigrant, she does not qualify for federal student loans and must pay international student tuition, which is higher than in-state tuition. Edgewood College offered her a generous financial package.

Lupe Salmeron Ibarra
Madison, Wisconsin, USA

LUPE SALMERON'S coming graduation from Edgewood College in her hometown of Madison, Wisconsin, was set to make her first in her family to obtain a degree. Family in Mexico would fly in to celebrate. And with a spring internship in Washington, D.C., she was poised to snag a full-time job in American politics.

COVID-19 dismantled it all. When both her congressman's office and the restaurant where she worked part time were shuttered in March, Lupe, an undocumented immigrant who came to the United States at age six, returned to Madison. For a time, she worked as a credit union teller to help defray the steep tuition that noncitizens like her must pay. And then she contracted COVID-19 herself.

After isolating with mild symptoms, she returned to her job before joining the staff of a local nonprofit that helps Latinx youth prepare for college. While helping others achieve their goals, she keeps sight of her own. "If more people in my generation get into politics, we can reflect on how the system is broken," she says, "and focus on what we want to change."

Photography and reporting by **ARIANA LINDQUIST** in Madison, Wisconsin.


Lupe cooks breakfast for her younger sister Ximena, left, at home in Madison.

Lupe holds graduation stoles that represent various organizations she belonged to while in college.

Lupe bikes with an old friend from high school, Damien Burke. Madison is a politically progressive city, and there are many reminders to vote. Although Lupe is politically active, she cannot vote because she is an undocumented immigrant. Her younger brother, who just turned 18, will be the first in the family to vote.

Lupe watches the television show Grey's Anatomy *on Netflix after dinner. While Lupe was sick with COVID-19, she had to be isolated for 10 days.*

Lupe and her friend Damien stop to buy lemonade.

Rickshaw driver Raja Mia counts his day's earnings as dusk falls on Dhaka.

Raja Mia
Dhaka, Bangladesh

RAJA MIA, 45, is a rickshaw driver who lives with his wife, Beauty, and youngest son, Bishal, age 7, in Bangladesh's capital. Their house has just one room, and they share cooking and sanitary facilities with members of other families.

Originally from a rural village, Raja moved to Dhaka in hopes of making a better life. On a normal day, Raja makes $7, barely enough to provide for his family. When the COVID-19 crisis hit and things officially closed the city down on March 25, his work slowed to a trickle and his family had to rely on neighbors for food. Raja's daily income dropped to $2.50. Some days, he just stays at home. He doesn't worry too much about getting COVID-19. "If I don't work, we will die anyway," he says. FD

Photography and reporting by **K. M. ASAD** in Dhaka, Bangladesh.

Raja comes out of the rickshaw garage to pick up a passenger.

In the evening, Raja enjoys playing music with friends.

Raja lives with his family in a 10 by 10 foot room in the capital city.

A customer pays Raja for the ride.

Raja covers his face now.

ECONOMICS AGITATOR

*Bob Simison profiles University College London's **Mariana Mazzucato**, tireless proponent of government-led innovation*

PHOTO: S. ROBINSON

Even around the dinner table, economist Mariana Mazzucato deployed her extraordinary skills as a communicator to keep her family engaged during the pandemic lockdown in London.

She and her husband, Italian filmmaker Carlo Cresto-Dina, insist on a sit-down family meal each evening in their London home, and everyone speaks a mix of Italian and English. They discuss school, work, movies, and economics.

"We talk about a theme, so every night is a massive debate between the teenagers and us," Cresto-Dina says. The four kids are ages 20, 17, and 14 (twins). "During lockdown she also assigned the twins a research project on the digital divide." There was, he says, "lots of yelling."

Outside the home, Mazzucato has been stirring the pot in economics and public policy for nearly a decade. Her main message is that governments around the world need to seize their power to lead innovation for the betterment of humanity. Just now she's immersed in applying her ideas to the COVID-19 crisis as a member of various task forces as well as in her customary role of economics agitator.

"We can't get out of the COVID problem," she says, "unless we actually rethink the role of the state. Literally, what is it for?"

Her controversial answer: Government is for setting big goals, defining the missions necessary for achieving them, encouraging and investing in innovation, and governing the process so that the public benefits. This contradicts the modern conventional wisdom that government is there to clean up after disasters and fix egregious market imbalances, but it should otherwise get out of the way so that private enterprise can lead innovation.

That kind of thinking led to the 2007–08 financial crisis and the damaging wave of government austerity that followed, especially in Europe, Mazzucato says.

"Hollowed-out" government capacity

"All I saw were cuts to social services and public investments—in the name of innovation," she says. As an expert in innovation, she was horrified. She made the case for rethinking the role of government in her 2013 book, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths.* In it, she argues that much of private innovation in health care, technology, and elsewhere relies on government-funded research that private enterprise can't or won't invest in. "I'm not sure I would have embarked on this had I not seen the suffering on the ground," she says in an interview.

The different levels of suffering wrought by the pandemic in different parts of the world reinforce the argument, Mazzucato says. The 52-year-old Italian-American is a professor of economics focusing on innovation and public value at University College London (UCL), where she is also the founding director of UCL's Institute for Innovation and Public Purpose.

"State capacity has really been hollowed out because of the narrow way that we think about the state," she says. "If the state is only there to fix market failures and then get out of the way, then there is not much incentive to invest in the knowledge-creation mechanisms to cocreate value." That's particularly evident in the United Kingdom and the United States, where political leaders defunded public health and devalued government itself, eroding public trust and government's capacity to respond to crises, she says.

By contrast, governments of several much smaller, much less rich nations responded more effectively to the pandemic than America and Britain, Mazzucato says. She cites Vietnam, southwest India's Kerala state, New Zealand, and Denmark, which made substantial investments over time in state capacity and were better able to manage the crisis in terms of lockdown measures, providing protective equipment and inspiring citizens' trust.

Woman on a mission

Mazzucato may be one of the world's highest-profile economists since the publication of *The Entrepreneurial State*. She expanded the discussion in 2018's *The Value of Everything: Making and Taking in the Global Economy*.

She's become a fixture on British TV news. She has appeared on CNN, PBS, and the BBC's popular "Desert Island Discs" radio broadcast. She gave TED talks this year and last. She regularly writes opinion pieces for the likes of the *Financial Times* and the *Guardian*. She has been profiled by *Wired*, the *Times of London*, the *New York Times*, the *Financial Times*, *Quartz*, and *Fast Company*, among others.

Along the way, Mazzucato has picked up a fistful of economics awards and become a sought-after advisor to policymakers. South Africa, Italy, and the Vatican drafted her for COVID-19 task forces. She's an advisor to the Scottish government on economics, the Organisation for Economic Co-operation and

Development on growth, Norway on research policy, and the European Union on research and innovation.

Born in Rome, Mazzucato came to the United States at the age of five, when her nuclear physicist father accepted a position at Princeton University's Plasma Physics Laboratory. She learned Italian cooking and baking from a mother who taught culinary arts. After completing public high school in Princeton, New Jersey, she did her undergraduate work at Tufts University in Massachusetts and her doctorate in economics at New York's New School for Social Research. She has worked in the United Kingdom most of the past 20 years, assuming her present position in 2017.

"She has changed the debate on the role of government," says Gregor Semieniuk, an economics professor at the University of Massachusetts, Amherst, who did postdoctoral work with Mazzucato at Sussex University in Brighton, England. "She is very eloquent in bringing across the point that government can be part of the solution rather than blocking progress."

In *The Entrepreneurial State*, Mazzucato points to the role of the US government in funding pharmaceutical research that helps drugmakers invent new treatments and in creating the technologies behind Apple's iPhone and related products. She argues that government can thus foster innovation, leading to job creation, economic growth, and broad gains in social welfare. The professor often cites the American government's 1960s mission to land humans on the moon, which uncorked a wave of innovation across dozens of fields.

Taking on the critics

Of course, not everyone buys it. To economist Arthur Diamond of the University of Nebraska, Omaha, Mazzucato's thesis sounds too much like centrally planned industrial policy, which he argues won't work because government is inherently unable to foster innovation. In his 2019 book, *Openness to Creative Destruction: Sustaining Innovative Dynamism*, he argues that what drives innovation is entrepreneurs who are deeply immersed in their subject and able to benefit from serendipity, pursuing hunches, and plain old trial and error.

"Government decision-makers won't be as immersed in the problems, won't have the detailed information, and won't be in a position to follow hunches toward breakthrough solutions," Diamond says.

Mazzucato's sharpest critic may be Alberto Mingardi, a historian of political thought who teaches at IULM University in Milan and is director-general of Italy's free-market think tank Istituto Bruno Leoni in Milan. In 2015 he published a 23-page critique of *The Entrepreneurial State* with a 32-entry reference list. Mazzucato's "evidence is shaky," and she "fails to prove that the specific government interventions that she hails as beneficial were purposefully directed to achieve the particular outcome in question," he writes.

"My contention is that the way she develops *The Entrepreneurial State* at its core is that military investment in technology had positive spillovers into the civilian economy," he says in an interview. "But she pretends that these are not positive spillovers but rather the result of directional policies, and she doesn't prove her thesis."

Such critiques, Mazzucato replies, ignore governments' record of supporting new technologies at the risky early stages. Apple's Steve Jobs and Microsoft's Bill Gates recognized that they were building on advances by government-funded organizations, she says. The American government's 62-year-old Defense Advanced Research Projects Agency was set up to take risks, and its research laid the foundations for much of today's information technology and the internet, Mazzucato adds.

"If the state is so unsuited to pursuing hunches and serendipity, how do you explain that the US was spending billions of dollars to establish the GPS system, long before it came to support billion-dollar taxi companies?" Mazzucato says. "If Uber is the poster child for creative disruption, how can it be that it depends so totally on an innovation entirely supported and developed by the government?"

Mazzucato also rejects the idea that she advocates central planning.

"Rather, the state should give direction to the economy—making the necessary investments early on but also governing the process to make sure that citizens benefit," she says. "This means making sure that patents are not abused and that prices of medicines reflect the underlying public funding so the taxpayer does not pay twice." She argues that this requires a *market-shaping*, not a market-fixing, policy approach.

Mazzucato wrote *The Value of Everything*, she says, "because even though my ideas in *The Entrepreneurial State* really caught on and eventually led to real policy change in so many countries, the underlying principles of who was a wealth creator needed tackling head-on, especially the ramifications for basic economic theory about 'what is value.'"

Undervalued essential workers

The pandemic puts a harsh spotlight on the issue as many of the workers deemed the most essential—from grocery store clerks to delivery drivers to nurses and hospital orderlies—are also some of the lowest-paid. This partly reflects accounting-related distortions in the economy: GDP calculations count financial services because they generate fees even though they don't create anything new, but it's hard to put a value on a sound public health or public education system, Mazzucato says.

"We need to value and resource the essential parts of the economy," Mazzucato says. "Value has not been shared with the workers, meaning that real wages have stalled behind productivity growth." In her second book, Mazzucato observes that while the American economy has tripled in size, wages adjusted for inflation haven't budged in four decades.

As they shore up economies and bail out businesses amid the pandemic, governments should use their leverage to tilt the playing field in significant ways, Mazzucato says. There should be strong conditions for grants and loans, she argues. In return for bailouts, for example, airlines should be required to lower carbon emissions.

In a July 1 *New York Times* opinion piece, Mazzucato urged "citizens' dividends" and government equity stakes in businesses linked to government funding. "It is simply admitting that the government, an investor of first resort, can benefit from thinking more like a venture capitalist around societal goals like a green transition," she wrote.

"The race for a coronavirus vaccine offers a good opportunity," Mazzucato said in the article. "The price that citizens pay for pharmaceuticals does not reflect the enormous public contribution—in 2019, over $40 billion—to medical research. The pricing of COVID-19 vaccines must account for the public-private partnerships that build off public-funded research and make sure the patents around COVID-19 vaccines are shared in a common pool and the vaccine is universally available and free."

Training civil servants

In the six-story building on London's Russell Square that houses the two-and-a-half-year-old Institute for Innovation and Public Purpose, Mazzucato's team of 30 is developing a Master of Public Administration program focusing on innovation, public policy, and public value. She aims to train civil servants to apply her ideas in government. With a budget generated from teaching income, research grants, and policy consulting, the institute has already helped Scotland set up a national investment bank, the European Union adopt a mission-based research and innovation policy, and the United Kingdom develop an innovation and industrial strategy.

Mazzucato's principal contributions have been to challenge thinking about the role of government, highlight the disconnect between value and price, and reconnect theory and policy practice through her work with governments, says Carlota Perez, a British-Venezuelan scholar specializing in technology and socioeconomic development. An honorary professor at Mazzucato's institute, she wrote the 2002 book *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages.*

"She is a very brave woman to confront the powerful economics establishment that has continued to espouse market fundamentalism despite its repeated failure to identify bubbles, predict crashes, and to give advice for truly successful policies," Perez says. And Mazzucato stands out in a profession where women have long been underrepresented. "She is a star, an excellent role model of what a woman can achieve," Perez says.

For her own part, Mazzucato sees her work as far from finished. This time around, there's been little discussion so far of government budget cutting as a cure for the world's pandemic-stricken economies. But she sounds a warning.

"Be careful," she says. Even as governments open the fiscal spigots to counter the pandemic's downward pressures, "don't assume that means that we won't have austerity." Already there's talk in Britain of "burden sharing," meaning that local governments may be expected to repay funds advanced by the central government, she says.

"That would mean cuts in the very services and systems and structures which we seem to have woken up to during the pandemic, calling them 'essential,'" Mazzucato says. "There's a huge battle ahead." FD

BOB SIMISON is a freelance writer and editor who previously worked at the *Wall Street Journal*, the *Detroit News*, and Bloomberg News.


PHOTO: COURTESY OF THE BANK OF JAMAICA

Staying the Course

Jamaica's former central bank governor ***Brian Wynter*** *explains the challenges of modernizing monetary policy*

JAMAICA HAS LONG struggled to gain control over its fiscal deficits and public debt and has often suffered damagingly high inflation. Recently, the country has scored important successes in stabilizing the economy—before it was hit hard by the COVID-19 crisis.

Brian Wynter was governor of the Bank of Jamaica during 2009–19 and was central to the country's economic transformation. Under his leadership, monetary policy was strengthened, with the aim of price stability and a flexible exchange rate and significant accumulation of reserves. The Bank of Jamaica launched an innovative communications campaign, to a reggae beat, to explain the benefits of inflation targeting to a public long accustomed to focusing on the exchange rate, aiming to build public trust and understanding.

In this interview with F&D's Olga Stankova, Wynter discusses Jamaica's economic policy challenges.

F&D: How did Jamaica, where the exchange rate played a large role for a long time, decide to embark on the reform of this regime?

BW: For many years we operated an exchange rate regime we considered to be flexible. But in retrospect, it was rather rigid. There can be a big difference between what people profess to be doing and what they are really doing. By the IMF's assessment, we de facto had a crawl-like peg.

There were gaps elsewhere in the macroeconomic picture creating challenges for exchange rate policy. Fiscal expansion sometimes led to overvaluation through its impact on the balance of payments, and we needed to solve this problem.

Fiscal reform requires difficult steps for a country and its leaders. Fiscal rules were first established in 2010 and refined in 2014. Having a fiscal council, as is now proposed, can bring even more independent thinking and more trust in economic projections. The three IMF-supported programs I was involved in all aimed at addressing fiscal problems and unstable debt dynamics, helping bring inflation under control and avoid misalignments in the exchange rate.

An important complement to fiscal rules is the independence of the central bank in an inflation-targeting framework, with a more flexible exchange rate. If the Bank of Jamaica now receives a mandate for inflation and greater independence as proposed in new legislation, it will need to explain to the public why it is raising interest rates when, for example, the government says it should be cutting them. Already, the move towards inflation targeting has forced the central bank to communicate better.

The finish line on this path of reform is not yet in sight.

F&D: Apart from inflation targeting, do you see other workable choices for countries that would like to move to greater exchange rate flexibility? Monetary targeting?

BW: It depends on country conditions. In Jamaica, we have tried every variety. In the 1990s, when we were targeting monetary aggregates, we discovered that for us it did not work. The variables did not perform, and the link between the variables and inflation broke down. And I think this has been shown in studies in other countries.

The exchange rate regime is a deep policy choice with significant consequences. But you need policy toolkits that can work with the choice you have made, and Jamaica is better placed to build a resilient and prosperous economy with a flexible exchange rate.

F&D: There has been discussion of integrating policy tools—interest rates, foreign exchange intervention, macroprudential measures, and capital controls—into an overall framework. What are the prerequisites for doing this successfully in small open economies?
BW: In Jamaica, which is a hyper-open developing economy, we will need many years to get each of these components working well enough, before the integration question is more than academic. That does not mean that we should not start thinking and looking at these things together. Fiscal and labor policies must be fit into this unified macro framework.

You can reach more sophisticated combinations eventually, but it is important not to get too caught up in this when there is a big fiscal deficit that needs to be fixed.

Persistence, focusing on and fixing one thing at a time, getting each one right—in the right sequence—is the main secret of success of many of the countries that have grown most strongly.

F&D: Speaking about one element of the framework, foreign exchange intervention, do you see a benefit to having some rules here?
BW: The central bank needs to have some simple and clear rules about foreign exchange intervention. It reassures people. Many stakeholders want this. But it is not black and white. In implementing rules, central banks must preserve a degree of discretion. They must also have overwhelming power to move the market. You put a couple of businesspeople together and they will try to find a way to make the most money, and you may end up privatizing gains and socializing losses. A central bank needs to safeguard the market against that sort of outcome. You need some rules, but you must preserve the ability to disrupt bad behavior.

F&D: How do you see the role of communication in building public support and understanding?
BW: The role of communication is enormous. When in 2018 we were going for greater independence, I felt the most important thing for the central bank would be its relationship with the public. It is all about the public in a democratic country.

We were paying a lot of attention to the machinery of monetary policy, the technical aspects, which is important. Yet you can get half of this wrong and still be right. But you cannot get communication wrong and still be right. I always thought that the machinery was maybe 30 or 40 percent of the central bank's focus, and communication 10 percent. But I have since switched it around: communication is 30 or 40 percent.


"Low and stable inflation is to the economy what the bass line is to reggae music."
PHOTO: COURTESY OF THE BANK OF JAMAICA

In a way, that is what monetary policy has always been about. What will the stakeholders think? How are they going to react? Are they going to go out and shop more or not? Are they going to buy more foreign exchange or less?

F&D: The Bank of Jamaica used popular reggae music to explain the benefits of low and stable inflation to a public long accustomed to focusing on the exchange rate. Did this approach pay off?
BW: I do not think we have seen the payoff yet. This was a direct appeal to our population: the reggae music, TV and radio ads, and especially the billboards that are still out there saying that inflation is a monster—let's not have it again.

But the central bank cannot beat that drum too long or too hard. It needs to connect to something, and I am not seeing right now how it connects. The ultimate payoff for effective communication is better understanding of policies, or attention to decisions.

One of the biggest remaining challenges is getting the public to understand that the central bank is not there to stop the exchange rate from moving. For a competitive and resilient economy, we need to overcome the force and power of the bias of the system towards a more rigid exchange rate. Having seen Jamaica successfully implement many difficult reforms, I am confident this change will come. FD

This interview has been edited for length and clarity.

An *OUNCE* of *PREVENTION*

Our approach to vaccine finance is ill-suited to addressing epidemic risk

David E. Bloom, Daniel Cadarette, and Daniel L. Tortorice

The world faces a sustained threat of outbreaks and epidemics. In many locations, the COVID-19 pandemic continues to rage, while in others, any lapse in control could spark a swift resurgence. Beyond COVID-19, the potential emergence and spread of other known and unknown pathogens represent another less immediate, but no less material, element of risk.

Given the substantial health, economic, and social consequences of epidemics and the high cost of mounting a response, biopharmaceutical countermeasures to prevent or quickly react to emerging infectious diseases have tremendous value. A growing body of research supports the notion that the full societal value of vaccination far exceeds what traditional economic evaluations, which narrowly focus on a subset of direct health benefits and health care cost savings, can capture.

But reliance on population immunization to control infectious diseases requires substantial expenditure on research and development (R&D), manufacturing capacity, and delivery.

The adage that an ounce of prevention is worth a pound of cure has never been truer. Yet important questions remain: How do we make sure we are investing in the correct ounces? And how will we pay for these investments?

ART: ISTOCK/DRAFTER123

'Panic and neglect'

The current system for developing and manufacturing vaccines, which relies substantially on the profit motive of major multinational pharmaceutical companies, has produced many vaccines for endemic diseases that affect large numbers of people in wealthy countries. Driven by the demand of those with high ability and willingness to pay or strong philanthropic backing, new vaccines against pneumococcal disease, human papillomavirus, rotavirus, and seasonal influenza have been brought to market in recent years, saving millions of lives in countries of all income levels while generating billions of dollars in annual profit. Likewise, effective COVID-19 vaccines are on track to be developed in record time, even if the rosiest prognostications of widespread availability in one to two years from the inception of R&D are far less certain.

However, the current model of vaccine R&D and manufacturing is significantly less effective for diseases that almost exclusively affect lower-income countries and for individually low-probability, high-severity epidemic threats, such as Ebola-like hemorrhagic fevers, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome, Zika, and others included in the World Health Organization's (WHO's) list of blueprint priority diseases (WHO 2020). The world's continued failure to produce high-quality vaccines against tuberculosis, malaria, and human immunodeficiency virus—the three biggest infectious disease killers globally—and the lengthy delays witnessed in finalizing an Ebola vaccine despite early promise emblematize the shortcomings of the system.

Many observers have described a cycle of "panic and neglect" when it comes to investing in preventive measures against diseases of epidemic potential. For example, the flurry of funding for R&D efforts aimed at producing a vaccine against coronaviruses that took place during and immediately after the 2002–04 SARS pandemic was followed by years of dramatically reduced activity when the immediate threat abated. In general, the global community spends much less on prevention than on treatment: With vaccine sales generating roughly $40 to $60 billion in annual revenue, the global vaccine market accounts for approximately 3–5 percent of the total global pharmaceutical market.

New international entities such as the Coalition for Epidemic Preparedness Innovations (CEPI) and established global health institutions such as Gavi, the Vaccine Alliance; the Bill & Melinda Gates Foundation; and the Wellcome Trust are attempting to address some of the world's unmet need for (insufficiently profitable) vaccines. CEPI aims primarily to bolster vaccine R&D, while Gavi supports vaccine delivery (and manufacturing by virtue of increasing market demand), and the Gates Foundation and the Wellcome Trust provide needed funds to CEPI, Gavi, and others.

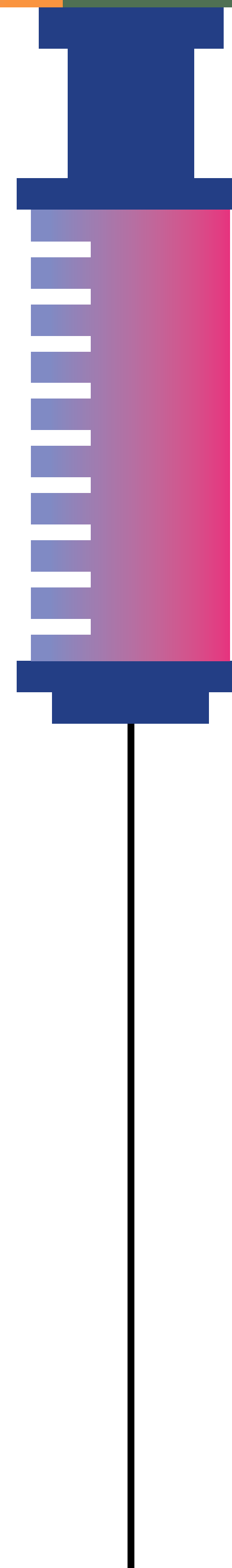
But despite the efforts of these players and despite the attention to global health security generated by COVID-19 and multiple recent Ebola epidemics, several prominent challenges remain. The world needs robust mechanisms to advance the development, manufacture, and distribution of safe, effective, and affordable vaccines against diseases of epidemic potential, especially those that threaten primarily poorer countries.

Challenges

Some of the biggest challenges in producing and delivering vaccines with unassured prospects for profitability include the high costs and long time horizons involved, substantial risk of R&D failure, potential constraints on demand, the inherent difficulties of collective financing, and issues of political economy.

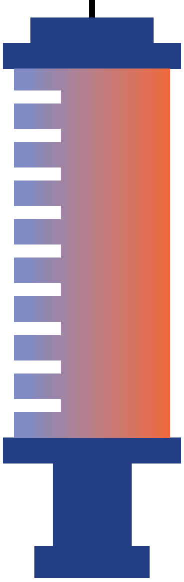
Vaccine R&D and manufacturing are expensive. Estimates of total R&D costs range from roughly $200 million to $500 million per successful vaccine, inclusive of sunk costs for failures. Building and maintaining the unique manufacturing facilities required to produce new vaccines at scale could add another $500 million to $1.5 billion to the total (Plotkin and others 2017).

In addition to being expensive, vaccines typically take many years to develop, test, manufacture at scale, and distribute. It is not uncommon for more than a decade to elapse between the inception of initial research and the end of phase III clinical trials, which are typically the last step in the development process before registration for use in the general population.



Sometimes requirements for recommendation for inclusion in national immunization programs delay population access to needed vaccines even further. A 2013 study (Blank and others 2013) found that, on average, 6.4 years elapsed between marketing authorization for new vaccines and the time at which population access was achieved in European countries.

The knowledge produced by vaccine R&D is a global public good.



These long time horizons and high investment costs are accompanied by substantial risk of failure for any given candidate in development, and often by considerable risk of unprofitability even for successful vaccines against the types of diseases discussed above. In addition to the constraint of low ability to pay in important markets, a vaccine may end up not being profitable because of competition from other vaccine developers and potential substitutes in the form of effective antimicrobials and other biomedical countermeasures, such as monoclonal antibodies. For individual vaccines against diseases of epidemic potential, demand clearly depends on whether outbreaks occur, assuming no advanced stockpiling agreements have been arranged. In recent years, growing vaccine hesitancy has also threatened to suppress demand.

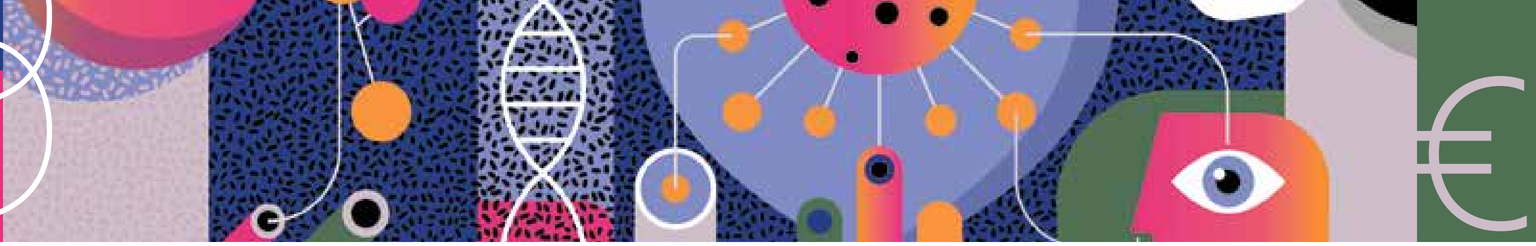
From an industry perspective, investing in a vaccine that meets these challenges is a daunting prospect. As demonstrated in the economics literature, private companies are inclined to delay investment in R&D projects with uncertain returns until the expected profits from the project exceed its cost plus the value of giving up the option to delay (Pindyck 1991). Consequently, when the value of a vaccine is particularly time sensitive—as is often the case for vaccines against emerging pathogens—governments or philanthropic organizations can speed development by providing guarantees that de-risk investment in successive stages of clinical trials and manufacturing capacity.

The challenge of motivating private investment in new vaccine development is compounded by the fact that the necessary expenditures carry substantial opportunity costs for big pharmaceutical companies. This is a result of the fact that existing market structures allow for these companies to earn patent-enabled excess profits by investing in their other product lines, such as treatments for chronic diseases.

The knowledge produced by vaccine R&D (including any formulas for new vaccines) is a global public good; in addition, immunization produces many positive externalities, including interruption of disease transmission, reduced rates of antimicrobial resistance, and potentially improved macroeconomic performance. Collective public financing of vaccine R&D and manufacturing capacity therefore represents an appealing alternative to private financing incentivized by patent-enabled profits. But this too presents difficulties. One important challenge is what is known in economics as the free rider problem: If the knowledge produced by vaccine R&D is openly available, then this will lower the incentive for individual countries to invest in its generation. Another major challenge has to do with the question of whether, relative to market forces, central decision-making represents an effective way to identify promising vaccine candidates.

Political realities also pose potential barriers to collective financing. Democratically elected officials may lack incentives to approve investment in projects such as vaccine platforms or reserved manufacturing capacity for epidemics that are unlikely to yield visible returns while they are in office. This disinclination may be heightened by a lack of public perception that epidemic threats are "real" when novel infectious diseases are not actively spreading. In many contexts, overall lack of trust in scientific and political authority also threatens to diminish public support for pandemic preparedness efforts, among other public health initiatives.

Also troubling is the rise of a phenomenon dubbed "vaccine nationalism" during the COVID-19 pandemic, in which some national authorities in high-income and upper-middle-income countries might have eschewed international cooperation in favor of betting on specific vaccine candidates over which they will have control should they prove to be successful. Vaccine nationalism threatens to prevent early doses of successful vaccines from going where they are most needed and would produce the greatest benefits.



Solutions

Fortunately, the world has several powerful tools at its disposal for addressing these challenges.

With respect to accelerating vaccine R&D and manufacturing, investment may be increased in cutting-edge vaccine platforms to accelerate development, such as the mRNA technology that some developers are currently using to produce COVID-19 vaccine candidates. Governments and international bodies such as the WHO can also work to formalize special regulatory pathways that allow for accelerated approval of vaccine candidates during epidemics, while ensuring that basic safety requirements are still met. To speed manufacturing, governments and international funders such as Gavi, the Gates Foundation, and the Wellcome Trust could contract with pharmaceutical companies for direct access to manufacturing facilities during emergencies.

An international body such as the WHO or a novel technical advisory council on infectious disease threats (Bloom and Cadarette 2019) could expand on the current blueprint list of priority pathogens to develop a global budget and action plan for financing relevant R&D and de-risking the manufacture of vaccines against those pathogens.

As for the collective financing of vaccines, more international cooperation is clearly needed. For example, consortia of wealthy countries, such as the Organisation for Economic Co-operation and Development, the Group of Seven, and the European Union, could agree to committing several years of earmarked funds for international organizations to finance the R&D, production, and purchase of vaccines against emerging pathogens. Increasing funding to CEPI, enlarging its pool of sponsors, and expanding its authority by sponsoring development of a greater number of vaccine candidates and supporting the vaccine developer organization into (and perhaps through) phase III trials is one possible concrete action along these lines.

Such collective efforts could improve the affordability of epidemic vaccines—and thereby facilitate access—for people in poor countries. Conditioning public grant funding of early R&D efforts on price ceilings or the possibility of compulsory licensing could serve a similar purpose.

Finally, with regard to political concerns, some policymakers may be persuaded by the argument that investing in vaccines and other preventive measures against diseases of epidemic potential amounts to a form of socially valuable insurance. Others may be persuaded that stockpiling vaccines against a potential epidemic is akin to having a standing army prepared to battle in a war yet unknown. Convincing the public of the value of these measures might help promote policymaker accountability.

Public intervention needed

Taken together, epidemic threats pose a huge risk to humanity and human progress. Vaccines represent one of the most valuable tools at our disposal for managing that risk.

Despite the high societal value of vaccination against diseases of epidemic potential, aspects of vaccine economics create challenges for achieving socially optimal levels of vaccine R&D, production, and uptake. Because vaccine R&D and the knowledge it creates are global public goods and because administered doses of vaccine have substantial positive externalities, the market tends to undersupply them. We therefore need public intervention to support R&D, manufacture, financing, and delivery—likely in the form of collective financing and the regulation of existing institutions.

COVID-19 is highlighting the fragility of our current systems for vaccine development, manufacture, and delivery. The world would do well to strengthen its systems before the next emerging pathogen gets a foothold in the human reservoir. FD

DAVID E. BLOOM is a professor of economics and demography at Harvard University's T.H. Chan School of Public Health, where **DANIEL CADARETTE** is a research assistant. **DANIEL L. TORTORICE** is an assistant professor of economics at the College of the Holy Cross.

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FOOD INSECURE

The viral pandemic is bringing a new global hunger crisis

CONFLICT, CLIMATE SHOCKS, and economic downturns have caused acute hunger among 135 million people worldwide in 2019, according to the *2020 Global Report on Food Crises*.

The report, now in its fourth year, documents a troubling trend: the number of people facing a food security crisis or worse continues to tick up from 108 million in 2016.

As the pandemic roils economies and strains public health systems, the impact is most prominent in vulnerable countries, where fears of a "hunger pandemic" are growing. More than half of those with acute food insecurity are in Africa, where conflict, weather events, and pest invasions have already taken a toll. In South Sudan and Yemen, more than half the people were in a food security crisis or worse as defined by the Integrated Food Security Phase Classification/Cadre Harmonisé (IPC/CH).

A Phase 3 food security crisis, on the IPC/CH scale, means households suffer serious malnutrition or can meet basic food needs only by depleting essential assets, which in turn requires urgent humanitarian action. Worse yet are an emergency and catastrophe/famine, Phases 4 and 5 on the scale, respectively.

The World Food Programme projects 270 million hungry people in countries where it operates before the end of the year, 82 percent more than before the pandemic.

Global stocks of most staple grains remain adequate, but the pandemic has disrupted food systems already under strain. The United Nations predicts new threats to food security as a result of collapse in demand for internationally produced agri-food products, sellers' and buyers' lack of access to small-scale local food markets, and loss of income from remittances and other sources. FD

Prepared by **ADAM BEHSUDI**, *IMF, based on the Food Security Information Network's 2020 Global Report on Food Crises.*

A growing food security crisis

135 million people

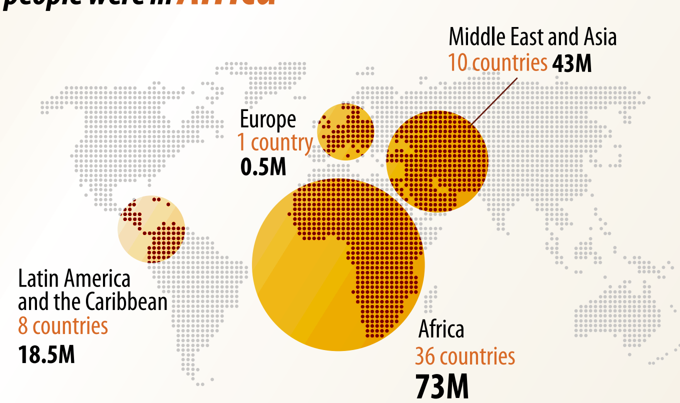
in **55 countries**
were in crisis or worse
(IPC/CH Phase 3 or above)

Numbers in previous years

2016	2017	2018
108 million people in **48** countries	**124** million people in **51** countries	**113** million people in **53** countries

Source: Food Security Information Network, *2020 Global Report on Food Crises.*

More than half of the affected people were in Africa

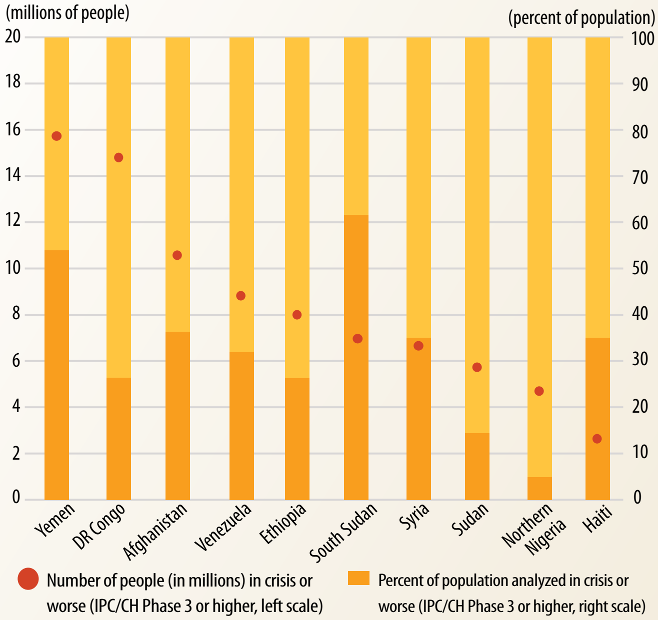


Source: Food Security Information Network, *2020 Global Report on Food Crises.*
Note: M = millions of people.

Conflict, weather, and economic shocks are the root cause

Top 10 crises

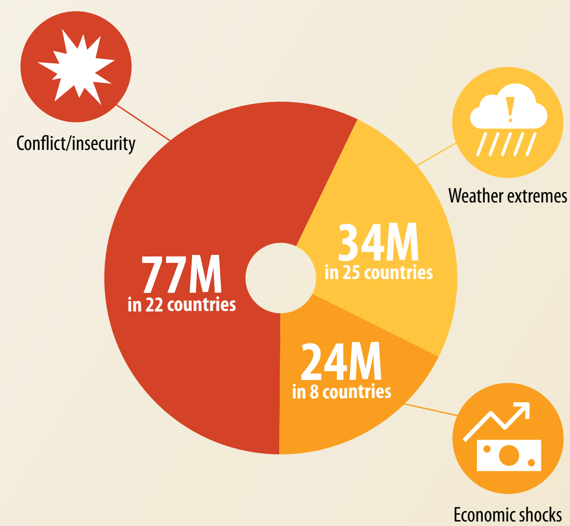
A number of regions were touched by 2019's 10 worst food crises, from Latin America to the Middle East.



Source: Food Security Information Network, *2020 Global Report on Food Crises*.
Note: DR Congo = Democratic Republic of the Congo.

Shifting sands

Conflict/insecurity was still the main driver of food crises in 2019, but weather extremes and economic shocks are becoming increasingly significant.

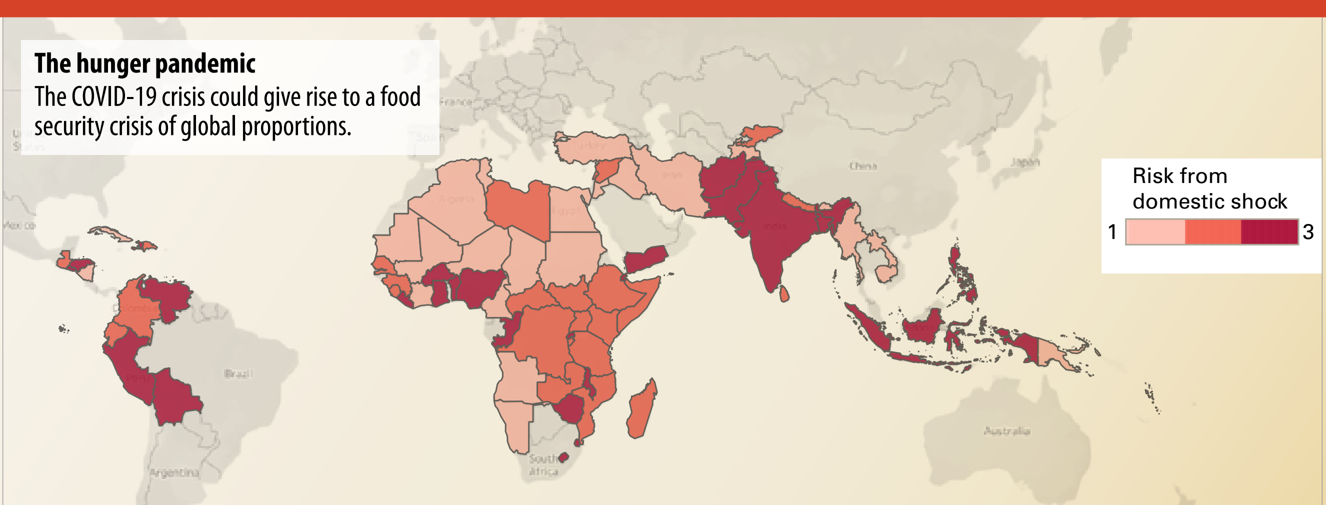


Source: Food Security Information Network, *2020 Global Report on Food Crises*.
Note: M = millions of people.

Widespread hunger expected in 2020

The hunger pandemic

The COVID-19 crisis could give rise to a food security crisis of global proportions.

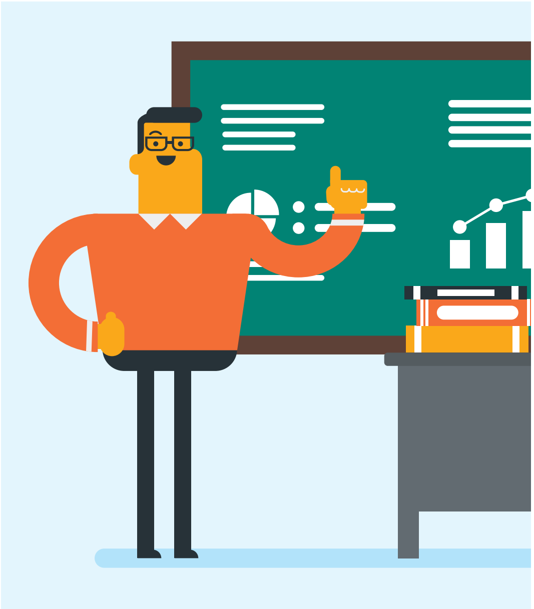


Source: Husain, Sandström, Greb, Agamile. 2020. "Economic and Food Security Implications of the COVID-19 Outbreak." World Food Programme.
Note: The map shows the risk of food insecurity in 2020 based on supply chain disruptions and income loss in 83 countries examined by the World Food Programme. Countries in dark red are at highest risk, medium red are medium risk, and light red are lowest risk. The countries in gray were not analyzed.

What Is Debt Sustainability?

Many factors go into assessing how much debt an economy can safely carry

Dalia Hakura



COUNTRIES INCUR DEBT by borrowing. Borrowing can enable countries to finance important development programs and projects—but, taken too far, the burden of debt repayment can overwhelm a country's finances, at worst leading to default.

Elevated debt in low-income countries and emerging market economies in recent years has raised concerns about countries' capacity to sustain these levels of debt. COVID-19 is adding to spending needs as countries seek to mitigate the health and economic effects of the crisis. The resulting rise in public debt will likely heighten the tension between meeting important development goals and containing debt vulnerabilities.

When debt is sustainable

A debt instrument is a financial claim that requires payment of interest, principal, or both by the debtor to the creditor at a future date. Countries incur debt to a wide range of creditors, including private bond holders, banks, other countries and their official lending institutions, and multilateral lenders such as the World Bank.

A country's public debt is considered sustainable if the government is able to meet all its current and future payment obligations without exceptional financial assistance or going into default. Analysts look at whether policies needed to stabilize debt are feasible and consistent with maintaining growth potential or development progress. When countries borrow from financial markets, risks associated with refinancing are important too.

The definition of public debt varies depending on its purpose. A commonly used narrow definition of public debt covers the budgetary central government. A broader definition is the general government (budgetary central government, state and local government, extrabudgetary units, and social security funds).

The broadest definition of public sector debt combines general government with public nonfinancial corporations and public financial corporations, including the central bank. It also covers publicly guaranteed debt (debt the public sector does not hold but has an obligation to cover) and external public debt (debt held by nonresidents of the country).

To properly assess a country's debt sustainability, it is important to cover all types of debt that pose a risk to a country's public finances.

Focusing only on a narrowly defined concept of *public* debt can lead to unexpected increases. For example, if a loss-making state-owned enterprise is not able to service its debt, the burden ultimately falls on the central government because such debt is *publicly guaranteed*, leading to unexpected weakening in a country's debt sustainability.

In advanced economies and emerging markets, debt sustainability analysis frequently—though by no means exclusively—focuses on the general government. However, in low-income countries nearly complete coverage of both *public* and *publicly guaranteed* debt is standard.

The holders of public debt also matter. Assessments of debt sustainability carried out by the IMF and World Bank cover both domestic and external public sector debt. However, sovereign credit rating agencies that focus on the risk of debt distress typically concentrate on market-based external public sector debt.

ART: ISTOCK / RASTUDIO

Why some debt is good

As noted above, public debt is one way to raise money for development. There are other ways to mobilize financing, such as by raising domestic revenue, improving the efficiency of spending, reducing corruption, and improving the business environment. But these may take time to materialize and may not be enough.

Countries should be prepared to keep debt sustainable and ensure it does not jeopardize growth and stability. Unsustainable debt can lead to debt distress—where a country is unable to fulfill its financial obligations and debt restructuring is required. Defaults can cause borrowing countries to lose market access and suffer higher borrowing costs, in addition to harming growth and investment.

Three key considerations stand out for countries deciding whether to take on new debt:

- New borrowing should be consistent with fiscal spending and deficit plans. The new borrowing should be carefully set to keep public debt on a sustainable path.
- Countries should take a comprehensive approach and compare the return from contracting debt with the cost of accumulating debt. Debt that finances productive social and infrastructure spending can lead to higher income that may ultimately offset the cost of debt service and help balance the risks to debt sustainability.
- Countries should make efforts to improve debt reporting and debt statistics in the context of comprehensive medium-term debt management strategies. Debt statistics should include coverage of public and publicly guaranteed debt that is as broad as possible, including debt of state-owned enterprises. Sharing this data with lenders can encourage responsible lending.

How much is too much?

Several factors determine how much debt a country can carry before the burden becomes too much. A country's debt-carrying capacity depends on several factors—among them the quality of institutions and debt management capacity, policies, and macroeconomic fundamentals. A country's capacity to carry debt can change over time, as it is also influenced by the global economic environment.

The frameworks the IMF uses to assess debt sustainability in low-income countries and countries with access to capital markets take into consideration individual countries' debt-carrying capacity. The assessments are calibrated in reference to previous episodes of debt distress for groups of countries with similar economic characteristics. The calibrations lead to debt sustainability analysis thresholds for key public debt indicators that signal higher risk if that indicator exceeds (or is expected to exceed) its threshold and can be either based on historical experience or convey information about the likelihood of future debt distress.

These frameworks consider the degree of uncertainty in the projections of the debt and debt service indicators. This is done through fan charts and stress tests. Because these assessments are based on projections of debt, interest, and key macroeconomic variables, both frameworks also rely on tools to help to gauge the realism of these forecasts. The IMF's approach to debt sustainability also leaves room for informed judgment.

Amid the pandemic, one question is whether debt-carrying capacities have improved sufficiently to handle elevated debt levels. After all, since the global financial crisis, low interest rates have arguably increased countries' capacity to borrow.

However, this does not necessarily translate into an ability to handle higher debt service. Even if interest rates are low and the availability of financing is ample, experience has shown that there are limits to countries' debt-carrying capacity—and that rising debt-service burdens need to be carefully managed.

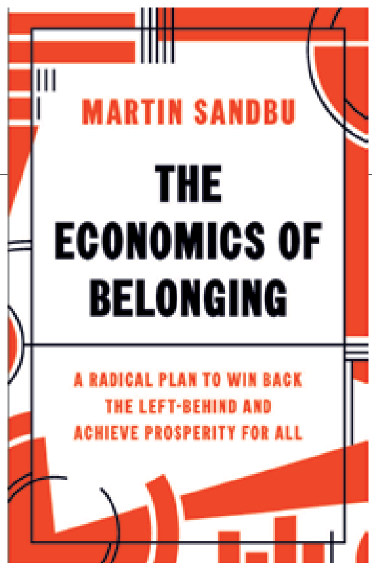
Another factor that will play a key role is growth. All else equal, higher growth improves debt dynamics. Indeed, most historical cases of significant debt reductions without restructuring have involved a surge in growth. In many of these cases, however, growth was driven by factors outside the countries' control, such as a global boom, the coming onstream of natural resources exports, or improved terms of trade (a country receiving relatively higher prices for its exports and paying relatively lower import prices).

Without such external impulses, stimulating growth domestically for a sustained period can be difficult, and can require new debt—for instance, to fund public investment. With the current uncertain outlook for growth, debt service needs to be carefully managed, and strengthening debt management and debt data should be top priorities. FD

DALIA HAKURA is a deputy division chief in the IMF's Strategy, Policy, and Review Department.

Winning Back Those Left Behind

MARTIN SANDBU sets out an ambitious policy agenda to recreate an economy where everyone feels they belong. Readers of his "Free Lunch" columns in the *Financial Times* will not be surprised by his sophisticated economic analysis and engaging presentation.



Martin Sandbu
The Economics of Belonging
Princeton University Press, Princeton, NJ, 2020, 296 pp., $24.95

The premise of the book is that behind today's political illiberalism and rejection of globalization is a widespread feeling that economic opportunities are reserved for an elite to which "normal people" do not belong.

Many influential authors—such as Pippa Norris and Ronald Inglehart, of *Cultural Backlash* fame—have presented evidence that individuals' political choices are better explained by personal values than by economic factors. More bluntly, according to these authors, people who vote against immigration prefer "their own kind." The implication is that globalization has proceeded too rapidly and needs to be slowed down to allow native populations to preserve their culture.

Sandbu points out, however, that economic drivers are more visible at the level of places than of individuals. Areas of economic decline have few immigrants—in fact, they are unable to attract newcomers from abroad—yet they turn against immigration. He argues that economic grievances express themselves as cultural backlash. People embrace forceful leaders because the illusion of collective control compensates for lack of personal control over their economic circumstances. If Sandbu's assessment that cultural backlash is ultimately caused by economic factors, then better economic policies have a fair chance of restoring the viability of the political and economic model based on democracy and globalization.

His proposed policy package pushes the boundaries of the economics consensus but is not going to shock those who have followed recent debates. Key elements include net wealth taxes, universal basic income (or negative income taxation), and carbon taxes and dividends. Drawing on positive lessons from his native Norway (and an intriguing comparison of automated car washes in Scandinavia and their labor-intensive equivalent in the United States), Sandbu calls for de facto minimum wages. These force employers to select more productive processes, rather than creating low-skill jobs. To avoid the risk of unemployment for the low skilled, he calls for higher spending on education and retraining, as well as forceful demand stimulus. Economists will enjoy debating the pros and cons of each of these policies. Sandbu reasonably points out that they complement one another and work only as a package.

This book is a thorough and compelling overview of recent economic analyses of the factors underlying the electoral travails of the democracy/globalization model. I would have liked the author to venture more into the art of political persuasion. Even if the ultimate source of discontent is economic, political messages that resonate with people's moral preferences stand a better chance of passing through parliament. Sandbu takes tentative steps in this direction. For example, he presents an intriguing right-wing perspective on universal basic income. He also points out that piecemeal reform efforts may be easier to block than his ambitious package. This reader hopes for more analysis of how to overcome political obstacles in Sandbu's next columns and books. FD

PAOLO MAURO, deputy director, IMF Fiscal Affairs Department

Bugs in the System

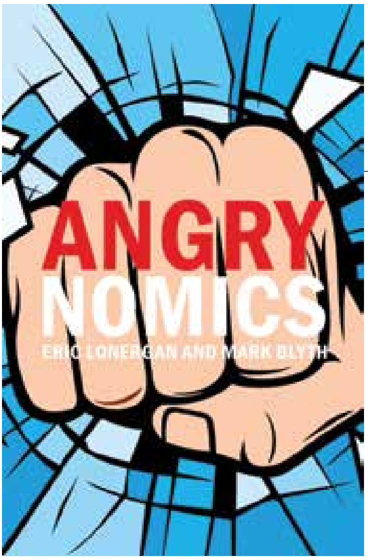
DESPITE WHAT its title may suggest, *Angrynomics* is about more than just anger and economics. In fact, it's composed of three interrelated topics: a history of capitalism over the past 150 years, an analysis of the current discontent (the anger), and a set of proposals for the future.

The book is a series of captivating short stories and "Platonic dialogues." Designed for the broader public, the work grounds itself in the academic research of many fields and authors, including economists Michal Kalecki and John Keynes, historian Karl Polanyi, psychiatrist Aaron Beck, and philosopher Martha Nussbaum. The authors need every ounce of this intellectual power to pursue their ambitious goal: unearthing the causes of current economic anger and proposing ideas on how to address it.

Eric Lonergan and Mark Blyth open by distinguishing "good" from "bad" public anger. So-called good anger stems from moral indignation against societal violators, while bad anger is an irrational, tribal energy manipulated for political ends by populist politicians. In the authors' estimation, recent public anger has been (mostly) good, due to macroeconomic trends (wage stagnation and inequality, asset bubbles) and indignation over the biased responses to the global financial crisis a decade ago. Although written before the global pandemic, the book also provides a framework to analyze the effects of the COVID-19 crisis, something that has only further inflated micro stressors on top of macro challenges.

The authors argue that throughout recent history the system of capitalism can be likened to that of a repeatedly crashing computer. But in contrast to previous systemic crises like the Great Depression or 1970s-era stagflation, the capitalist system never successfully rebooted after the global financial crisis. This means that while governments successfully repaired Capitalism 1.0 (pre–Great Depression) and Capitalism 2.0 (the Keynesian period), Capitalism 3.0 (our neoliberal period) was unable to reset after bugs crashed the system.

And what exactly were these software bugs? Wage stagnation, asset bubbles, excessive bank leverage, and inequality. The book highlights this well but could also have delved deeper into the changing political economy, since such outcomes are a product of the economic system itself, as well as the consequence of events that changed the political landscape.



Eric Lonergan and Mark Blyth
Angrynomics
Columbia University Press,
New York, NY, 2020, 192 pp., $30.00

The final section is dedicated to proposals, including helicopter money, dual interest rates, fiscal councils, raising money from licensing, sovereign wealth funds, and carbon taxes. Unfortunately, most of these measures have been proposed before and include well-known economic drawbacks. Yet the authors' most intriguing idea is the sovereign wealth fund, which they propose governments use more aggressively by harnessing low (or negative) interest rates on public bonds to invest in the stock market. The COVID-19 crisis offers a good opportunity for these funds because interest rates on safe assets are even lower and stock prices are depressed.

Overall, *Angrynomics* provides a good lens to understand the current political events in a broader context. It is also remarkably prescient, given that it outlines a conceptual framework of micro and macro stressors that may soon allow us to understand the implications of the unprecedented COVID-19 crisis. FD

ANTONIO SPILIMBERGO, deputy director, IMF Research Department

Making History

Tunisia honors the country's first female physician on its 10 dinar banknote

Melinda Weir

WHEN A TEAM from the Central Bank of Tunisia looked into redesigning some of their banknotes a few years ago, they knew they wanted to honor a contemporary figure on the 10 dinar note, someone who had made significant contributions to their country—who was, as Bank Governor Marouane El Abassi put it, "a bearer of Tunisian expertise."

They selected the late Tawhida Ben Cheikh (1909–2010), Tunisia's trailblazing first female physician, as the face of the new banknote, which debuted in spring 2020.

Among many firsts, Ben Cheikh was the first female student in Tunisia to receive a university degree, in 1928, and reportedly was the first North African Muslim woman to earn a medical degree (in 1936, from the University of Paris). She is thought to be the first modern female doctor not only in Tunisia but in the Arab world.

Ben Cheikh has made history again, albeit posthumously, as the second woman to have her likeness featured on Tunisian currency. She follows Elissa (Dido), the legendary founder and queen of ancient Carthage, who first appeared on the 10 dinar banknote in 2005. The new banknote is also reportedly the first in the world to honor a female physician.

"I thought clearly that we need someone from the contemporary era," said El Abassi, adding that they were not explicitly looking for a female honoree. "After the revolution of a decade ago, we wanted the banknotes to be a mirror of the whole country."

PHOTOS: COURTESY OF THE CENTRAL BANK OF TUNISIA

Tunisia's new 10 dinar banknotes debuted in spring 2020. They feature a portrait of Dr. Tawhida Ben Cheikh and intricate Berber pottery and jewelry.

Influential

After her return to Tunis, Ben Cheikh opened a private medical clinic that treated patients regardless of nationality or ability to pay. The only female doctor in the country for some years, she became influential in Tunisian medicine, family planning practices, and legislation; as an obstetrician-gynecologist she founded the country's first family planning clinic and led campaigns around access to contraception and abortion, which was first legalized to a limited degree in 1965. Ben Cheikh was the first female doctor accepted in the National Council of the Order of Physicians of Tunisia. Later in her career she served as vice president of the Tunisian Red Crescent.

Born into a conservative, well-to-do family, Ben Cheikh credited the support of her widowed mother for her ability to achieve high levels of education, despite opposition from male

Tawhida Ben Cheikh and other members of AEMNA (Association of North African Muslim Students) in Paris, 1930. Ben Cheikh would go on to become the first female physician in Tunisia and the Arab world, and later vice president of the Tunisian Red Crescent.

relatives, at a time when such opportunities for women in colonial Tunisia were rare. Nearly a century later, female students are fully represented at Tunisian colleges and universities, according to El Abassi, with women comprising over half the student population. In 2018, Tunisia was designated the "Capital of Arab Women 2018–2019" by the Arab League in recognition of efforts in the country to promote the status of women.

The vivid blue 10 dinar banknotes honoring Ben Cheikh, designed by Ali Fakhet, a Tunisian artist, feature

- A portrait of Ben Cheikh on the front
- Images of handmade, intricately designed Berber pottery and jewelry on the back
- Security details such as three-dimensional threads, iridescent coating, micro-text printing, circles with a spinning effect, translucent features, and fluorescent fibers that glow when exposed to ultraviolet rays

Timely tribute

In addition to honoring the legacy of Ben Cheikh and the generations of women she inspired, the new banknote is meant to celebrate the contributions of all Tunisian women, according to El Abassi.

Although designed before the COVID-19 pandemic struck, the new banknote pays tribute to Tunisia's doctors and other essential—and mostly female—health care workers during the crisis. "This was a very good message to the doctors and health care workers who are fighting COVID-19 in Tunisia."

Public reception of the new banknote has been positive, El Abassi said. To better reach younger Tunisians, the central bank worked with a local start-up to develop an augmented reality app, "Flouss," to tell the stories behind their banknotes. FD

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Finance & Development, September 2020

MFIEA2020003