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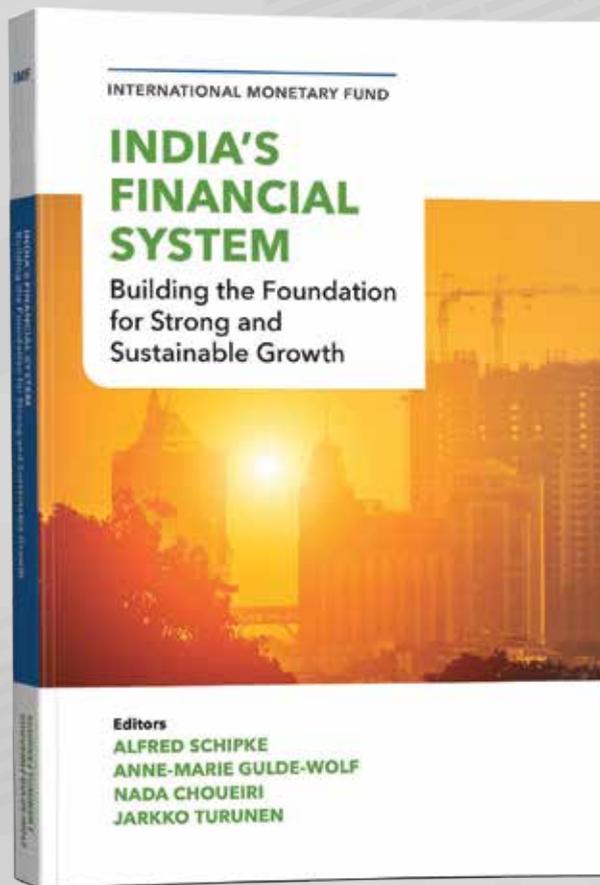
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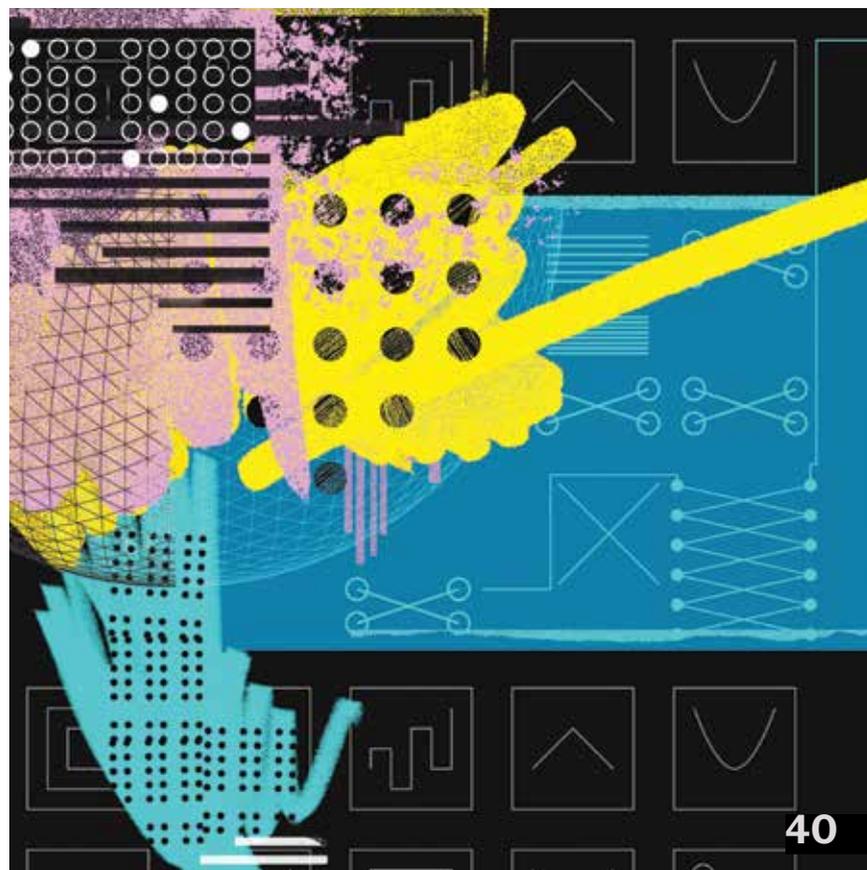
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Editor's Letter

Economics That's More Human

JOHN MAYNARD KEYNES, memorializing the death of his mentor Alfred Marshall a century ago, wrote that the “master-economist must possess a rare combination of gifts.... He must be mathematician, historian, statesman, philosopher.” Keynes might have been describing himself. He considered economics a moral science that must draw on a wide culture while keeping an “open mind to the shifting picture of experience.”

Today, the world urgently needs that rare combination Keynes described to guide the way through disruptions from climate change, artificial intelligence, demographic change, social and economic inequality, and geopolitical conflicts. This is particularly true given growing disenchantment with the economics profession and calls for the discipline to change to better reflect individual and societal values.

Extensive professional soul-searching since the global financial crisis of 2008 has focused on how economics can better integrate social sciences and elevate welfare and distributional issues. There has been much rethinking of macroeconomics and the design of policy approaches. And there is a growing consensus that the profession must be open to new ideas and frameworks if it hopes to solve the world's biggest problems.

This issue of F&D takes a fresh look at the discipline. We invited prominent economists with different perspectives to tell us how the profession can become better at answering 21st century challenges.

Of course, economists have embraced new thinking before, as the Keynesian revolution itself demonstrates. Author Niall Kishtainy provides a fascinating account of the forces that have shaped the discipline since Adam Smith's *The Wealth of Nations*, the 18th century opus that largely launched modern economics.

Nobel laureate Angus Deaton describes how his own views on such topics as labor unions, free trade, and immigration have evolved over half a century. He writes that mainstream economists must revisit their assumptions, cast a more critical eye on the influence of power, stop prioritizing efficiency above all else, and be humbler.

Jayati Ghosh of the University of Massachusetts, Amherst, laments the profession's lack of diversity—ethnic, racial, and gender. This deprives economics of new ideas, new problems to work on, and new talent, she suggests.



“Economics must reflect the complexity of economic reality and values of our time.”

Harvard's Dani Rodrik contends that existing policy models are inadequate to address such challenges as climate change, inclusion, and economic development. Economics must expand its collective imagination to tailor solutions to differing economic and political contexts. For example, Princeton's Atif Mian shows why new approaches are needed to break the debt supercycle, which poses a grave danger to the global economy.

How economics is taught is critical. The curriculum must be made more relevant to real-life problems, going well beyond the traditional concern with efficiency, Wendy Carlin of University College London writes, echoing Deaton. Ethical considerations are unavoidable, especially those of fairness and solidarity, she says.

Unsurprisingly, not everyone agrees that we need novel economic ideas. Stanford's John Cochrane argues that the solutions to today's challenges lie in the revival of evergreen ideas, including supply-side incentives and fiscal policy reforms.

There is much more to explore in this issue, including contributions on behavioral economics, political economy, and how wages are set. We also profile Betsey Stevenson, a noted labor economist, who has helped lead a rethinking of economics.

The implication from all of these perspectives is that economics must be open to institutional alternatives and experimentation and reflect the complexity of economic reality and values of our time. As Keynes himself observed, “The difficulty lies not so much in developing new ideas as in escaping from old ones.” **F&D**

Gita Bhatt, editor-in-chief

Kaleidoscope

A global view, in brief



THE BIG PICTURE: For centuries, Central Asia has been an important international crossroads traversed by many people, from the nomads of the steppe to the Silk Road traders. Last year the IMF opened a new regional capacity development center in Almaty, Kazakhstan. Serving a region of close to 100 million people that also includes the Caucasus and Mongolia, the center helps officials hone their skills in macroeconomic forecasting and policy-scenario analysis as well as new areas such as central bank digital currencies and transitioning to a green economy. Above, a woman walks down a tree-lined street in Astana, Kazakhstan. IMF Photo/G-Jun Yam.

New IMF Study on AI

ARTIFICIAL INTELLIGENCE has brought our world to the brink of a revolution that could jumpstart productivity, boost economic growth, and raise incomes. It could also replace jobs and deepen inequality. IMF staff gauge these prospects in a new study of how AI may affect labor markets, including how it may

make some jobs obsolete while complementing human work in other areas. “Gen-AI: Artificial Intelligence and the Future of Work” shows that almost 40 percent of global employment is exposed to AI—and about 60 percent of jobs in advanced economies. Roughly half the exposed jobs may benefit from AI integration, enhancing productivity. For the other half, AI applications may perform key tasks now done by people, which could lower labor demand. Some of these jobs may disappear. However, with the AI era upon us, it’s still within our power to ensure that it brings prosperity for all.

“**40 percent of jobs globally are vulnerable to AI.**”

—IMF First Deputy Managing Director Gita Gopinath at the World Economic Forum in Davos, Switzerland.



Overheard



“The profession knows and understands many things. Yet today we are in some disarray. We did not collectively predict the financial crisis and, worse still, we may have contributed to it through an overenthusiastic belief in the efficacy of markets—especially financial markets, whose structure and implications we understood less well than we thought.”

—Angus Deaton, Princeton University (see “How Economics Must Change” in this issue of F&D).



“[Economists] are the most tribal scientists you can think of; they quote each other, men more than women, by the way. They don’t go beyond that world because they feel comfortable there, and maybe models have something to do with it. We need to bring in people who are not members of the tribe.”

—Christine Lagarde, President of the European Central Bank, at the World Economic Forum in Davos, Switzerland.



IN THE NEWS: A rare and welcome rainy day in the United Arab Emirates, where IMF Managing Director Kristalina Georgieva traveled in February to attend the World Governments Summit. In Dubai, she also delivered a speech at the Arab Fiscal Forum on the theme of resilience: “At a time of economic challenges, geopolitical tension, and war, it is so important that we plant seeds now—of growth and cooperation, of peace and prosperity.” *IMF Photo/Christophe Viseux.*

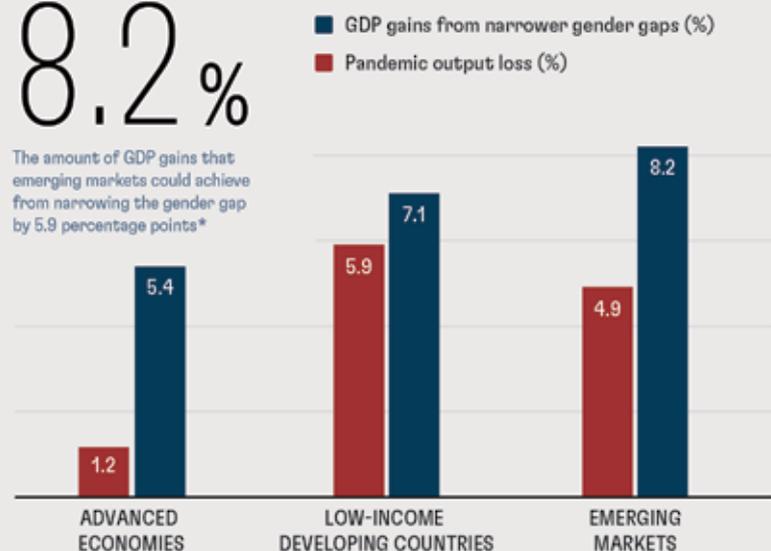


By the numbers

Narrowing gender gaps in labor force participation could more than offset pandemic scarring and offer new sources of growth.

8.2%

The amount of GDP gains that emerging markets could achieve from narrowing the gender gap by 5.9 percentage points*



SOURCE: IMF staff calculations.

NOTE: *The rate of improvement achieved by the top 5 percent of emerging markets during 2014–19.

Back to Basics



What Is Inclusive Growth?

Proponents aim to create societies that are free, equal, and wealthy

Ruchir Agarwal

WHAT IS THE ROLE OF government in modern economies? Is it possible to create a more equal society without sacrificing economic freedom or wealth? Should we emphasize equal opportunities or equal outcomes? The idea of “inclusive growth” seeks to strike this balance.

Since the term can be open to interpretation, let me offer a definition: inclusive growth seeks to boost national wealth and well-being while reducing poverty, ensuring equity across generations, and preserving economic freedoms.

Different interpretations of freedom exist. Libertarians advocate minimal state intervention in private lives and free markets. By contrast, the capabilities approach, championed by Nobel laureate Amartya Sen, focuses not just on the absence of restrictions but also on the presence of opportunities to be healthy, educated, and secure. Each interpretation sets a different standard for what it means to be a “good society” and envisions a distinct role for the government in achieving this.

Even renowned advocates of freedom, from John Locke to Adam Smith and John Stuart Mill, recognized the necessity of some government intervention. Their different views bring us to the heart of the debate on what it means to be a free and equal society. Imagine that you’re at the helm of designing a society. How would you strike a balance between these principles? Every policy choice involves a trade-off.

Wealth redistribution

First, let’s evaluate your preferences for wealth redistribution. How would you ensure better living standards while preserving economic freedom and growth? Imagine a scenario with a flat income tax of 30 percent on all. Now consider a proposal to increase the tax rate for the richest to 50 percent. Do you support it?

If you oppose the tax increase because you believe the richest are already contributing their fair share and that higher taxes might slow economic growth, your view represents a more conservative approach to inclu-

sive growth. This stance prioritizes economic freedom and economic growth, favoring a uniform tax on all.

If you agree with the tax hike on the wealthy, provided the extra revenue targets poverty reduction, you take a broader perspective on inclusive growth. This viewpoint is willing to trade some economic freedom to support targeted anti-poverty initiatives.

If you support the tax increase to reduce wealth inequality, regardless of whether the revenue aids anti-poverty programs, it aligns with a progressive stance. It pushes beyond traditional inclusive growth boundaries.

Some progressive economists, such as Dani Rodrik, focus on the concentration of wealth and innovation in selected firms and cities, not just individuals. They observe that this leads to economic exclusion for many. Their solutions include more labor rights, antitrust laws, higher minimum wages, subsidies, and other industrial policies to counter corporate dominance, along with government investments targeting job creation in neglected areas. Others, including me, worry about the growth effects of such industrial policies, and the ability of governments to implement them, and fear that they might lead to a global shift toward protectionist trade.

Future generations

Next, let’s consider how our actions today affect future generations, including those not yet born, and other species.

How far should government intervention go to ensure a prosperous future for our children, grandchildren, and beyond? Should we extend this intervention to conservation of the environment and wildlife, even if it doesn’t yield direct benefits for humans? These questions are vital in shaping the world we leave behind and defining the government’s role in our planet’s ecosystem.

Let’s examine this through the lens of climate change. Consider a carbon tax proposal of \$35 a metric ton, designed to significantly cut future carbon emissions. This would raise costs on electricity, gasoline, and heating by about 20 percent for everyone. What’s your stance?

If you oppose the tax, you likely prioritize current economic growth and freedoms, skeptical of sacrificing present resources for uncertain future gains. This perspective emphasizes the immediate economic impact, particularly on poorer households, mirroring the stance of some developing economies hesitant to implement higher carbon taxes now.

Supporting the tax, meanwhile, can reflect a belief in prioritizing the well-being of future generations. This stance aligns with existing policies for carbon pricing considered by several advanced economies, focusing on safeguarding the freedoms and choices of those yet to come over today's economic comfort.

Endorsing the tax might stem from a commitment to the broader health of the planet, valuing the intrinsic worth of nature and biodiversity. This view, often associated with green advocacy, goes beyond human-centric benefits.

These options also highlight the complexity of inclusive growth, which aims to balance the needs of both current and future generations. Even for those typically against higher taxes, concern for existential threats and long-term sustainability can shift perspectives. It's not about ecological impact but about preserving critical resources and a healthy environment for those yet to come.

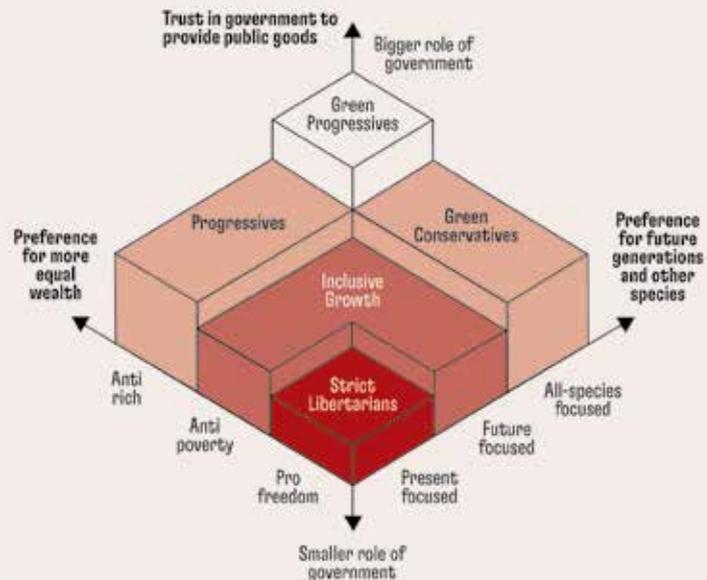
Public goods

Next, let's consider the role of government in providing public goods such as education, health care, and nonmarket well-being, which includes elements vital for a good life, such as clean air, not measured in GDP. Classical economists understood market failures—when individual choices alone don't always lead to the best outcomes. This can happen as a result of externalities—for example, when polluters don't pay for the environmental damage they cause—or when there's not enough investment in education and health care for everyone's benefit. In developing economies, the need for government intervention may be even more pronounced, as a result of poor infrastructure and more people without access to quality education and health care.

CHART 1

Economic values

Differing views for a free, equal, and wealthy society.



Some people trust the government to provide these public goods, believing it to be more capable than markets of handling certain problems. However, others are skeptical of too much government involvement and worry about government failure and corruption. They argue that good fiscal policy needs rational, unbiased policymakers, which isn't always the case. Critics also fear that government efforts might backfire, making problems worse instead of better. Some go further to suggest market-based solutions, like Nobel laureate Ronald Coase's idea that clear property rights and minimal transaction costs can lead to efficient outcomes without government help.

Where do you stand? If you're for more government intervention, you trust the government to fix market imbalances and achieve social goals. But if you're wary of government failure, you prefer to let the market work with minimal interference from the government, questioning its effectiveness and fearing the risks of too much control. This choice reflects your level of trust in government versus your faith in market-based solutions.

Inclusive growth

Unlike policies aimed at directly reducing wealth inequality across individuals or regions, often associated with progressive ideologies, inclusive growth focuses on creating a level playing field. It emphasizes the idea that people's futures should be determined by their talent and effort, not predestined by their background. This approach envisions a society where success is based on merit and ability rather than the circumstances of birth.

Overall, inclusive growth embodies the principle that wealth creation, economic freedom, and equal opportunity can coexist. It promotes the notion that a society can be free and equal while also pursuing long-term economic growth and well-being. And the government's role in this balance will depend on individual values, trust in political actors, and local realities. **F&D**

RUCHIR AGARWAL is a research fellow at the Harvard Kennedy School and cofounder of the Global Talent Network and the Global Talent Lab.

Point of View

Addressing Challenges of a New Era



Dani Rodrik

The most pressing economic problems of our time require pragmatic remedies closely tailored to context



In recent decades, mainstream economics has become closely associated with a particular set of policies labeled “neoliberalism.” The neoliberal policy paradigm favors expanding the scope of markets (including global markets) and restricting the role of government action. Today it is widely recognized that this approach failed in a number of important respects. It widened inequality within nations, did little to promote the climate transition, and created blind spots ranging from global public health to supply-chain resilience.

The neoliberal era did witness a major achievement. Record economic growth in many developing economies, including the most populous, brought a massive reduction in extreme poverty around the world. Yet the countries that did best during this period, such as China, hardly subscribed to neoliberal rules. They relied on industrial policies, state enterprises, and capital controls as much as they did on freer markets. Meanwhile, the performance of countries that adhered most closely to the neoliberal playbook, such as Mexico, was abysmal.

Was economics responsible for neoliberalism? Most of us know that economics is a way of thinking rather than a set of policy recommendations. The tools of contemporary economics yield very few generalizations that offer immediate policy guidance. First-order principles—such as thinking at the margin, aligning private incentives with social costs and benefits, fiscal sustainability, and sound money—are essentially abstract ideas that do not map into unique remedies.

China itself offers the best illustration of the plasticity of economic principles. Few would dispute that the Chinese government took advantage of markets, private incentives, and globalization. Yet it did so through unconventional innovations—the household responsibility system, dual-track pricing, township-and-village enterprises, special economic zones—that would be unrecognizable in standard Western policy recommendations but were needed to relax domestic political and second-best constraints.

In economics, the valid answer to almost any policy question is “it depends.” Economic analysis comes into its own precisely when it scrutinizes this contextual dependence—how and why differences in the economic environment affect outcomes, such as the consequences of policies. The original sin of the neoliberal paradigm was the belief in a few simple, universal rules

of thumb that could be applied everywhere. If neoliberalism was economics in action, it was bad economics that was on display.

New challenges, new models

Better economics must start from the premise that our existing policy models are inadequate for the range and magnitude of challenges we face. Economists will have to address these challenges imaginatively, applying the tools of their trade in a way that takes into account differences in economic and political context in different parts of the world.

The most fundamental challenge is the existential threat posed by climate change. In the economist's ideal world, the solution would be global coordination around a three-pronged approach: a high enough global carbon price (or equivalent cap-and-trade system), global subsidies for innovation in green technologies, and a substantial flow of financial resources to developing economies. The real world, organized around individual sovereign nations, is very unlikely to deliver anything approaching this first-best solution.

As recent history shows, the adoption of green policies will require messy domestic political bargains. Each nation will prioritize its own commercial considerations while bringing opponents and potential losers from green policies on board. China's industrial policies to promote solar and wind have been much derided by competitors but have done the world a great service by bringing renewables prices down sharply. The Inflation Reduction Act in the US and the Carbon Border Adjustment Mechanism in the EU are both predicated on domestic political bargains that entail some shifting of the costs to other countries. Yet they are likely to do more for the green transition than any global deal will likely achieve. If they are to be useful, economists will have to stop being first-best purists, or focusing simply on presenting the efficiency costs of such policies. They will need to be imaginative in crafting solutions to the climate crisis that address second-best and political constraints.

“Economics can help only if it expands our collective imagination instead of reining it in.”

If climate change is the most severe threat to our physical environment, the erosion of the middle class is the most significant threat to our social environment. Healthy societies and polities require a broad-based middle class. Historically, well-paying, secure jobs in manufacturing and related services have been the foundation of a growing middle class. But recent decades have not been kind to the middle classes in advanced economies. Hyperglobalization, automation, skill-biased technological change, and austerity policies have combined to produce labor market polarization, or a shortage of good jobs.

Addressing the problem of good jobs will require policies that go beyond those of the traditional welfare state. Our approach must put creation of good jobs front and center, focusing on the demand side of labor markets (firms and technologies) as well as the supply side (skills, training). Policies will have to target services in particular, since that is where the bulk of employment opportunities will be generated in the future. And they must be oriented toward productivity, since higher productivity is the sine qua non of good jobs for less-educated workers and a necessary complement to minimum wages and labor regulations. Such an approach calls for experimentation with novel policies—the development of what are effectively industrial policies for labor-absorbing services.

Developing economies have their own version of this problem, which

manifests in the form of premature deindustrialization. Competing successfully in global markets calls for technologies that are increasingly skill- and capital-intensive. As a result, peak levels of formal employment in manufacturing are being reached at much lower levels of income, and employment deindustrialization sets in much earlier in the process of development. Premature deindustrialization is not just a social problem; it is a growth problem. It prevents today's low-income countries from replicating the export-oriented industrialization strategies of the past. Economic growth through integration into world markets no longer works when the tradable sectors are highly demanding in terms of skills and capital.

The implication is that developing economies must in the future rely less on industrialization and more on productive employment in services, just like advanced economies. We have considerable experience when it comes to the promotion of industrialization. Services-oriented development strategies, especially with regard to nontradable services dominated by very small firms, will require entirely new, untested policies. Once again, economists must be open-minded and innovative.

Globalization's future

Finally, we need a new model of globalization. Hyperglobalization has been undermined by distributional struggles, the new emphasis on resilience, and the rise of geopolitical competition between the US and China. Inevitably, we are in the midst of a rebalancing between the demands of the global economy and competing economic, social, and political obligations at home. Although many worry about a new era of rising protectionism and the prospect of an inhospitable global environment, the outcome need not be all bad. During the Bretton Woods period, national economic management was significantly less restrained by global rules and the demands of global markets. Yet international trade and long-term investment rose significantly, and countries that pursued appropriate economic strategies, such as the

East Asian Tigers, did exceptionally well despite higher levels of protection in advanced economy markets.

A similar outcome is possible today too, provided the major powers do not prioritize geopolitics to such an extent that they start to view the global economy through a purely zero-sum lens. Here too, economics can play a constructive role. Instead of expressing nostalgia for a bygone era that produced mixed results and was never sustainable in the first place, economists can help design a new set of rules for the global economy that assist in the rebalancing. In particular, they can craft policies to help governments attend to their domestic economic, social, and environmental agendas while avoiding explicitly beggar-thy-neighbor policies. They can develop new principles that clarify the distinction between domains where global cooperation is necessary and those where national action should take priority.

A useful starting point is the trade-off between the gains from trade and the gains from national institutional diversity. Maximizing one undermines the other. In economics, “corner solutions” are rarely optimal, meaning that reasonable outcomes will involve sacrificing some of both sorts of gains. How these contending objectives should be balanced in trade, finance, and the digital economy is a challenging question on which economists could shed much light.

Economists who want to be relevant and useful must offer concrete solutions to the central problems of our time: speeding the climate transition, creating inclusive economies, promoting economic development in poorer nations. But they must avoid cookie-cutter Econ 101 solutions. Their discipline offers much more than rules of thumb. Economics can help only if it expands our collective imagination instead of reining it in. **F&D**

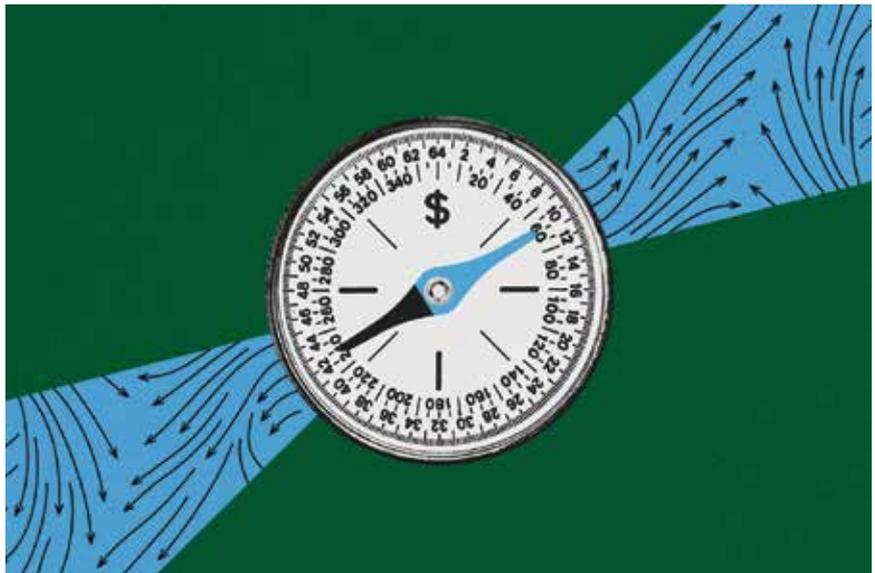
DANI RODRIK is the Ford Foundation Professor of International Political Economy at Harvard's John F. Kennedy School of Government and past president of the International Economic Association.

A New Compass for Economics



Kate Raworth

Economic renewal must begin with the goal of human flourishing on a thriving, living planet



If economics is to be a tool for moving human societies away from endemic crisis toward a resilient and thriving future, then its renewal starts with a new compass and map that are fit for our times.

As John Maynard Keynes wrote in 1938, “Economics is the science of thinking in terms of models joined to the art of choosing models which are relevant to the contemporary world.” It’s ironic that some of the most profoundly influential models still shaping economic thought today were created in Keynes’ own era. If he were alive this century—and were witness to the scale of social and ecological crises that we currently face—he would no doubt be urging his fellow economists to create new models that reflect the knowledge, reality, and values of our times. He would be right.

Last century, when postwar economic thought adopted growth as its de facto goal, GDP became the economist’s compass: it depicted progress as an exponential curve, measured with the single metric of monetary value in pursuit of endless increase, no matter how rich a nation

already was. The impact of wealthy countries continuing to prioritize GDP growth over tackling inequality and protecting the living world is now all too clear.

This century, we need a far more ambitious and holistic goal: human flourishing on a thriving, living planet. And one compass that can guide us turns out to look like a doughnut (see Chart 1). It prioritizes the essential needs and rights of every person—from food, water, and health to decent work and gender equality. At the same time, it recognizes that the health of all life depends upon protecting Earth’s life-supporting systems: a stable climate, fertile soil, healthy oceans, and a protective ozone layer. In the simplest terms, the doughnut enables humanity to thrive between a social foundation and an ecological ceiling—in other words, meeting the needs of all people within the means of the living planet.

Embracing such a compass replaces the single GDP metric with a dashboard of diverse social and ecological metrics. It entails redefining success not as endless growth but rather as thriving in balance between social and ecological boundaries. This calls for a profound paradigm shift. Given that no economy in the world has met the needs of all its people within the means of the living planet (Costa Rica is the closest to doing so), no economy should yet consider itself “developed.”

If the doughnut is a compass for 21st century progress, what kind of macroeconomic worldview would give humanity a chance of getting there? Back in the 1940s, when Paul Samuelson first drew the iconic circular flow diagram—depicting the monetary flows that circulate between households and firms, and banks and governments—he essentially defined the model of the macroeconomy that would come to dominate 20th century economic thinking. This model is still applied as a foundational conceptual map of economic systems today.

Yet, in the words of the systems thinker John Sterman, “The most important assumptions of a model are not in the equations, but what’s *not* in them; not in the documentation, but unstated; not in the variables on the

computer screen, but in the blank spaces around them.” What is not seen in the blank spaces around Samuelson’s circular flow model are the vast quantities of energy, materials, and waste involved in economic activity. Leaving these invisible has proved profoundly dangerous for life on Earth.

A 21st century map must provide a far more holistic and biocentric starting point by recognizing that the economy is both embedded within, and dependent upon, the living world.

The seemingly obvious step of depicting the economy as a subsystem of Earth’s biosphere is also one of the most radical and essential acts for renewing economics this century. It calls on all economic analysis to recognize that the economy is an open system—with large

inflows and outflows of both energy and matter—within our planet’s unique and delicately balanced biosphere.

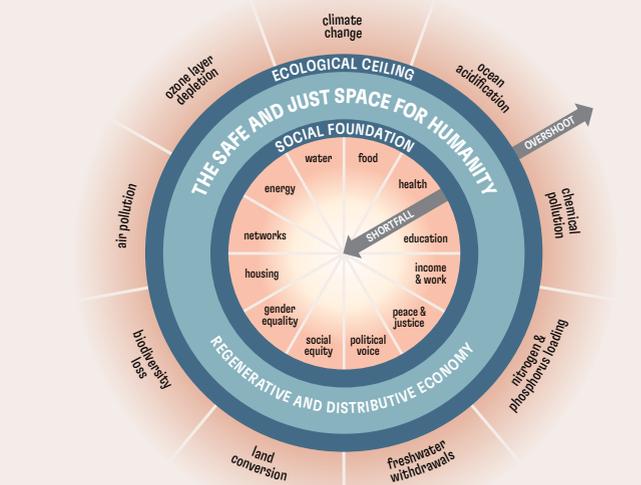
From this perspective it becomes clear that energy, not money, is the fundamental currency of life, underpinning all human, ecological, and industrial systems. Energy dependence then lies at the heart of the economist’s understanding. We must recognize that humanity’s continual use of resources puts intense pressure on planetary boundaries, creating a high risk of undermining the ecological stability on which human and all life fundamentally depends.

When we situate the economy within the living world in this way, the 20th century pursuit of endless growth sits in sharp tension with empirical evidence to date. The ambition of decoupling

CHART 1

Doughnut of social and planetary boundaries

The economy must meet the needs of the people without overshooting the Earth’s ecological ceiling.



SOURCE: Raworth, K. 2017. *Doughnut Economics: Seven Ways to Think Like a 21st Century Economist*. London: Penguin Random House.

“Facing up to the ecological consequences of economic activity is now a critical moral obligation.”

consumption-based carbon emissions and material use from GDP growth in today's high-income economies is not happening at anywhere near the speed and scale required to avert critical tipping points.

This compels us to question the limits to growth and explore postgrowth economic possibilities, particularly in wealthy economies. Facing up to the ecological consequences of economic activity is now a critical moral obligation.

A new compass for economic thought also entails taking a more holistic view of the range of economic activity that provides for people's essential needs and wants. Mainstream economic thought has been dominated for over a century by an ideological boxing match over the respective roles of the market and the state. Both sides have lost sight of two other critical sources of provisioning: the household and the commons. Much of the value they generate is not reflected in GDP, but they are a key part of the embedded economy model because the value they produce is critical for human well-being.

Take, for example, the unpaid care-giving done predominantly by women in the home, which is essential to well-being and systematically subsidizes paid work. Similarly, the commons can be a highly effective means of provisioning goods and services whose value is not reflected in monetary exchange—from open-source software to Wikipedia to transnational watershed management.

Economic renewal must begin with the goal of human flourishing on a thriving, living planet. If we hope to get there we need macroeconomic models that recognize the economy as a subsystem of the living world. Within it, finance must be redesigned to be in service to the real economy, in service to life. This constitutes a conceptual revolution, and it is essential. **F&D**

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The Social Costs of Price

Katharina Pistor



Price-tag policymaking doesn't measure the things that matter to people

Rule by price has become fashionable, not only in economics but in public policy too. Putting a price tag on policies—by measuring in one unit the benefits for target groups and the costs others might bear—projects an aura of objectivity and transparency.

The aim is to enable policymakers to choose rationally among different ways to solve the same problem: compare different problems and their policy solutions simply according to their relative cost-effectiveness in dollars or some other currency. Once everything is measured and comparable, it's almost possible to dispense with politics.

The messiness of politics, with the endless struggles to find common ground among inherently incommensurate objectives, can be turned into a simple spreadsheet from which to choose the most cost-effective option. Government is becoming governance by price tags.

Ideal-type markets, the kind found only in textbooks, serve as the model. The idea is that trading reveals the value of objects to buyers and sellers and that the price therefore holds all the relevant information. Of course, this is true only in efficient markets—markets without information costs and transaction costs, where no transaction

is feasible that would benefit one person without making another worse off.

Pareto efficiency, as this state of equilibrium is known, is unachievable in the real world. This is why for most purposes it has been replaced with a simple net benefit analysis. As long as the net benefits exceed the net costs, a policy is worth pursuing. But measuring all costs and all benefits, and placing a price tag on each, is a tall order. For most activities and resources, prices do not exist or are not observable. They must be actively constructed based on assumptions that are necessarily incomplete, or biased in favor of ease of measurability, and that are often outright wrong.

False assumptions

Even financial markets, for which the efficiency paradigm was first developed, depend on an institutional infrastructure of disclosure rules, rating agencies, financial analysis, regulators, and supervisors to approximate informational efficiency. Still, all this public investment in financial stability has not prevented the frequent buildup of bubbles and the crises that follow them like night follows day.

Something as little as a new piece of information that was previously ignored can trigger a run for the exit by enough investors to set in motion a downward price spiral. As prices tumble, more investors sell, and as more sell, more prices tumble. This dynamic, in which prices are both cause and effect, can be stopped only by public intervention that sets a floor for prices by acting as a dealer or lender of last resort.

Even in the best circumstances, the price of financial assets contains only limited information about the underlying asset. As John Maynard Keynes noted long ago, the price of an asset reflects beliefs about what investors hope to sell it for in the future. It is like a beauty contest in which whoever predicts the person others will find most beautiful emerges as winner. It's not about beauty as such or about the "fundamental value" of the economic undertaking that put the assets into circulation.

A business organization may be less complex than a nation, but it too is a complex undertaking that is difficult to measure on a single scale. Companies were once organized to produce goods or services for which there was some demand. Originally, corporations had to specify a purpose in order to obtain the privilege of incorporation—to operate as a separate legal person that owns its own assets, contracts in its own name, and can shield its shareholders from liability for its operations.

Today, corporations no longer commit to a specific purpose; instead, their purpose is to maximize shareholder value. As a result, corporations have become money mints in which firm assets are used as collateral, share-repurchase plans give shareholders liquidity on demand, and labor costs are cut—except compensation to directors and officers, whose incentives must align with those of shareholders for this model to work.

Corporate cash machines

Turning corporations into cash machines for investors has done strange things. Take Boeing Company, which made headlines several years ago when two of its 737 MAX airplanes crashed and again, more recently, when a door blew out midflight. After the earlier incidents that left hundreds of passengers dead, their relatives bereaved, and airplanes grounded for months for safety checks, shareholders sued the company's directors. They sought hundreds of millions of dollars in compensation from the company for its failure to monitor product safety.

The litigation revealed that the board of directors had not monitored airplane safety. The board had an audit committee and a compensation committee, but no product safety committee. There was no information system to inform directors of engineers' concerns about the planes' safety.

In fact, the company had moved its headquarters from Seattle, its production base, to Chicago, its investor base, and then to the edge of Washington, DC, presumably its political cover base. The directors thought they had done nothing

wrong. They did what they were told to do by their shareholder electorate: maximize shareholder value.

The Delaware Chancery Court, which had long endorsed shareholder value maximization, took them to task: a company that produces planes has a *critical mission* to ensure that the planes can fly. Failure to put in place an information and monitoring system that would alert them to safety issues amounted to a breach of their fiduciary duties.

(Asked for comment, Boeing said that since 2019 it has added board members with extensive engineering and safety experience, created a chief aerospace safety officer role, and established councils overseeing manufacturing and quality.)

Boeing is not a singular case. Other companies have also put customers at risk in pursuit of shareholder value. Yet the lessons about the danger of ruling by share price rather than purpose have been largely ignored. In fact, hedge funds and equity funds are having yet another go at extracting financial returns—the only value they recognize, whatever the costs to others. Worse, the price mechanism is turning politics and government into a pricing machine as well.

Standardizing, measuring, and the construction of prices are given primacy over deliberation, reasoning, and judgment. The stock market ticker and growth rates may say something about the economy but are silent about its effects on human well-being or the environment. They have even less to say about the health of the political system and social relations.

While investors seek safe havens for their money, caregiving remains mostly unpaid; the value of human creativity is determined at the box office; nature is reduced to yet another asset class that can be exploited for money; and what is left of community is harvested by profit-seeking digital platforms. These are the social costs of the price mechanism, which fails to incorporate almost anything that matters to people. **F&D**

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LOOKING BEYOND GDP

The World Happiness Report leads the quest for more holistic measures of well-being

MORE THAN 50 YEARS AGO US senator Robert F. Kennedy famously critiqued GDP, saying that it “measures everything...except that which makes life worthwhile.” Since then, there have been significant efforts to look beyond GDP in search of more comprehensive ways of measuring well-being to help improve people’s lives.

The *World Happiness Report* is a key resource in this search, offering a comprehensive look at self-reported life satisfaction scores across countries (see chart for ranking criteria). In the decade since its inception, it has evolved from a novel concept to an influential factor in advancing the inclusion of well-being metrics in policymaking.

When we juxtapose GDP per capita with happiness scores from the report, it becomes clear that while GDP per capita is a significant predictor of happiness, it’s not the only factor. As the report outlines, other variables, such as social support, life expectancy, freedom, generosity, and the absence of corruption, also help explain varying levels of happiness between countries.

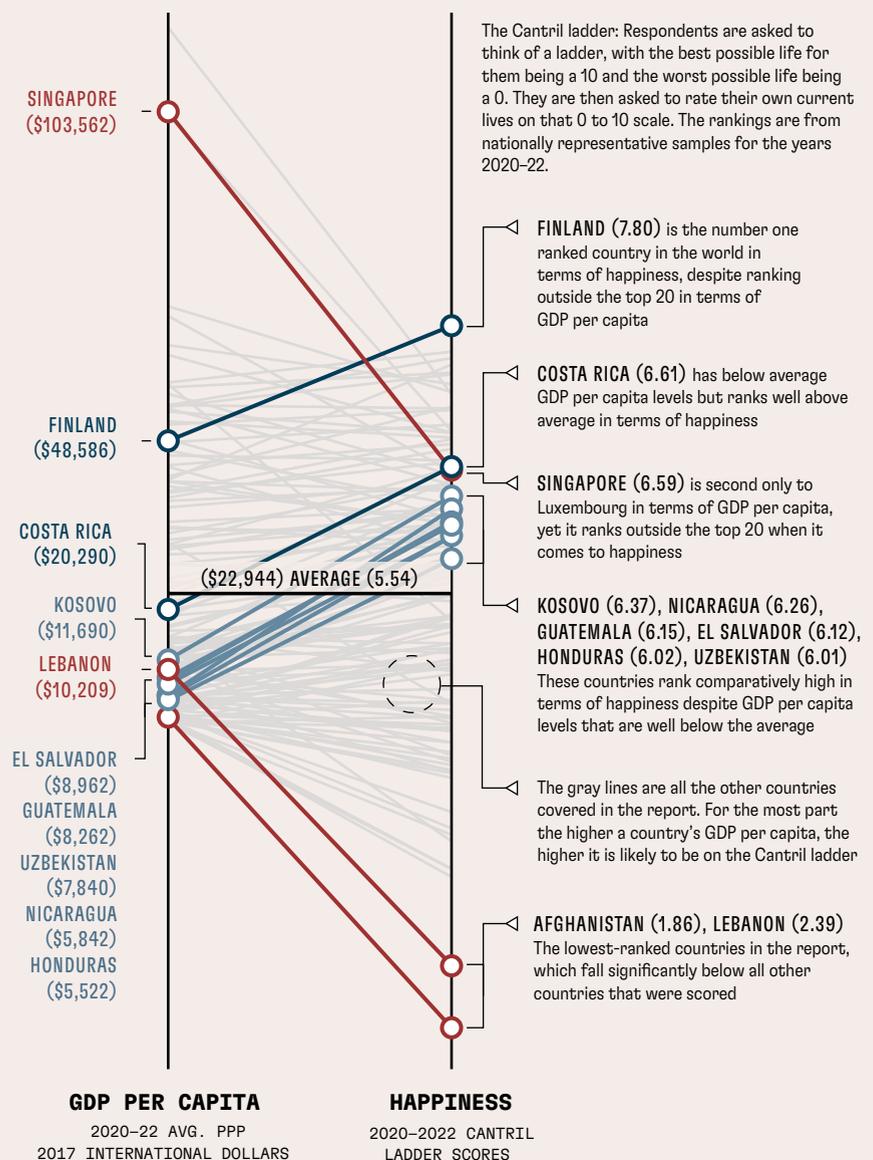
The report urges a reevaluation of success, advocating policies that not only foster economic growth but enhance the quality of life. The authors contend that by integrating happiness as a key objective, governments can adopt a more holistic approach to policymaking, ensuring that progress is measured not solely by material wealth but by the well-being of their citizens.

Some countries are already moving in this direction. For example, in 2019 New Zealand introduced the Wellbeing Budget, targeting critical societal areas such as mental health and child welfare. **F&D**

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Does money buy happiness?

While higher GDP per capita goes together with higher life satisfaction, there are other factors that help explain the striking differences between some examples highlighted below.



SOURCES: IMF, World Economic Outlook database, October 2023; and 2023 *World Happiness Report*.
NOTE: PPP = purchasing power parity.

HOW ECONOMICS MUST CHANGE

Fifteen years ago, the global financial crisis shattered the intellectual consensus that prevailed after the Cold War. Since then, economists have failed to accurately predict repeated shocks, and there's no consensus on a sustainable model for global development. More broadly, there's a sense that economics as a discipline may need renewal. Does the profession sufficiently represent the range of people and problems it examines? Is it too far removed from the concerns of ordinary people? Does it define economic well-being too narrowly?

We asked six economists from across the ideological spectrum the following question: How must the profession change to become better at answering 21st century challenges? Here's how they answered.



Angus Deaton

Questioning one's views as circumstances evolve can be a good thing

Economics has achieved much; there are large bodies of often nonobvious theoretical understandings and of careful and sometimes compelling empirical evidence. The profession knows and understands many things. Yet today we are in some disarray. We did not collectively predict the financial crisis and, worse still, we may have contributed to it through an overenthusiastic belief in the efficacy of markets, especially financial markets whose structure and implications we understood less well than we thought. Recent macroeconomic events, admittedly unusual, have seen quarrelling experts whose main point of agreement is the incorrectness of others. Economics Nobel Prize winners have been known to denounce each other's work at the ceremonies in Stockholm, much to the consternation of those laureates in the sciences who believe that prizes are given for getting things right.

Like many others, I have recently found myself changing my mind, a discomfiting process for someone who has been a practicing economist for more than half a century. I will come to some of the substantive topics, but I start with some general failings. I do not include the corruption allegations that have become common in some debates. Even so, economists, who have prospered mightily over the past half century, might fairly be accused of having a vested interest in capitalism as it currently operates. I should also say that I am writing about a (perhaps nebulous) mainstream, and that there are many nonmainstream economists.



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- **Power.** Our emphasis on the virtues of free, competitive markets and exogenous technical change can distract us from the importance of power in setting prices and wages, in choosing the direction of technical change, and in influencing politics to change the rules of the game. Without an analysis of power, it is hard to understand inequality or much else in modern capitalism.
- **Philosophy and ethics.** In contrast to economists from Smith and Marx through John Maynard Keynes, Friedrich Hayek, and even Milton Friedman, we have largely stopped thinking about ethics and about what constitutes human well-being. We are technocrats who focus on efficiency. We get little training about the ends of economics, on the meaning of well-being—welfare economics has long since vanished from the curriculum—or on what philosophers say about equality. When pressed, we usually fall back on an income-based utilitarianism. We often equate well-being to money or consumption, missing much of what matters to people. In current economic thinking, individuals matter much more than relationships between people in families or in communities.
- **Efficiency is important, but we valorize it over other ends.** Many subscribe to Lionel Robbins' definition of economics as the allocation of scarce resources among competing ends or to the stronger version that says that economists should focus on efficiency and leave equity to others, to politicians or administrators. But the others regularly fail to materialize, so that when efficiency comes with upward redistribution—frequently though not inevitably—our recommendations become little more than

“When efficiency comes with upward wealth redistribution, our recommendations frequently become little more than a license for plunder.”

a license for plunder. Keynes wrote that the problem of economics is to reconcile economic efficiency, social justice, and individual liberty. We are good at the first, and the libertarian streak in economics constantly pushes the last, but social justice can be an afterthought. After economists on the left bought into Chicago’s deference to markets—“we are all Friedmanites now”—social justice became subservient to markets and a concern with distribution was overruled by attention to the average, often nonsensically described as the “national interest.”

- **Empirical methods.** The credibility revolution in econometrics was an understandable reaction to the identification of causal mechanisms by assertion, often controversial and sometimes incredible. But the currently approved methods, randomized controlled trials, differences in differences, or regression discontinuity designs, have the effect of focusing attention on *local* effects, and away from potentially important but slow-acting mechanisms that operate with long and variable lags. Historians, who understand about contingency and about multiple and multidirectional causality, often do a better job than economists of identifying important mechanisms that are plausible, interesting, and worth thinking about, even if they do not meet the inferential standards of contemporary applied economics.
- **Humility.** We are often too sure that we are right. Economics has powerful tools that can provide clear-cut answers, but that require assumptions that are not valid under all circumstances. It would be good to recognize that there are almost always competing accounts and learn how to choose between them.

Change of heart

Like most of my age cohort, I long regarded unions as a nuisance that interfered with economic (and often personal) efficiency and welcomed their slow demise. But today large corporations have too much power over working conditions, wages, and decisions in Washington, where unions currently have little say compared with corporate lobbyists. Unions once raised wages for members and nonmembers, they were an important part of social capital in many places, and they brought political power to working people in the workplace and in local, state, and federal governments. Their decline is contributing to the falling wage share, to the widening gap between executives and workers, to community destruction, and to rising populism. Acemoglu and Johnson have recently argued that the direction of technical change has always depended on who has the power to decide; unions need to be at the table for decisions about artificial intelligence. Economists’ enthusiasm for technical change as the instrument of universal enrichment is no longer tenable (if it ever was).

I am much more skeptical of the benefits of free trade to American workers and am even skeptical of the claim, which I and others have made in the past, that globalization was responsible for the vast reduction of global poverty over the past 30 years. I also no longer defend the idea that the harm done to working Americans by globalization was a reasonable price to pay for global poverty reduction because workers in America are so much better off than the global poor. I believe that the reduction in poverty in India had little to do with world trade, and that its reduction in China could have happened with less damage to workers in rich countries had Chinese policies caused it to save less of its national

income, so that more of its growth of manufacturing could have been absorbed at home. I had also seriously underthought my ethical judgments about trade-offs between domestic and foreign workers. We certainly have a duty to aid those in distress, but we have additional obligations to our fellow citizens that we do not have to others.

I used to subscribe to the near consensus among economists that immigration to the US was a good thing, with great benefits to the migrants and little or no cost to domestic low-skilled workers. I no longer think so. Economists' beliefs are not unanimous on this but are shaped by econometric designs that may be credible but often rest on short-term outcomes. Longer-term analysis over the past century and a half tells a different story. Inequality was high when America was open, was much lower when the borders were closed, and rose again post Hart-Celler (the Immigration and Nationality Act of 1965) as the fraction of foreign born people rose back to its levels in the Gilded Age. It has also been plausibly argued that the Great Migration of millions of African Americans from the rural South to the factories in the North would not have happened if factory owners had been able to hire the European migrants they preferred.

Economists could benefit by greater engagement with the ideas of philosophers, historians, and sociologists, just as Adam Smith once did. The philosophers, historians, and sociologists would likely benefit too.

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Jayati Ghosh

Economics needs greater humility, a better sense of history, and more diversity

The need for drastic change in the economics discipline has never been so urgent. Humanity faces existential crises, with planetary health and environmental challenges becoming major concerns. The global economy was already limping and fragile before the pandemic; the subsequent recovery has exposed deep and worsening inequalities not just in incomes and assets but in access to basic human needs. The resulting sociopolitical tensions and geopolitical conflicts are creating societies that may soon be dysfunctional to the point of being unlivable. All this requires transformative economic strategies. Yet the discipline's mainstream persists in doing business as usual, as if tinkering at the margins with minor changes could have any meaningful impact.

There is a long-standing problem. Much of what is presented as received economic wisdom about how economies work and the implications of policies is at best misleading and at worst simply wrong. For decades now, a significant and powerful lobby within the discipline has peddled half-truths and even falsehoods on many critical issues—for example, how financial markets work and whether they can be “efficient” without regulation; the macroeconomic and distributive implications of fiscal policies; the impact of labor market and wage deregulation

on employment and unemployment; how patterns of international trade and investment affect livelihoods and the possibility of economic diversification; how private investment responds to policy incentives such as tax breaks and subsidies and to fiscal deficits; how multinational investment and global value chains affect producers and consumers; the ecological damage wrought by patterns of production and consumption; whether tighter intellectual property rights are really necessary to promote invention and innovation; and so on.

Why does this happen? The original sin could be the exclusion of the concept of power from the discourse, which effectively reinforces existing power structures and imbalances. Underlying conditions are swept aside or covered up, such as the greater power of capital compared with workers; unsustainable exploitation of nature; differential treatment of workers through social labor market segmentation; the private abuse of market power and rent-seeking behavior; the use of political power to push private economic interests within and between nations; and the distributive impacts of fiscal and monetary policies. The deep and continuing concerns with GDP as a measure of progress are ignored; despite its many conceptual and methodological flaws, it remains the basic indicator, just because it's there.

“The enforcement of strict power hierarchies within the discipline has suppressed the emergence and spread of alternative theories, explanations, and analysis.”

Inconvenient truths

There is a related tendency to downplay the crucial significance of assumptions in deriving analytical results and in presenting those results in policy discussions. Most mainstream theoretical economists will argue that they have moved far away from early neoclassical assumptions such as perfect competition, constant returns to scale, and full employment, which bear no relation to actual economic functioning anywhere. But these assumptions still persist in the models that explicitly or implicitly undergird many policy prescriptions (including on trade and industrial policies or “poverty reduction” strategies), particularly for the developing world.

The power structures *within* the profession reinforce the mainstream in different ways, including through the tyranny of so-called top journals and academic and professional employment. Such pressures and incentives divert many of the brightest minds from a genuine study of the economy (to try to understand its workings and the implications for people) to what can only be called “trivial pursuits.” Too many top academic journals publish esoteric contributions that add value only by relaxing one small assumption in a model or using a slightly different econometric test. Elements that are harder to model or generate inconvenient truths are simply excluded, even if they would contribute to a better understanding of economic reality. Fundamental constraints or outcomes are presented as “externalities” rather than as conditions to be addressed. Economists who talk mainly to each other, then simply proselytize their findings to policymakers, are rarely forced to question this approach.

As a result, economic forces that are necessarily complex—muddled with the impact of many different variables—and reflect the effects of history, society, and politics are not studied in light of this complexity. Instead, they are squeezed into mathematically tractable models, even if this removes any resemblance to economic reality. To be fair, some very successful mainstream economists have railed against this tendency—but with little effect thus far on the gatekeepers of the profession.

Hierarchy and discrimination

The enforcement of strict power hierarchies *within* the discipline has suppressed the emergence and spread of alternative theories, explanations, and analysis. These combine with the other forms of discrimination (by gender, race/ethnicity, location) to exclude or marginalize alternative perspectives. The impact of location is huge: the mainstream discipline is completely dominated by the North

Atlantic—specifically the US and Europe—in terms of prestige, influence, and the ability to determine the content and direction of the discipline. The enormous knowledge, insights, and contributions to economic analysis that are made by economists located in global majority countries are largely ignored, because of the implicit assumption that “real” knowledge originates in the North and is disseminated outward.

Arrogance toward other disciplines is a major drawback, expressed for example by the lack of a strong sense of history, which should permeate all current social and economic analysis. Recently it has become fashionable for economists to dabble in psychology, with the rise of behavioral economics and “nudges” to induce certain behavior. But this too is often presented ahistorically, without recognizing varying social and political contexts. For example, the worm’s eye randomized tests that have become so popular in development economics are associated with a shift away from studying evolutionary processes and macroeconomic tendencies, to focus on microeconomic proclivities that effectively erase the background and context that shape economic behavior and responses. The underlying and deeply problematic underpinning of methodological individualism persists, largely because few contemporary economists attempt a philosophical assessment of their own approach and work.

These flaws have greatly impoverished economics and unsurprisingly reduced its credibility and legitimacy among the wider public. The mainstream discipline is sorely in need of greater humility, a better sense of history and recognition of unequal power, and active encouragement of diversity. Clearly, much has to change if economics is really to become relevant and useful enough to confront the major challenges of our times.

Diane Coyle

Fundamental economic changes require a departure from simplistic economics

The economy of the 2020s is a world away from the economy of the mid-20th century, when much of the standard toolkit economists still use was first developed.

The formalization of economics in the 1950s and ’60s occurred in the context of a manufacturing sector that drove growth and employment, producing standardized goods, and trade was dominated by finished goods rather than components. Keynesian economics shaped the categories of statistics gathered in the System of National Accounts and in the linear input-output models and macroeconomic models newly built by econometricians.

Many of those in prominent policy roles today learned their economics from textbooks and courses based on that relatively orderly economy. In particular, the framework for evaluating policies relied on the basic theorems of “welfare economics,” the branch of the discipline that asks whether economic outcomes are desirable or not. The theory states that market outcomes are the best that can be attained—if certain key assumptions hold.

Needless to say, they rarely do. For example, for the theory to be valid, people need to have fixed preferences—including for things that do not yet exist. All goods need to be “rival,” or able to be consumed only by one person, yet many are nonrival—from the atmosphere to public roads to digital movies. There must be no externalities such as pollution or CO₂ emissions. No firms can have market power—there must be perfect competition—and there must be constant returns to scale as production levels increase. What’s more, in the 1970s Nobel laureate Kenneth Arrow proved his “impossibility theorem,” which shows that it is never (on very reasonable assumptions) possible to determine the welfare of society as a whole by adding up the welfare of individuals.

DIANE COYLE

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Time for change

So for at least the past 40–50 years, the absence of solidly grounded welfare economics has been an uncomfortable vacuum in economics. Policymakers must choose what they think will be the best course of action for their society, using



“It is time for a reboot of welfare economics. And that means moving away from the simplistic set of assumptions that have shaped the worldview instilled in generations of economics policymakers.”

the best tools economics can provide. One of these, widely used, is cost-benefit analysis. Another is simply to aim to increase economic growth, as this drives up living standards. As the old joke goes, the economic tools work in practice even though they don't work in theory.

But they have reached their limits. It is time for a reboot of welfare economics. And that means moving away from the simplistic set of assumptions that have shaped the worldview instilled in generations of economics policymakers. Why now? The answer is that the economy has changed so fundamentally that the discipline must follow suit.

One obvious change is the urgency of addressing the environmental crisis. Both climate change and loss of biodiversity put future economic prosperity at risk—and pose potentially existential threats. In the mid-20th century the binding constraint on economic growth was the shortage of physical and human capital, which both needed major postwar investment. In the middle decades of the 21st century, nature will be the binding constraint. Economists must make a major effort to develop natural capital statistics, devise new ways of measuring the social cost of nature's services, and above all integrate the analysis of the human economy and nature

in a meaningful way rather than relegating the issue to isolated “externalities.”

Less obvious, but just as fatal for the currently prevailing default mental model of a constant returns, competitive economy of manufactures, is the structure of production today. It is highly globalized even after the shocks of recent years. It is increasingly intangible (in terms of economic value added, material inputs matter as much as ever). Global production is enabled by digital communications and logistics, and digital platforms are becoming the preeminent business model.

This means there are pervasive economies of scale, even more powerful than in the case of older industries such as steel and aircraft manufacture. In many countries and many sectors, a small number of firms have significant market power. Pinpointing the location of value creation is next to impossible given the massive movement of data and ideas along fiber-optic cables. The continuing rapid development of artificial intelligence means that this technological transition will endure. There are no definitions and statistics to monitor the economy, and governments find it difficult to collect taxes and regulate corporate activities.

The new economics

Academic economists are well aware of the changing character of the economy, and there is a good deal of exciting research taking place. But there is not yet a 21st century version of the synthesis of Keynes' vision of how the economy as a whole works nor the statistics to measure and forecast it. This means that economists—especially if they work in the policy world, with its practical demands—default to the old mental model.

So this is the challenge for the economics profession (as I discuss in my book *Cogs and Monsters*). How should economists analyze the highly nonlinear, interdependent, intangible global economy, with its concentration of market power and new emerging inequalities? What do good outcomes in the digital, intangible, but nature-constrained economy look like? What needs to be measured so we can tell? Above all, if economics is to be useful, what new toolkit can economists provide to help policy decision-making?



Atif Mian

Dependence on credit to boost demand imperils the world economy—we must correct the underlying imbalances

Nature requires balance—between predator and prey in the jungle, between the push and pull of planets in orbit, and so on. The economic system is no different; it requires long-term balance between what people earn and what they spend. Loss of this balance has led to a massive debt supercycle that threatens the global economy. Breaking that cycle is one of the most pressing challenges of the 21st century.

The debt supercycle is the product of an ever-increasing buildup of borrowing by consumers and governments. For example, total debt was about 140 percent of GDP between 1960 and 1980 in the United States, but has since more than doubled—to 300 percent of GDP. The same trend holds true globally. In fact, not even the Great Recession of 2008—which in many ways was a result of the excesses of borrowing—could put a dent in debt’s relentless upward march. It would be a mistake to think that 2008 reflected merely some unfortunate policy misstep. The buildup in debt that led to the 2008 crisis stemmed from deep structural imbalances in the economy. Those imbalances persist, as do the dangers associated with them.

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Behind the imbalances

There are two main forces behind the rise of imbalances that have generated the debt supercycle: the saving glut of the rich and the global saving glut. The saving glut of the rich is a consequence of rising inequality. The share of disposable income going to the very rich (top 1 percent) has been steadily rising since 1980. Since the rich also tend to save a much higher fraction of their disposable income, rising inequality has led to a large surplus of savings accumulated by the very rich. The global saving glut is driven by a group of countries, including China, that essentially mimic the saving glut of the rich phenomenon. These countries have been earning a larger share of global income and also save at a much higher rate through various government institutions, such as central banks and sovereign wealth funds. The combined consequence of these two imbalances is a rise in financial surpluses, which have financed the global debt supercycle.

The financial sector plays an important intermediation role: it takes financial surpluses from rich individuals and countries and lends them to various segments of the economy. A well-functioning financial sector would channel the financial surpluses toward productive investments, such as building and maintaining infrastructure and developing technology. Any debt resulting from such productive lending would naturally be sustainable, because returns from investment would pay it off. Unfortunately, a key feature of the debt supercycle is its failure to finance productive investment. For example, even though total debt as a share of GDP has more than doubled, real investment as a share of GDP has remained stagnant, or even fallen over the past four decades.

“Rising imbalances traceable to the very rich and certain countries have generated a global debt supercycle that largely finances unproductive indebted demand.”

Instead of financing investment, the debt supercycle has mostly financed unproductive consumption by households and governments. Whether debt finances consumption or investment does not pose a problem in the short term, because both contribute toward aggregate demand in the same way. However, debt-financed consumption, or “indebted demand,” has different implications in the long run when indebted consumers repay their lenders. Borrowers can repay their debt only by cutting consumption, which puts a drag on aggregate demand, since savers are less inclined to spend the paid-back funds on consumption.

Pushing rates down

Indebted demand thus pulls down aggregate demand in the long run. The economy attempts to compensate for this downward pressure by pushing interest rates down as well. Lower rates help ease the debt-service burden for borrowers and push aggregate demand back up. Consequently, the rise of the debt supercycle is associated with a persistent fall in long-term interest rates as well. For example, the 10-year US real interest rate has declined from about 7 percent in the early 1980s to zero or even negative values in recent years. One unfortunate implication of the fall in long-term rates is that asset valuations tend to rise, which further worsens inequality.

In short, rising imbalances traceable to the very rich and certain countries have generated a global debt supercycle that largely finances unproductive indebted demand. This significant characteristic of the debt supercycle pushes long-term interest rates down, which only further exacerbates rising wealth inequality. An equally troubling aspect of the debt supercycle is that real investment has not gone up despite the large decline in interest rates and abundant financial surpluses. Debt supercycles reflect problems on the demand side, with rising inequality and the saving glut of the rich, and problems on the supply side, with a highly restrictive investment response despite extremely low interest rates and abundant financing.

World economy’s vulnerabilities

What dangers does the debt supercycle pose to the world economy? An economy that relies on a constant supply of new debt to generate demand is always susceptible to disruptions in financial markets, which can trigger serious slowdowns. This is what happened in 2008 with household debt. Since then, the economy has relied more on government debt to generate demand. Governments in advanced economies can often borrow at a rate lower than their rate of growth, which makes it easier for them to sustain the debt supercycle and keep the economy afloat. But dependence on continuous government borrowing is politically risky because it relies on continued financial market stability. Recent rate hikes in many countries demonstrate that this reliance cannot be taken for granted.

Ultimately the economy needs to find a way to rebalance and reverse the debt supercycle. This calls for structural changes so that growth is more equitable, which would naturally reduce the scope for imbalances. There is also a natural role for tax policy to rebalance the economy. For example, taxing wealth beyond a certain threshold can promote more spending by the very wealthy. This in turn would reduce the saving glut of the rich that finances the unproductive debt cycle. Finally, supply-side reforms, such as removing restrictions on new construction, promoting competition, and boosting public investment, can help expand investment opportunities so that debt can fund productive investment rather than unproductive indebted demand.

Governments around the world have been responding to the ills of the debt supercycle with traditional fiscal and monetary tools. However, as is well known, these tools are designed only to address temporary cyclical problems, not structural problems such as long-term imbalances. For example, looser monetary policy may help boost demand in the short term by enabling borrowers to borrow a little more. But ultimately such indebted demand will pull the economy back down again. We have at best been kicking the proverbial can down the road, and at worst further impeding eventual resolution of the debt supercycle.

“The mantras of the 2010s, which preached that prosperity needed only for the government to borrow or print a huge amount of money and hand it out, are in the dustbin.”

John H. Cochrane

Inflation teaches us that supply, not demand, constrains our economies, and government borrowing is limited

The unexpected resurgence of inflation is a slap in the face, telling us that the consensus ideas of economic policy are wrong and need to change. Fortunately the “new” ideas we need are well tested and sitting on the shelf.

Inflation comes when aggregate demand exceeds aggregate supply. The source of demand is not hard to find: in response to the pandemic’s dislocations, the US government sent about \$5 trillion in checks to people and businesses, \$3 trillion of it newly printed money, with no plans for repayment. Other countries enacted similar fiscal expansions and reaped inflation in proportion. Supply is more contentious. Supply did shrink during the pandemic. But inflation spiked after the pandemic was largely over, and many “supply shock” industries were producing as much as before but could not keep up with demand.

But just how much inflation came from demand, induced by looser fiscal or monetary policy, versus reduced supply matters little for the basic lesson. *Inflation forces us to face the fact that “supply,” the economy’s productive capacity, is far more limited than most people previously thought.* The mantras of the 2010s—“secular stagnation,” “modern monetary theory,” “stimulus”—which preached that prosperity needed only for the government to borrow or print a huge amount of money and

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hand it out, are in the dustbin. You asked for it. We tried it. We got inflation, not boom.

A supply-limited economy requires supply-oriented policy, not stimulus, to grow. “Jobs” are now a cost, not a benefit. With 3.7 percent US unemployment, every worker employed on a make-work project is one not doing something more important. Regulations make housing far too costly and time-consuming to build. A coherent immigration system brings in people who work, produce, and pay taxes. We need public infrastructure, but its obscene excess cost is a rathole we can no longer afford. Tariffs that force us to overpay for things foreigners can provide better are just a drain on the economy. Policy focused on who gets what must now focus on incentives, which are the key to growth.

The cancer of stagnation

Stagnation is the quietly insidious economic cancer of our era. US growth fell by half after 2000. Europe and the UK are stagnating even more. Italy has not grown in per capita terms since 2007. Reviving long-term growth drowns any other policy, and only supply, efficiency, productivity, and incentive-oriented policy can revive long-term growth.

The view that there is unlimited demand for government debt, with buzzwords like “savings glut” or “safe asset shortage,” has equally proved false. The US, UK, and Europe seem to be able to borrow about 100 percent of GDP. More debt leads to higher interest rates, trouble borrowing, and inflation as people try to spend the extra debt rather than hold on to it as a good investment.

From now on, governments must spend money as if they have to raise taxes to pay for it, now or later. They do. Projections that debt will serenely grow to 200 percent of GDP under primary deficits that are eternally 5–10 percent of GDP will simply not happen. Worse, we have lost our fiscal capacity to react to shocks. If the \$5 trillion pandemic response was more debt than people will hold and caused inflation, the \$10 trillion response to the next crisis will face even more trouble.

Our left wing wants to spend trillions of dollars on cost-ineffective climate subsidies,

such as massively oversize electric cars built in the US, by union labor, with US parts. Our right wing wants to spend trillions of dollars on protection and industrial subsidies in a vain (and unwise) quest to bring back 1950s manufacturing. Industrial policy will do for chips what the Jones Act (the Merchant Marine Act of 1920) did for shipping. Now that money is no longer free, we can only afford spending that actually works.

Inflation’s lessons

This inflation has two deep lessons for monetary and financial policy. First, central banks do not entirely control inflation. Inflation control needs fiscal probity as well. Second, the fiscal blowout was in part a financial bailout, including support for Treasury, municipal, and corporate debt; money market funds; airlines; and others. The central “no more bailouts” promise of the Dodd-Frank financial reform failed. In my view, another 100,000 regulations will fail again, and the only answer is the simple classic vision of equity-financed banking.

These may seem like old ideas. That’s great. Progress in economics has never come from pontificators who urge someone else to throw new ingredients in the pot—say, to “care more about people,” “add psychology,” “mix politics and economics,” incorporate “real-world” complications or “heterodox” ideas—stir, and hope that a digestible soup comes out. Progress in economics has always come from answers, patiently worked out, empirically verified, simplifying reality to actionable cause and effect statements. Economic policymaking suffers from too many pundits who rush to Washington to demand trillions of spending and untold intrusions in people’s affairs, based on half-baked stewpots of novel ideas. Economic policy should rely on well-tested notions. When economists try to supply ideas in response to political demands for the appearance of novelty, they disperse bad economics and bad politics. And what seems old to us can appear novel too. Adam Smith’s 250-year-old ideas are still news to most in politics.

Michael Kremer

Economists can play a crucial role in the development of innovations for serving social, environmental, and other human needs

We know that innovation is a key driver of economic growth, but technical and social innovation has also spurred improvements in health, inequality, and social relations. Contemporary innovations in biology and artificial intelligence have tremendous potential to promote prosperity, improve health and education (including for the world's most disadvantaged), and address global challenges such as pandemics and climate change.

At the same time, many are concerned that these innovations could further endanger the environment, increase inequality, and lead to political polarization. As economists, we can contribute to the design of institutions to better align private incentives for the pace and direction of innovation with human and environmental needs. We can also contribute directly to the innovation process by helping develop and rigorously test social innovations.

Closing the gaps

More than 5,000 innovations have been patented related to control of the European maize borer (a pest that eats grain), but only five for the maize stalk borer, a similar pest, which affects primarily production in sub-Saharan Africa. Economic analysis can help identify cases like this, in which social needs and commercial incentives to invest in innovation diverge substantially under current institutions. It can also inform the design of policies and institutions to address these gaps. Here, I will draw examples from the interlinked challenges of climate change, food insecurity, and agricultural productivity in low- and middle-income countries. As the examples of the maize borers illustrate, this is an area with particularly large gaps between social and commercial incentives for innovation.

Perhaps most obviously, climate mitigation innovations have large positive externalities (benefits to people other than the consumer of the innovation), meaning commercial incentives to invest in them are limited. For example, methane emissions from livestock make up nearly 15 percent of all anthropogenic greenhouse gas emissions, and innovative feed additives could potentially reduce these emissions by 98 percent. However, since farmers lack strong incentives to purchase such feed additives, potential feed innovators lack strong incentives to invest in R&D.

Other innovations are public goods and will be undersupplied by the market. For example, climate change disrupts weather patterns, and advances in AI enable more accurate weather forecasts. Farmers react to these forecasts. Improved monsoon forecasts could produce benefits exceeding \$3 billion for farmers over five years in India alone, perhaps 100 times as much as they would cost. Moreover, information services create benefits beyond the buyer of the goods, since farmers who don't subscribe can still access the information from subscribers.

Innovations in government service delivery, such as new technologies for digital agricultural extension, face a monopsony buyer problem, since the government is the most plausible buyer. Innovators may also be reluctant to invest in innovations with limited barriers to entry, such as climate-resilient crop varieties that farmers are able to replant in future seasons without repurchasing seeds.

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Policies for innovation

Economic theory and empirical analysis can also contribute to the design of research funding systems. How should research funding be allocated or divided between basic research and more translational work? What regulations are needed to protect safety? When should funding be allocated to large-scale centralized efforts and when should it be allocated through open calls for proposals from individual researchers with peer review? Are there better ways to identify and nurture potential members of the next generation of researchers who might not otherwise enter the field?

Economics can also provide guidance in designing incentives for innovation that do not require governments to pick winners in advance. There is a large literature on how patents can be optimally designed to balance incentives for innovation and monopoly-pricing distortions. It is also worth exploring alternative approaches for rewarding innovations, such as prizes or advance market commitments, under which funders commit to pay for a future innovation if it meets prespecified technical and pricing criteria and garners market demand. Following a \$1.5 billion advance market commitment for the pneumococcal vaccine, three firms developed vaccines that were effective against the strains commonly found in developing economies. These vaccines have now reached hundreds of millions of children, saving an estimated 700,000 lives.

Government procurement procedures can also be designed to spur innovation. For example, cement is responsible for about 7 percent of carbon dioxide emissions. Since governments are major purchasers, accounting for half of US cement use, they could boost innovation in low-carbon cement simply by committing to factoring the social cost of carbon into procurement processes.

“As economists, we can contribute to the design of institutions to better align private incentives for the pace and direction of innovation with human and environmental needs.”

Economists as innovators

In addition to shedding light on the design of policies and institutions for innovation, economists can also participate directly in the innovation process. For example, economic theorists have used market design principles to design kidney transplant matching systems, and development economists are using experimental methods not just to test innovations, but also to help develop them. An analysis of Development Innovation Ventures (DIVs)—the US Agency for International Development’s tiered evidence-based social innovation fund—found that 36 percent of awards went to innovations developed by teams including development economists, scaled to reach over 1 million users, compared with just 6 percent of awards to innovations without such involvement.

Furthermore, 63 percent of DIV-supported innovations that had previously been tested in randomized controlled trials reached more than 1 million people, compared with only 12 percent of those without such trials. For example, economists helped develop a credit-scoring approach using psychometrics (psychological testing) to assess default risk for potential borrowers without credit histories, which scaled through adoption by commercial lenders.

Just as biochemists and computer scientists often develop practical innovations in their fields, economists are increasingly developing social innovations in ours. **F&D**

A PLACE FOR POLITICS

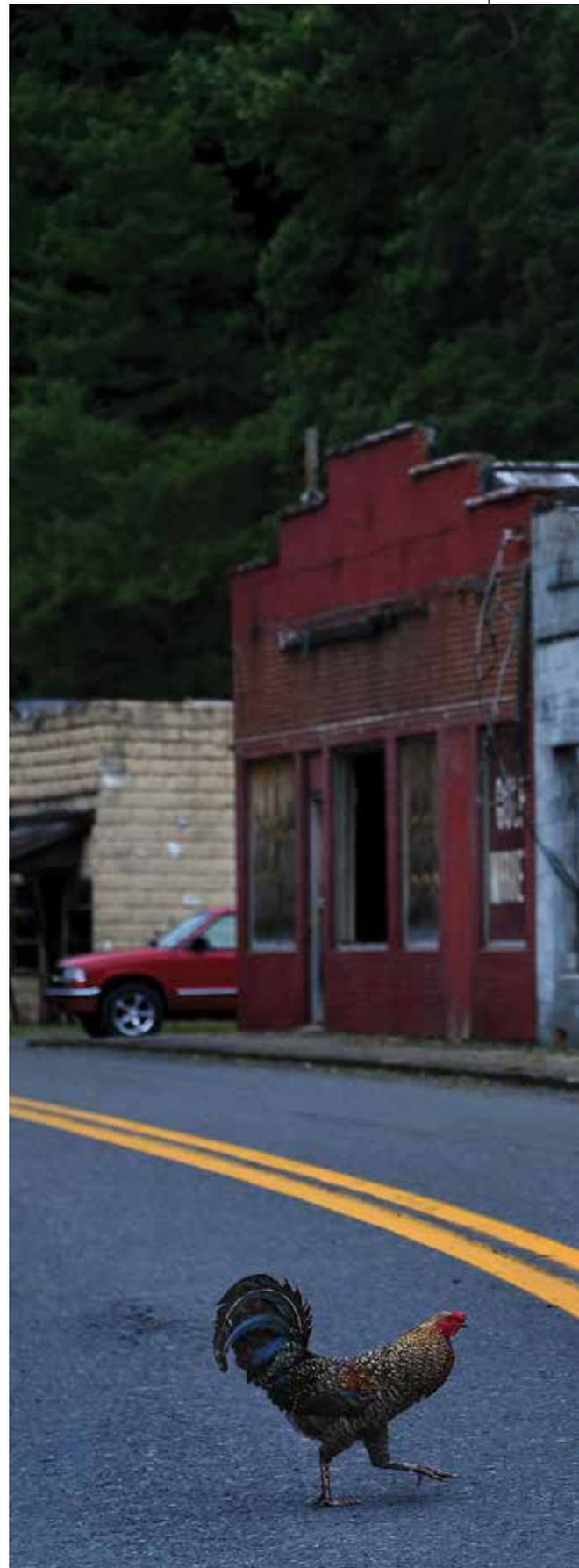
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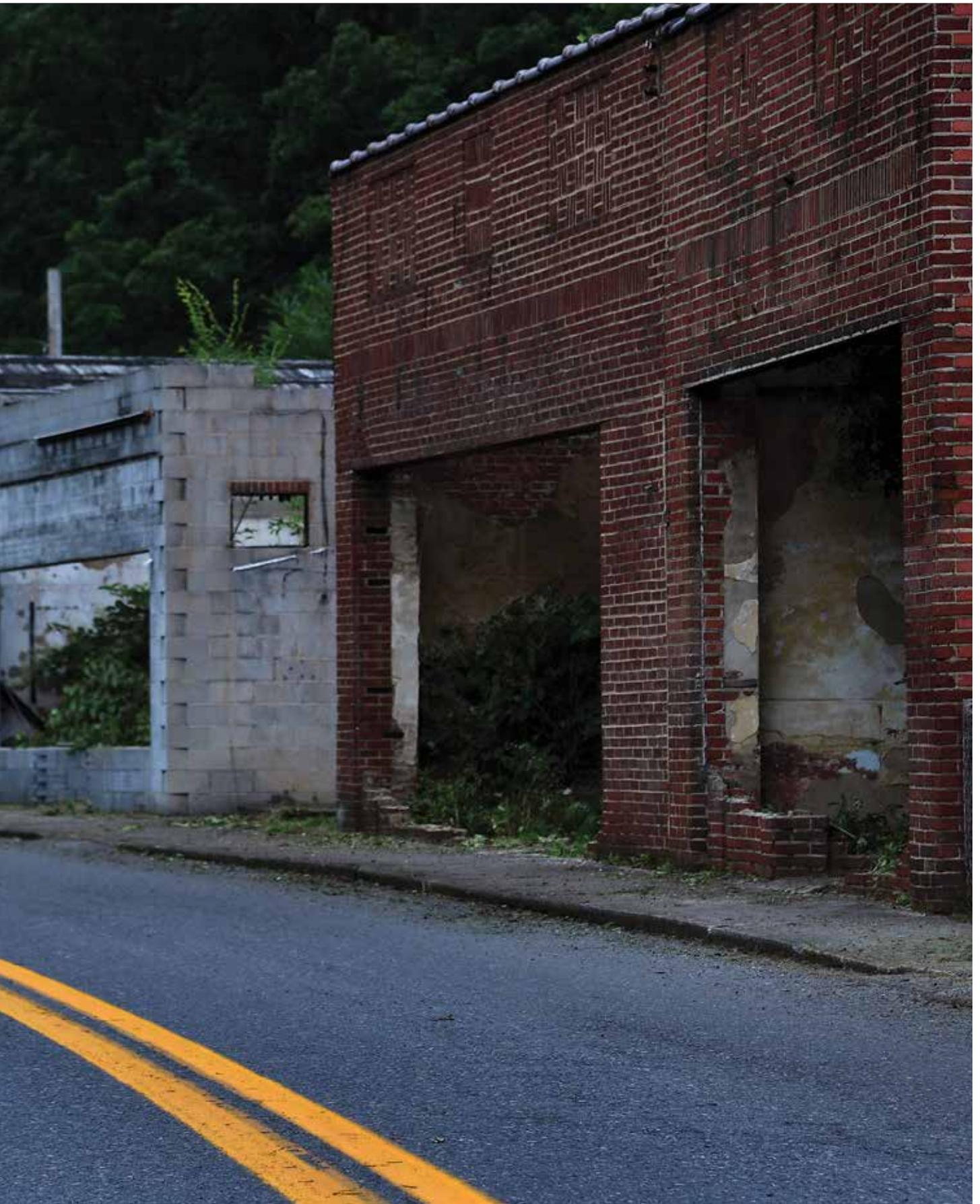
Politics is often messy, but it's how society puts a value on things economists can't measure

Even as the United States took its place as the world's preeminent economic power after World War II, manufacturing firms fled towns in the Northeast and Midwest, leaving behind rusting steel mills and scarred communities. Society as a whole became richer as new industries sprang up elsewhere, but many rust belt communities are still dealing with the consequences of deindustrialization.

The US postwar economic transformation is one example of how policies and trends that increase *aggregate social welfare* can have painful *distributional* effects: they beget winners and losers. This makes them controversial. Controversy is no reason to avoid an economic policy, especially if the policy makes society substantially better-off. Policymakers often struggle to persuade the public to accept economic policies that improve well-being. To make them more palatable to the public, policymakers must recognize that policies and trends take place in a broader social and political environment. It is vital that policies gain the acceptance of important social and political actors.

Main Street
in a small
coal town.





Economics is good at identifying policies that could raise aggregate social welfare. One such policy is free trade. Virtually all economists believe that most economies could be improved by removing barriers to trade. No sensible economist or policymaker pretends that this is costless: while consumers and exporters may benefit, firms and industries that have trouble competing with imports are likely to suffer.

There is a simple economic solution. If a social-welfare-improving policy creates losers, the benefits it generates for society can be used to compensate those harmed. The government can tax those advantaged by trade liberalization—exporters, consumers—to help those disadvantaged, autoworkers for instance. Since by definition the policy increases social welfare, spreading the gains will still leave society better-off, only in a more equitable fashion than if we simply left newly unemployed autoworkers to fend for themselves.

Compensation's problems

Compensation may be simple and powerful in theory, but it's not easy in practice. Those who *gain* from a new policy—such as consumers and exporters when trade is liberalized—are rarely enthusiastic about having some of their gains taxed away. Compensation can be costly and politically difficult, which is why it happens far less frequently than economists would recommend.

Compensation can be difficult for other, more complex, reasons. One is timing: in some cases the appropriate measure would be for one generation to compensate another. For instance, there might be a certain equity, as well as mutual benefit, in asking future generations to contribute to the society of 2024 if the latter bore the cost of tackling climate change—for example, to address jobs lost to the green transition. But how do we get “the future” to pay up? One way would be for the government to borrow and let the debt-service payments fall on future generations. Sensible as this may be in practice, it risks the prospect of debt burdens that are not sustainable. Indeed, it is hardly in a country's long-term interest to tempt current legislatures to bankrupt governments of the future, and financial markets may not let them—they may be unwilling to fund debts they consider excessive.

Another problem with compensation is that it's often unclear exactly who will be helped and harmed by a policy. There is almost always uncertainty about how a complex economy will react to change. Economists may have faith in their models, but workers and managers may be less confident in their predictions. The danger of subjecting constituents to unknown risks can make legislators wary of battling for one policy or another.

“Economic growth and progress matter a lot, but people care about other things too, and those other cares deserve consideration.”

A related obstacle to compensation is lack of credibility. Governments can promise to make things right for those who may be harmed by, say, freer trade or climate policy. But, at least in democratic countries, governments change. Newly elected officials, often having attained office by criticizing their predecessors, are not always keen to maintain their predecessors' policies. Many administrations don't even keep their own promises, let alone those of others. In a world where both outcomes and government policies can vary, those who think they might be affected have plenty of reasons to be cautious.

The most serious reservations about compensation may be noneconomic. Economic analysis focuses on the purely material or pecuniary impact of policies and trends, and of eventual compensation. People, though, may be concerned about less clearly material impacts that are hard to put a price on.

For instance, trade liberalization has contributed to the decline of traditional manufacturing in the US industrial belt—as well as in the north of England, northern France, eastern Germany, and other formerly industrial areas. When the jobs go, there is clearly an economic cost, in lost jobs, wages, tax revenue, and general economic activity.

Distressed regions

But distressed regions may lose something just as real, though less tangible, as well-paying jobs. A small city or town whose factories close can enter a downward socioeconomic spiral: incomes decline, property values and property taxes plummet, local services suffer, and the community's social fabric unravels. This was the prelude to an epidemic of “deaths of despair” by alcoholism, drug abuse, and suicide (Case and Deaton 2020). Even when the impact is not so acute, when Main Street goes dark, the quality of life—for everyone in town—suffers. The collapse of a stable economic base undermines the foundations of the community (Broz, Frieden, and Weymouth 2021).

A common remedy is to encourage those left without work to move to places where jobs are available. This can be difficult or impossible for economic reasons, since those wanting to move from depressed areas are often saddled with plummeting home values. Residents may be reluctant to move for nonpecuniary reasons, too. They may have family and extended family in the area, decades of friends and neighbors, and attachments to local traditions. Depressed or not, it's what they know, and it's home.

The deterioration of coal mining regions illustrates the problem. The coal industry has been declining for years because of both environmental concerns and technological change—and more recently, of course, climate policies. Its decline has devastated entire areas—and not just the coal miners (Blonz, Tran, and Troland 2023). Many coal mining communities were isolated, and few were economically diversified, so once the decline set in there was little to break their fall. One World Bank study found that of 222 Appalachian coal counties, only four had managed to remain “economically viable” (Lobao and others 2021). East and West coast city dwellers may be scarcely aware of them, yet millions of people lived in coal counties, often in tight-knit towns where families had lived for generations bound by social, cultural, and religious ties.

The cost of leaving your family’s historical community is not solely monetary—it means giving up all those personal ties. And there’s no point in asking people what it would take for them to leave: each person’s decision depends on the decisions of others. Why stay if everyone is leaving? Why leave if everyone is staying? And the future of the community may depend on whether its members stay together—and at least preserve the hope of forging a more promising future.

In this context, how can society weigh the consumer benefits of cheaper clothing or cars against the human costs of the collapse of cities and towns in Ohio, the Meuse Valley, or south Yorkshire? Some of these costs are certainly economic and might be suitable for monetary compensation. But some are non-economic, with a value impossible to establish with any precision. How do you put a price on membership in a close-knit multigenerational community?

Politics as a measure

Society does, in fact, have a way to try to establish the relative importance of these difficult-to-measure values: politics. When we debate the merits of free trade versus local factories, or of coal and oil versus wind and sun, we are implicitly or explicitly discussing how heavily to weight the interests of consumers and producers, the harmed and the helped, current and future generations.

Most studies of trade politics, for example, show that elected officials are more likely to protect (with tariffs and other trade barriers) industries with low-wage workers than industries dominated by high-wage workers. There may be many reasons for this tendency; one reason is almost certainly that people have more sympathy for displaced low-wage workers. In another context, city dwellers who have never lived on a farm appear willing to pay more for their food in order to help sustain family farmers,

largely out of a wistful attachment to and sympathy for the rural way of life.

Trade protection or farm subsidies may make political, if not economic, sense—and thus be entirely defensible. The political process weighs people’s values, including those that are hard to price. In this balance, caring deeply about something counts more than caring only a little—so it matters that consumers may care only a little about the price of toys, whereas the residents of a factory town may care a great deal about the cohesion of their community. In the political arena, intensely held views matter more than those that are held only lightly—and that is probably as it should be.

Politics is the mechanism by which societies make difficult choices among things that are often hard to compare. The choices are rarely perfect, and they are usually contentious. But this is how modern societies assess the value citizens place on *their own* values. It is in the political arena that people get to balance, say, the viability of a small town against the benefits to shoppers of cheaper clothing. Economic growth and progress matter a lot, but people care about other things too, and those other cares deserve consideration.

Oscar Wilde wrote of those who know the price of everything but the value of nothing. It would be fairer and more accurate—and more useful—to note that economists are able to put a price on many things, but not on everything of value. Democratic politics may not give us a universally accepted sense of the value of priceless things—such as community, culture, and family. But it can tell us something about how members of society feel about these things and how they weigh them against each other. **F&D**

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NEW LESSONS FROM BEHAVIORAL ECONOMICS

Ulrike Malmendier and Clint Hamilton

The long reach of life experience affects real-world economic outcomes, for policymakers and consumers alike



On October 29, 1929, the roaring twenties came to a sudden close in the United States. In an event known as “Black Tuesday,” the US stock market collapsed, and it would not match its 1929 peak for a long time, until the 1950s.

The subsequent impacts of the Great Depression were not felt just in the stock market. They were felt in people’s stomachs as they lined up at soup kitchens or slept in shantytowns. Those who grew up during the Great Depression, the “Depression babies,” were a generation that was extraordinarily frugal and averse to risks, especially those of the stock market. The trauma people experienced altered a whole generation, their beliefs and outlook on the world and their economic choices—in financial markets, in labor markets, and in many other aspects of their lives.

In economic science, Depression babies have come to represent a new wave of behavioral economics research. It is broadening the field to draw knowledge and methods from adjacent social and natural sciences, in addition to its origins as psychology and economics. Many of the new topics and methods regarding trauma, stress, addiction, mental health, and child development are inherently focused on policy. They link directly to work on what Anne Case and Angus Deaton termed “deaths of despair” in the 21st century and to the persistence of gender roles and racial discrimination.

Behavioral beginnings

But let’s step back for a brief origin story. More than 50 years ago, in the late 1960s, the field of economics was comfortable with mathematical rigor and models, and the most prominent economists of the era, such as Paul Samuelson and Milton Friedman, felt they were more like physicists than psychologists. Yet, at about the same time, two Israeli psychologists, Daniel Kahneman and Amos Tversky, met at Hebrew University in Jerusalem and started a collaboration that would eventually change the status quo in economics. Their most famous work, introducing prospect theory in 1979, combined a few principles to describe how people make decisions when facing risk—principles that seemed very plausible and that were also inconsistent with traditional economics. One principle is that people overweight minuscule probabilities and underweight likely events. (Have you ever felt disturbed by the tiny probability of a plane crash? That’s what they mean.) Another key insight was that people care about changes in relative wealth and wholeheartedly despise losses. (You may find your-

Crowds on Wall Street in New York City following news of the stockmarket crash in 1929.

self frustrated if you lose \$20, even if this barely affects your total wealth.) Prospect theory alone was deemed worthy of a Nobel Prize in economics, but Kahneman and Tversky contributed many more psychological insights about “heuristics and biases” to economic thought.

Once the flame of behavioral economics was lit, the torch was passed to researchers in economics and finance to continue this work. Richard Thaler, who won the Nobel Prize in economics in 2017, collaborated with Kahneman and Tversky and later would go on to publish a special series of articles titled *Anomalies* on phenomena that psychology-free economics could not explain, such as why stock prices tend to rise in January.

Behavioral economics at this time focused on identifying anomalies and offering psychological solutions to explain them. Once theoretical models were in place, a second wave of behavioral economics in the 2000s started focusing on documenting behavioral biases empirically—often large, real-world impacts—and incorporating them into other areas of economic research. For example, a key puzzle in development economics is why profitable investment opportunities, such as applying fertilizer, can have low take-up. The insight that people care a lot about changes in their relative wealth and hate losses (for example, if the fertilizer does not improve their crop yield) can help explain this puzzle.

In fact, behavioral economics became so well integrated into almost all fields of economics—finance, labor, public, development, macro—during this second wave of behavioral research that some might reasonably have thought, “We are done.” We have infused psychological realism into the classical Homo economicus, the economic person who always chooses optimally and looks more like a computer than a human.

Mind and body

But here is the problem: if we think of Homo economicus as a computer, then behavioral economics introduced the idea that this computer may have flawed software and may occasionally short-circuit. Yet, even with these flaws, the behavioral agent remained a computer, albeit one that malfunctioned somewhat. However the programming is set up—with a dose of overoptimism, recency bias, or sunk-cost fallacy—dictates how the behavioral agent proceeds forever.

And that’s decidedly not what happened with Depression babies. Their experience altered them profoundly. In fact, don’t the members of every generation have shared experiences that alter

them? That's why we have names for them, such as "baby boomers" for those born into the post-war boom.

This is what the most recent wave of behavioral economics aims to bring to the field. Humans are much more than computers, even computers with flawed software. They are living, breathing organisms affected by their unique life paths. Many economic researchers—in health economics and neuroeconomics, for example—have long argued that we cannot ignore the biological mechanisms that govern our bodies and rewire our brains. We are now in a position to see more systematically the missing pieces: humans have a mind and a body, and an economic science that describes human behavior needs to account for both.

How can this insight help us do economics better? Let's return to the Depression babies and how economic research has conceptualized what happened to their generation. Neuroscience and neuropsychiatry research tell us that our past personal experiences alter how we are wired. Decades of research on neuroplasticity document how the human brain continually reorganizes pathways based on new experiences. As our brain uses certain pathways more, these pathways become stronger. In contrast, pathways that are used less get pruned. Thus, in addition to the effects of hunger and stress, the Great Depression also persistently affected people's brains. The experience exposed the real-life danger of financial markets and how they could jeopardize people's ability to put food on the table. As a result, teens and young adults during the Great Depression of the 1930s were much less likely to participate in the stock market later in life. Only 13 percent invested in the stock market at all, less than half the rate of any later generation.

Experience effects

The concept of experience effects formalizes how personal lifetime experiences influence people's beliefs and decisions in a lasting way. It challenges traditional economic thinking that people use all available information to form beliefs. One approach is to model human thinking and decision-making under risk as putting more weight on outcomes that people, personally, have seen in the past. If they have witnessed a colossal stock market crash, they will assume it can happen again and, moreover, believe that the risk is high. In fact, decades of data on US stock market investment confirm this: Investors who have experienced lower stock market returns during the preceding years of their lives are less likely to invest in the stock market. Individuals with good experiences are more likely to invest.

But experience effects are not only about what happened in the recent past. An important insight is that different generations are shaped differently and, as a result, might even respond differently to the same recent event. A 60-year-old will react very differently to a financial crisis and stock market crash than a 30-year-old, simply because the 60-year-old has seen so much more in her life and is intuitively taking the average over all those experiences. The 30-year-old has seen much less. Therefore, a recent crisis spans a larger proportion of his life and will receive greater weight in his thinking and decision-making. This is not to say that Kahneman and Tversky were wrong about simple recency bias. Quite the contrary! Individuals exhibit clear recency bias, weighting recent information more than very old information. But it is only personal lifetime experiences that count, and it is against a lifetime of past experiences that new experiences are weighted.

Stock market data reveal other interesting facets of human decision-making. One is the "domain specificity" of experience effects: experiences matter only for decisions in the same domain. For example, stock market experience does not seem to affect bond market investment. Research also reveals that domain-specific experiences can extend beyond just stock or bond returns. Related research on the stock market investment of East and West Germans shows that those who lived under communism are much less likely to trust the stock market and invest in stocks, even years and decades after German reunification. Years of exposure to emotional propaganda about the stock market as the pinnacle of capitalism, which serves only a few, seem to have left their mark.

Emotions, which affect our perceptions, also play another role. East Germans who had a fairly good life under communism—even according to nonfinancial measures, such as living in one of the celebrated communist showcase cities—are the most adamant about the harms of the stock market and capitalism. However, those who suffered under the communist regime—say from the severe air pollution in East Germany or religious oppression—were much more likely to embrace the post-communism market economy.

These concepts of experience effects appear to apply to almost any realm of life. Unemployment experiences leave scars and make consumers cautious even many years later when they have stable and high-paying jobs. Banks with failing capital ratios respond with higher capitalization than others. Lived experiences of returns in the bond market affect investment in bonds. Individuals with higher

socioeconomic status tend to have a more optimistic economic outlook.

Inflation is another macroeconomic variable policymakers frequently examine. And, you guessed it, inflation experiences appear to meaningfully shape people's beliefs and decisions regarding inflation. Research using more than 50 years of survey data on inflation expectations has documented that the average inflation people have observed during their lifetimes strongly predicts their actual inflation expectations. And those experience-based expectations affect important real-world outcomes—for example, the choice to buy a house. It turns out that inflation protection is a key motivation for choosing to purchase a home (rather than rent). As a result, people who have experienced higher inflation are more likely to choose homeownership over renting and a fixed-rate mortgage over one with an adjustable rate, again to protect against rising inflation (and interest) rates.

The reach of experience effects is even longer: One inflation puzzle observed by the Federal Reserve in the United States, and noted in many other countries, is that women consistently had higher inflation expectations than men. Experience effects solved this puzzle by documenting a critical difference in experience between men and women: grocery shopping. Only in households where the woman was the primary grocery shopper did women have higher inflation expectations than their male partners. Since food prices have faced higher inflation (or at least higher volatility—and we know from previous research that consumers latch on to upswings), people who shop for food have higher inflation expectations. As long as gender roles keep more women than men doing grocery shopping, their lived experiences will continue to differ—and so will their corresponding beliefs.

Policymaker biases

Even expert policymakers act as predicted by experience effects. (Policymakers have human brains, after all.) The inflation forecasts of the Federal Reserve Board of Governors tend to be biased toward their lifetime experienced inflation and away from expert analysts' forecasts. And this bias makes their (the Federal Reserve governors') forecasts less accurate.

An extreme case is exemplified by Henry Wallich, who was raised during the hyperinflation in 1920s Germany and became a Federal Reserve governor in 1974. During his tenure, he dissented a record-breaking 27 times because he believed the Federal Reserve should be more concerned with inflation.

The four key features of experience effects that influence policymakers and laypeople are exactly the same:

- The long-lasting effects of experience
- Greater weight on more recent events
- Domain-specific experience effects
- The negligible effect of learned knowledge vis-à-vis experience-based beliefs, however distorted

Experience effects thus inform interventions and programs addressing crises in several important dimensions. First, policymakers typically face a trade-off between resolving crises quickly and the cost of doing so. The long-lasting ramifications of experience effects highlight the benefits of swiftly resolving a crisis. For example, the impact of the recent inflationary period on beliefs could affect how people respond to price swings for a long time. The shorter and milder the period, the weaker the long-term scarring. Conversely, the more traumatic

the experience during crises, the longer they will haunt people—even years later—as we saw with the Great Depression.

Second, the evidence on experience effects implies that policymakers ought to account for the different experiences of their different target populations. The same intervention might yield vastly different responses depending on how past events have shaped people's behavior and outlook. Ideally, any policy would be

fine-tuned for each country-age-gender cohort or at least consider their different lifetime exposures.

Last, experience-based learning shapes policy support, offering a robust alternative to purely informational approaches. Direct engagement, such as through a pilot intervention, can affect preferences substantially more than theoretical explanations. The Affordable Care Act (ACA) in the United States provides an example. Individuals on government health insurance who had direct, immediate benefits were more likely to support the ACA. Initially skeptical Republicans were especially likely to become supporters, which highlights how experience can overcome partisanship. Pilot programs give policymakers a path to test new policies and gauge how public sentiment is affected. Positive personal experiences among pilot participants can foster and ensure enduring public support. **F&D**

“The more traumatic the experience during crises, the longer they will haunt people—even years later.”

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MARCH OF THE MODELS

Niall Kishtainy

Economists turned classical word-based political economy into a mathematical discipline

Today's economists rarely consult Adam Smith's 1776 *The Wealth of Nations*, however celebrated it is for revealing the workings of the market. Contemporary practitioners are often more at home with concise journal articles full of crisp equations than with Smith's substantial tome, a sweeping work of historical and social as well as economic analysis that takes more than a few afternoons to wade through.

Smith is often considered the father of modern economics—and in the late 20th century his legacy was claimed by advocates of free markets and limited government—but contemporary economists' modeling and mathematics toolbox has little in common with Smith's literary, humanistic methods. Later economists often claimed proof for

Smith's famous notion of the "invisible hand" in their highly abstract "general equilibrium" theory, with its explanation of the conditions needed for a socially efficient market economy. It was Smith's hazy metaphor pinned down by cutting-edge math, which to be usable was applied to a model of the economy so simplified that Smith would hardly have recognized it.

But the story of how the wordy "political economy" of the 18th century turned into the the mathsy "economic science" of the 20th century is more circuitous than a Smith-centered account would suggest. An early tremor of the modeling earthquake that would later transform economics came to France in the decades preceding the publication of Smith's magnum opus. At the palace of Versailles, François Quesnay, the personal physician of Louis



XV's chief mistress, Madame de Pompadour, took up economics in his sixties and gathered a following that formed the first school of economic thinkers. Quesnay drew on the circulation of blood in an organism to create the first economic model, the 1758 *Tableau économique*, a diagram made up of zigzags that depicted the circulation of money and goods in an economy.

Enlightenment rationality

Writing on the eve of the Industrial Revolution, Quesnay believed that the ultimate source of economic value lay in agriculture, in particular in “net product”: what was left after farmers had taken what they needed for their subsistence. When farmers paid rent, landowners bought clothes and furniture and artisans bought food, the surplus moved through and powered the economy (the zigzags represented connected rounds of spending). In this way, the *Tableau* foreshadowed John Maynard Keynes' theory of the circular flow of income and the multiplier developed in the 1930s. A devotee of René Descartes and French Enlightenment thought, Quesnay attempted to analyze the economy using principles of consistency and rationality, watchwords for the modern economist; in earlier eras economic thinking was not systematic in its method and was heavily influenced by tradition and religion.

Another step toward the modern style of economics took place in the early 19th century when a wealthy stockbroker, David Ricardo, after reading *The Wealth of Nations* was inspired to develop his own system of economics, bringing a new standard of rigor and logic to the field. He imagined the economy as a giant farm whose land varied in fertility. When the population increased and there was more demand for food, farmers would have to plant their crops on less fertile land. Farmers on more fertile land, however, did not earn higher profits as a result; instead the landlords gained because farmers competed for the best land and were willing to pay more for it. Ricardo started off with a few assumptions and followed the logical implications relentlessly through long chains of reasoning, eventually concluding that landlords tended to gain at the expense of workers and capitalists.

Ricardo's efforts delighted one of his readers, the essayist Thomas De Quincey, who until then had been thoroughly fed up with what he considered the ineptitude of most economists of the day. (He claimed that any person of sound mind could easily “bray their fungus-heads to powder with a lady's fan.”) But on being given a work by Ricardo and perusing the first chapter, De Quincey was filled with wonder. Ricardo had finally uncov-

ered proper economic laws, De Quincey believed. They were “a ray of light into the unwieldy chaos of materials” that lesser economists could only flounder in as they tried but failed to make sense of the messy reality.

Small economic worlds

Ricardo's clever use of simplification and assumption allowed him to focus on the essentials of the problem at hand—to build a model of the economy. Ricardo made his models mainly verbally, Quesnay diagrammatically; neither used the abstract mathematics employed in today's economics. A contemporary historian of the economic method, Mary Morgan, argues that the modern discipline emerged as economists began imagining “small worlds”: distillations of economic reality as models, mathematical or otherwise, which over the 19th and 20th centuries became the basis of the subject. Just as a botanist examines the characteristics of butterflies, so economists investigate how one model behaves and how it compares with others, sometimes with little reference to the larger world the small world is supposed to represent. In this way, economists “inquire into” their models. They also use their models to “inquire with”: to see what a model actually implies about the larger world outside. Armed with his *Tableau*, Quesnay argued that high taxes on France's peasantry were stifling the economy because they reduced the size of the precious net product.

One of the most well-known small worlds in economics is the ingenious Edgeworth box every economics student learns about: a simple rectangle containing points that represent a pair of goods (apples and bananas, say) allocated to two people who comprise the economy. On top are overlaid “indifference curves,” which represent each person's preferences for the two goods. Starting from some initial distribution of apples and bananas to the two people, the diagram shows how an exchange of goods can take place to reach a “socially optimal” outcome (when neither person can gain from a further trade without the other losing out).

From any starting point in the box it's possible to trade toward an efficient position. Possible starting points include each person having a similar amount of goods or one person having almost everything and the other nothing. In this way efficiency and distribution are separated out: some outcomes might be efficient but highly unequal. The diagram shows elegantly a foundational result of economics—the first welfare theorem, which establishes the efficiency of competitive markets—and its geometry can easily be translated into the language of mathematics and into the sophisticated

general equilibrium theory that some take to be the modern incarnation of Smith's economics.

Mathematical method

The Edgeworth box, named after Francis Edgeworth, a mathematician and economic theorist in the late 19th century, formed part of the so-called marginalist revolution in economics, which introduced the use of calculus to represent "marginal" changes in variables, such as marginal utility, the change in a person's utility as a result of a small change in the consumption of a good. From then on, the small worlds of economics would increasingly be made up of equations. During the 20th century, diverse areas of economics were taken over by the mathematical method, including the macroeconomics that developed from Keynes' work, the growth theory pioneered by Robert Solow, and the modern industrial economics based on game theory, as well as the econometrics that connected theoretical models with the data.

The shift from the classical to the modern neo-classical approach to economics wasn't simply a matter of style but reflected a new way of looking at the world. Smith depicted people as driven by all sorts of motivations and desires. When doing business they would haggle to strike a good bargain, but they were also prudent, upstanding, and sympathetic toward others—and capable, too, of getting bored and disheartened. To fit economic behavior into its tight models, the modern discipline jettisoned these complex portraits of humans in favor of those that were simpler and highly stylized. Inside Edgeworth boxes live not passionate human beings but bloodless "economic agents": self-contained dots of consciousness who don't scheme and hustle or get jealous and dispirited but calmly make consistent choices between the array of goods available to them. Their identity consists solely in their ability to choose according to rational precepts, and their single-mindedness makes it easy to lock them up in a simple rectangle or equation.

Ricardo used his theories to press for abolition of Britain's Corn Laws, and on hearing him make the case, one member of Parliament said that Ricardo "argued as if he had dropped from another planet." Clearly, Ricardo's rigorous style of reasoning seemed new and strange, but the charge that economists are otherworldly still echoes. The great early 20th century Austrian economic thinker Joseph Schumpeter deplored some of the consequences of the transformation of economics into a modeling discipline. In particular, he attacked Ricardo for devising theories that left out important but inconveniently complicated aspects of social reality. Schumpeter argued that to form his chains

of logic, Ricardo had abstracted and simplified so drastically that his results were practically tautologies. Schumpeter was too hard on Ricardo, but critics continue to accuse economists of indulging in something like the "Ricardian vice"—forever playing with economic models that are ingenious and elegant but completely unrealistic.

In the early years of this century, economists were lambasted for failing to foresee the global financial crisis. Their assumption of "rational agents," it was said, made them oblivious to the irrationality and malfeasance in plain sight in the spheres of high finance. They lacked the breadth of the classical economists, and their narrow vision failed to detect the pathologies in the real economy that would cause economic misery for so many. Similarly, the negative consequences of rising inequality are now recognized by many economists, but

“Good economics must strike the right balance between models as objects fascinating in themselves and as instruments to peer into the chaos of economic reality.”

has this realization come in spite of their theories? In the small world of the Edgeworth box, the distribution of resources is represented by the placement of a dot in a rectangle, an abstraction so radical that it completely excises the messy history of institutions and power that influence who wins in the struggle for wealth.

Have economists done too much inquiring "into" at the expense of inquiring "with"? If so, then the remedy isn't necessarily to ditch modeling and mathematics but to use them more deliberately in support of eco-

nomics' early humanistic values. The ingredients may already be available. Alongside neoclassical economics, there have always been unorthodox traditions of economic thought based on a diversity of methods, and recently the mainstream branch of the discipline has begun to broaden its approach. In particular, the burgeoning field of behavioral economics has introduced more realistic economic models that use psychological concepts. And the success of Thomas Piketty's 700-page *Capital in the Twenty-First Century* shows that there's still appetite for fat books that present big historical narratives and powerful critiques of contemporary capitalism.

Good economics is likely to continue to depend on new theories that simplify in useful ways while striking the right balance between models as objects fascinating in themselves and as instruments to peer into the unwieldy chaos of economic reality. **F&D**

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Paying Africa's Climate Bill

Michael Olabisi

A GLOBAL APPROACH TO CLIMATE CHANGE REQUIRES PRIVATE SECTOR FINANCIAL FIREPOWER



The world's poorest countries, especially those in Africa, are struggling to pay for investment to stave off a climate crisis they did not create.

More public debt is not the answer: climate investment needs exceed the lending capacity of multilateral finance institutions, and many African countries are already in a funding squeeze. What's needed are novel solutions—chiefly, stepped-up private sector investment for climate action in poor countries. And these efforts cannot be simply country-based. They must be geared to achieve global goals for net zero greenhouse gas emissions.

The stakes in Africa are heightened because the continent will contribute the most to human population growth in coming decades. This will increase the need for funds to mitigate climate-warming emissions. At the same time, a greater share of the region's agriculture will be exposed to climate-linked productivity losses. Millions of families in Mali, Niger, and Senegal understand from experience the horror of desertification, which is set to worsen without climate action. On the other hand, Africa's large coastal cities—including Lagos, its most populous metropolis—have no meaningful defense against rising oceans.

Based on the size of their economies, African countries face a disproportionate burden to avoid the worst of climate change. For example, while China needs to raise its annual climate mitigation spending by 2 percent of GDP through 2030, Cameroon needs to increase spending by 9 percent of GDP, according to the World Bank's 2023 Country Climate and Development Reports. The five countries of the West African Sahel—Burkina Faso, Chad, Mali, Mauritania, and Niger—some of the poorest in the world, need to increase spending by about 8 percent of GDP on average.

The continent's required climate funding comes on top of the existing need for development financing, in addition to resources for COVID crisis recovery. Inadequate and missing public services in health, transportation, and education in many African countries hold back economic growth—and some have resorted to debt to address development financing gaps.

Additional borrowing to pay for climate mitigation is not a good option, for at least three reasons.

First, poor countries have limited ability to borrow. They must either pay above-market rates to borrow in international debt markets (Olabisi and Stein 2015) or must accept burdensome conditions from multilateral and development lending institutions. With rising debt, the ratios of service payments to revenues are troubling for many governments.

Among the continent's largest economies, South Africa's had debt of nearly 70 percent of GDP in 2021; Nigeria's was about 40 percent. The pressure to spend on climate mitigation and governments' inability to do so have the makings of a crisis that is not entirely of the countries' making.

Second, investment needs are beyond the capacity of the world's multilateral lending and development institutions. The global need for investment to address the worst of climate change exceeds \$1.3 trillion a year for the next decade. This amount will not address all climate issues; it will only avoid the worst effects. The African Development Bank estimates that Africa needs to spend \$3 trillion by 2030. For context, all sub-Saharan Africa combined had a GDP of \$2 trillion in 2022. Even if you added the entire \$1 trillion lending capacity of the IMF to the \$400 billion lending portfolio of the World Bank, it is clear that the global financial institutions do not have the lending capacity to address climate change at the speed and scale needed. If the lending capacity of the regional development banks is added to the mix, we would come close to the scale of financing needed. But in that case banks would do little else over the next decades but finance the green transition and urgently needed climate adaptation.

Third, public debt may not be the most effective financing mechanism for some of the most promising climate interventions. Debt may not always work as a means to deploy relatively recent technologies at scale, often in settings where such technologies are untested. Some of the principal technologies for climate mitigation or adaptation—such as solar- or wind-powered irrigation for farmland or retrofitting residences and industrial sites—do not fit the mold of typical debt-funded public projects. Much of the necessary climate funding is to prevent severe human and economic losses. The auxiliary goal of climate financing is to boost the adaptive capacity of local economies. Neither boosting adaptive capacity nor avoiding asset losses looks, in principle, like a bankable venture that can produce a steady cashflow stream.

Climate-friendly finance

In exploring new ideas, one possibility is the supplementation of debt with other financing arrangements that meet the challenge of climate change.

Africa is a prime location to create opportunity from this crisis. The need for energy fits with the abundant renewable energy potential of the continent. Africa's solar potential greatly exceeds its fossil fuel resources. If high-income countries are looking for markets, Africa is poised to have 2 billion consumers of food, energy, and water by 2050.

A man walks by a car covered by sand in the village of Boumdeid, near Kiffa, in Mauritania.



The Benban Solar Park in Benban, Egypt.

If the need is for labor and new ideas, the youthful population of the region is seeking opportunities for work. The world can choose to leapfrog the impending multiple crises of climate and development financing by setting the conditions for a rapid transition to sustainable energy and responsible natural resource consumption for the region, while it is still a continent of 1.2 billion.

This challenge calls for novel approaches to financing. Spending to address climate change is not optional, given the severe human and economic losses that accompany unmitigated greenhouse gas emissions. For many African countries, there is no fiscal policy wiggle room for structural adjustment.

Engaging private markets

The private sector has enough to support the \$1.3 trillion a year needed for climate adaptation. Starting with some ballpark figures, the top 500 global corporations earned more than \$2.9 trillion in profits in the fiscal year ended March 2023, on revenues of about \$41 trillion. For the United States alone, gross private domestic investment was about \$5 trillion in the third quarter of 2023. If the corporations making these investments converged uniformly on climate action the US private sector alone could, in principle, fund a global renewable energy transition 15 times over.

If most companies saw the renewable energy transition as their primary business opportunity and were offered incentives that encouraged investment without national barriers, climate action would get a much-needed boost. This pathway could complement other efforts toward a global carbon pricing mechanism if such mechanisms had robust revenue-sharing commitments to developing economies.

The burning question is, How can governments and international institutions nudge corporations to protect the global commons by investing in the low-income countries with the greatest need for climate financing?

Broadly speaking, governments can pressure corporations to invest in a green transition through any combination of approaches: regulation, taxes matched with direct public investments, or cap and trade. New-energy vehicle requirements in China and zero-emission vehicle mandates in California, as an example of a regulatory approach, have led corporations to invest massively in new production systems. The regulatory steps seem to work, but more is needed. A global carbon pricing mechanism is one example of a tax, while a global cap-and-trade mechanism can be defined to set limits on fossil-fuel-based economic production, matched with tradable points for renewable-en-

ergy-based production, among other possibilities. The most meaningful approach will depend on the type of investment needed, and the effectiveness of each approach will depend on the political economy of the context. Regardless of each country's specific approach, however, effective climate action could benefit from tapping the private sector's financial resources when public resources are limited.

Public incentives to spur private investment seem particularly appealing for some of the challenges that need timely action in low-income countries, and especially for African economies with little fiscal space. However, current public incentive programs are typically designed to spur spending for country-specific climate goals. The mismatch in policy efforts here is that climate action should be based on optimization at a global scale.

It is a failure of policy if the governments of northern European countries such as Germany and the United Kingdom pay billions to support the in-country installation of solar panels that could produce 40 percent more energy in a tropical setting such as Côte d'Ivoire or Ghana. Spending billions on additional wind farms in California that yield less energy per dollar than a comparable investment in Kenya suffers from the same flaw. If the vast renewable energy potential of areas near the equator can be hooked into global value chains through trade—yielding climate gains, as well as profits that feed back to the German, British, or Californian sources of the investments—it may be the policy win of the century.

Win-win solution

Speeding the renewable energy transition in African countries is needed for the sake of the world. It can be a win-win, if done right. Local economies win, as the investment drives local development, while the global economy wins from the combination of sustained profits and climate losses avoided. The reason policy holds back this win-win scenario is that the global accord for climate action has no teeth, and the rewards to private actors spending on climate action are limited by national boundaries.

The current pattern of energy investment in Africa highlights both the opportunity to do better and the failure of a system without coordinated incentives (Olabisi, Richardson, and Adelaja 2022). Public and private energy financing from Group of Twenty countries and multilateral development banks to African countries averaged

about \$35 billion a year between 2012 and 2021. The private sector provided just over 40 percent of the funds. The largest chunk of financing—\$83.5 billion—went to gas and liquefied natural gas projects (Moses 2023). Spending on other energy sources, including renewable options such as solar, hydro, and wind, lagged sorely behind. Corporations are open to spending to meet energy demand in Africa, so the burden of investment is not purely public, but their efforts follow the short-term gains—such as those from fossil fuels. Just imagine the impact of a global climate fund paying the marginal incentives that would boost private sector returns on solar and wind in Africa above the gains from gas projects.

At some point, policymakers and the private sector will have to agree that the better way to profit from private enterprise must be ecologically sustainable. Or better yet, the approach should remediate the planet to improve the quality of life for future generations. The private sector and its linked equity markets can, with the right policy guidance, channel resources to finance a green transition faster than governments can raise debt for a purely public approach to salvaging the global commons.

Today, we have private corporations with significant global reach in the renewable energy business that were nonexistent or barely existent three decades ago. A growing number of billion-dollar companies in the renewable energy business have room to grow further with the right public policy postures. The speed necessary for effective climate action, especially in many African countries, calls for private sector initiatives, along with astute global governance. Can we imagine a future when most corporations pursue global ecological sustainability because their economic sustainability depends on it? **F&D**

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“The current pattern of energy investment in Africa highlights both the opportunity to do better and the failure of a system without coordinated incentives.”

Containing Technology-

Signe Krogstrup, Thomas Sangill,
and Mette von Sicard

**AI, SOCIAL MEDIA, AND MOBILE BANKING MAY
BRING MORE BANK RUNS; SAFEGUARDS OF
YESTERDAY MAY NOT BE SUFFICIENT TOMORROW**

The sudden withdrawal of bank deposits—accelerated by digital technology—contributed to the failures of Silicon Valley Bank, Signature Bank, and First Republic Bank in the United States and Credit Suisse in Switzerland in the spring of 2023. While a complex set of factors led customers to lose confidence in these banks' financial health, the spread of rumors on social media and access to deposit withdrawals with the click of a button in mobile apps contributed to the speed with which customers moved their money out of the banks. The speed was unprecedented: in earlier episodes of bank runs, such as during the global financial crisis, social media and mobile banking apps were unheard of or barely existed.

Banks differ, and the reasons customers may suddenly question a bank's viability vary. As events in 2023 illustrate, however, the risk of sudden bank runs may generally be affected by advancing digital frontiers in banking.

Silicon Valley
Bank in Santa
Clara, California,
on March 13, 2023.



-Driven Bank Runs



A bank run occurs when many customers simultaneously withdraw their deposits because they are worried about the bank's financial health. Although some deposits are often insured through national deposit guarantee programs, uninsured deposits may be withdrawn when there are concerns about a bank's health. Even if the bank is fundamentally healthy, suspicion of problems can potentially be self-fulfilling if the bank does not have enough liquid funds to meet customer withdrawals.

In the worst-case scenario, a bank that would otherwise survive may collapse if concerns trigger a bank run. The effects of bank runs can go beyond the cost to banks' owners and remaining creditors and can become a financial stability concern. Bank runs can be contagious, and adversely affect real economic growth. For this reason, financial authorities and regulators have set up a governance framework for containing this risk.

Speedy bank withdrawals

A typical bank funds itself mainly with deposits from its business and household customers. The bank holds on to a fraction of these deposits to meet potential withdrawals. The rest is used to generate income for the bank. For instance, the bank will offer loans to individuals or businesses in need of funding.

This business model relies on depositors not withdrawing their money all at once. In this case, the bank cannot pay it all back because the deposits are now tied up in longer-term lending to other bank customers.

In normal times, deposit funding of bank lending activities is rather stable. Depositors usually keep a certain balance in their accounts to pay for such expenses as housing and groceries. Individual depositor account fluctuations generally cancel out over time across the many account holders of a bank.

But if rumors emerge that a bank may be at risk of collapse, widespread deposit withdrawals may occur. If withdrawals happen slowly, the bank has time to find funding elsewhere or sell assets to raise funds. Fast withdrawals, on the contrary, can bring down a bank before it can secure funding alternatives.

The potential speed of withdrawals is hence crucial. As the digital frontiers of banking further advance, the speed with which bank customers can withdraw deposits may further increase. Without appropriate adjustments to banks' management of such funding risks, this could pose a potential threat to financial stability.

Quick transfers between banks

One way that bank withdrawals can become faster is through easier and faster transfers to other banks.

“While the future impact of AI and tech innovations in banking is uncertain, it is possible to imagine that the frequency of bank runs may increase significantly.”

Historically, transfers of deposits between banks have been somewhat limited. Among the reasons is that many bank customers typically have accounts with only one bank, notably because it is time-consuming to collect information about terms and conditions and open an account with a new bank. It may also be expensive to change banks.

New technology may eliminate some hurdles. For instance, online and mobile banking services have made it easier for customers to transfer money between banks 24/7. Increasing access to cheap instant payment systems is reducing the time it takes for a customer to transfer money from one bank to another. It is also likely that personal banking relationships, and the associated loyalty to a bank, play less of a role when banking relationships are increasingly digital.

Artificial intelligence may also accelerate bank withdrawals and transfers. Today, AI-powered tools can analyze an almost unlimited amount of data at high speed, including banks' terms and conditions and news flows from both social media and more traditional media, such as newspapers. Based on such analysis, future AI-powered tools may help bank customers automatically and instantly reallocate deposits across different banks, based on criteria set by the customer. Such criteria could include the interest paid on deposits, perceived bank safety, or the customer's wish for diversification across banks.

Regulatory requirements, such as the requirement to verify the identity of their customers (know-your-customer requirements), may not prevent AI-powered tools from opening accounts on behalf of a customer. Once a customer uploads the necessary documents and mandates to an AI-powered tool, it may be able to engage in dialogue with several banks and confirm the customer's identity.

While the future impact of AI and tech innovations in banking is uncertain, it is possible to imagine that the frequency of bank runs may increase significantly.

Fighting tech with tech

Although new technology can increase the risk of bank runs, banks may also use technology to reduce the risk. For example, AI tools may be developed to improve liquidity management and monitor withdrawal patterns, which could help lower bank-run risk.

Other tools to reduce run risk include adequate funding—such as more equity financing or more liquid assets on banks' balance sheets—that can be used quickly to raise funds to repay depositors. Banks may themselves find it optimal to use more equity financing or hold more liquid assets—or they may be required to do so if authorities are concerned about systemic financial risk. Authorities may also extend deposit insurance and access to central bank funding facilities in case of a crisis. In addition, appropriate recovery and resolution regimes can help restore confidence in the financial system after a bank failure to avoid the spread of bank runs.

The set of tools is not a panacea, however. Each tool can have undesirable side effects that should be balanced against their benefit of reducing risks. Take a potential requirement that banks place more of their deposits in assets that can be sold immediately at no cost, such as high-quality government bonds. In case of a run, the bank can quickly sell the bonds and pay back its depositors. In the extreme, all deposit funding could be placed in highly liquid safe assets, which would effectively eliminate bank runs. However, it would also mean that bank lending to households and businesses would have to be financed by other means, notably equity or long-term borrowing on the part of the bank. There is a risk that it would reduce lending to the real economy, temporarily or permanently. It could also affect the balance sheets of central banks and governments, as well as asset prices, because of higher demand for safe liquid assets.

Expanding deposit insurance programs would also reduce risks. However, depending on how the insurance is financed, high coverage could impose unacceptably high costs on the public purse in case of bank failures: a sufficiently large prepaid insurance fund in many cases would be difficult to put in place up front. Such coverage could also interfere with banks' incentives to behave prudently (creating moral hazard). Similar effects are present if banks' access to central bank emergency lending is extended. This move could place the central bank

at risk of a financial loss, and it may lead to risky behavior of banks or disruption of the interbank loan market.

In employing such tools, the potential adverse side effects should always be balanced against the benefit to society of risk reduction, and some risk will always remain. Our point is that with new technological advances, this balance may have to shift.

Central bank digital money

The increased use of electronic payments in place of cash has led a growing number of central banks to consider introducing a central bank digital currency (CBDC). A CBDC would allow households and firms to convert their deposits at commercial banks into deposits at a CBDC account—that is, at the central bank.

A deposit with the central bank would in most cases be considered very safe. Depending on how they are designed, CBDCs might shift the dynamics of bank runs, transforming them from runs between commercial banks to runs from commercial banks to the central bank's balance sheet. If there are no constraints on the account at the central bank, customers of a commercial bank perceived as risky might opt to shift all their money to the central bank. The concern is that this option may in itself increase the risk of, or exacerbate, bank runs. Notably for this reason, some central banks considering the introduction of CBDCs are contemplating constraints on how much money a household or firm can deposit in a CBDC account.

However, if future technology in banking substantially increases the speed of possible deposit withdrawals, the speed of bank runs may be unaffected by the presence of even unlimited CBDCs.

We do have tools available to address bank-run risks, but it is crucial to acknowledge that there is no silver bullet.

Each tool comes with its own set of advantages and drawbacks. However, given the unpredictable nature of technological breakthroughs and their uptake in financial markets, it is important to follow developments closely and consider how best to adjust the toolkit. What ensured the safety of the financial system yesterday may not prove sufficient tomorrow. **F&D**

SIGNE KROGSTROP is a member of the Board of Governors of Denmark's central bank, where **THOMAS SANGILL** is head of International Economics and Relations and **METTE VON SICARD** is senior advisor overseeing matters concerning the EU and the Bank for International Settlements.

Incomplete Picture

Suresh Naidu

THE TRADITIONAL ECONOMIC MODEL OF HOW WAGES ARE SET FAILS TO REFLECT THE REAL WORLD

In the standard model of the labor market, taught in introductory economics classes around the world, there is nothing special about the relationship between employer and employee. Instead, the model simply relabels the canonical supply-and-demand diagram, magically transforming price floors into minimum wages and unions into monopolists. The labor market is governed by the same forces of supply and demand as are refrigerators or carrots, according to the model. Because labor market institutions and norms impede these forces, the model considers them merely obstacles to efficiency.

This perfectly competitive view of the labor market is not entirely wrong. But it is incomplete—and has pushed economic-policy thinking to focus on demand and supply as the only things that matter for labor market outcomes. It presumes that the law of one price—which postulates that identical commodities have the same price everywhere—includes workers and their wages. As a result, the model considers the supply of human capital and technology-induced demand as the sole levers that move labor markets, with little role for firms, norms, or interventionist institutions, such as labor unions

and governments. The perfect competition model generally portrays efforts to shape the terms of voluntary contracts between workers and firms (like union negotiations or minimum wages) as either of secondary importance at best or counterproductive at worst. As the late Milton Friedman wrote, “The employee is protected from being coerced by his employer by the existence of other employers for whom he can work.”

But the empirical implications of the theory do not much match up with the real world. For example, in the hypothetical case of a company reducing wages by 10 percent, the perfect competition model predicts that *all* workers eventually will quit and go to competitors. Firms have no scope for wage setting, and the market determines a worker’s value at every firm.

A dose of reality

But experimental and quasi-experimental estimates in relatively unregulated scenarios all suggest that is not what happens. The number of workers who leave in response to a wage cut is much smaller, perhaps 20 to 30 percent—and in developing economies, lower still. This suggests

A man carrying a signaling disc with the writing no wage less than 8,50/h in front of the German Bundestag in 2014, in Berlin, Germany.

THOMAS TRUTSCHHEL/PHOTOTHEK VIA GETTY IMAGES



that employers have wide latitude to set wages. A higher wage does help recruit and retain workers, but the market does not seriously constrain companies' wage decisions, and different employers can make different choices. That is, employers exercise monopsony power—the labor market analog of demand-side monopoly power that gives sellers a degree of control over pricing.

Dissatisfaction with the traditional depiction of the labor market is not new. The oldest criticisms of this model—for example, that it does not predict involuntary unemployment—remain true. And new ones have emerged—such as the importance of firms, market power, and cultural norms.

Nevertheless, despite a large collection of theories and evidence from the 1980s that poked holes in the model, the traditional framework remains the default model for pedagogy and economic policymaking. Prior to CORE Econ (Curriculum Open-access Resources in Economics)—an open-source economics textbook project I am involved in—the model of the labor market in introductory textbooks was some version of supply and demand. Various other economic forces are acknowledged as possible deviations from the basic model, but the model has not changed. As a result, for example, there is pervasive bias in US employment law that both firms *and workers* can readily terminate an employment relationship at low cost.

Cracks in the edifice

Much of the current criticism of the traditional labor market model stems from increasingly wide empirical cracks in the economic paradigm:

- Although the basic model postulates that firms do not matter much because all workers doing the same kind of job should get the same market wage, it is clear that employer behavior is responsible for a significant share of wages. Early 20th century labor economists had marshaled some evidence on this point, but the advent of high-quality matched employer-employee data, combined with transparent quasi-experiments, has moved the research frontier considerably.
- There is a large body of evidence showing some firm-specific wages that reflect in part the productivity and profitability of their employers, which conflicts with the law of one price.
- It is remarkably difficult to find negative effects of a minimum wage on employment, although the perfectly competitive model predicts that a minimum wage increase would make the least productive workers expendable, with no countervailing effects on turnover or effort.
- There is robust evidence to suggest that labor market concentration is negatively correlated

with wages and that mergers of large employers lower wages. Moreover, there is more recent evidence that unions and minimum wages mitigate the negative effect of concentration on wages.

- Most directly, quasi-experimental changes in wages across workers, all else equal, lead to only moderate changes in quits and recruits.

All this evidence points toward pervasive monopsony as a force in the labor market, where firms set wages for groups of workers, losing those who have better outside options but making profits off those who do not.

While monopsony is but one thread in a web of forces that make the labor market messier than the supply-and-demand model, it is readily seized on to explain aberrations in the labor market because it is both empirically quantifiable from readily available data and conceptually not too far away from the safe space of Economics 101. Simply relaxing the assumption that firms take market wages as given already yields a much more plausible view of the labor market.

Job searches are difficult

Large firms set wages for a whole set of jobs without having to compete with themselves, which creates a bubble of noncompetitive behavior within a workplace. Employees find searching for jobs costly, and many vacancies and possible matches are communicated only informally through social networks. Evidence shows that workers have relatively little credible information on jobs outside their firms (Jäger and others 2022).

A major reason that labor market monopsony exists is that jobs are more than sources of income and employees factor in more than compensation when making job choices. Among other things, jobs also offer social experiences and status and sometimes confer identity. Many aspects of a job matter—including relationships with coworkers and supervisors, commute times, tastes and abilities for particular tasks, scheduling, and hours. People value work they think others think is valuable. Subjective experiences of work—such as meaning and sense of purpose, managerial respect, and the experience of dignity—are important to workers.

The taste for the same job and knowledge about outside jobs vary among workers, which gives employers some scope to reduce wages, losing some workers who would rather work elsewhere but keeping those for whom the job is the best they could hope to find.

Antitrust policy is one area that has focused on monopsony in labor markets. Although traditional antitrust analysis is concerned mainly with consumer welfare, recent legal and economic research high-

Signs lie in the street before the start of a rally in support of minimum wage increase in New York in April 2015.



lights the role of employer market power. There are cases under active investigation by antitrust authorities in the United States, and recent horizontal merger guidelines (for combinations of companies in the same industry) suggest that mergers should be screened for harm to workers. Further, antitrust authorities have pursued restrictions on noncompete clauses (which limit an employee's ability to work for a competitor) and no-poaching agreements (in which companies agree not to solicit each other's employees). Both are horizontal (same industry) restraints that putatively dampen labor market competition.

Wage-setting power

But Naidu and Posner (2022) argue that antitrust is only part of the solution to monopsony, because much of a firm's monopsony power is intrinsic to labor as a commodity and not the product of artificial constraints or undue concentration.

By any measure, labor supply does not exhaust the constraints on firms' wage-setting decisions. And monopsony is only part of the wage-setting calculation for firms. For example, just because employers have market power doesn't mean they use it all. There are many countervailing constraints—internal ones, such as the need to motivate

workers to exert effort and care, management interests in empire building rather than simple cost minimization, norms of fairness and reciprocity, and those that are external, such as patterned wage setting (when firms emulate each other's wages), minimum wages, and unions.

Although monopsony alone emphasizes getting bodies into the workplace, older literature on efficiency wages (those set higher than minimum to keep a desirable workforce) stressed the behavior of people once they are at work. A monopsonist that also wants effort must restrain its wage-setting power. Much research in personnel economics has examined the design of jobs, teams, and incentives inside a firm. But little of this literature has considered how these interact with the diversity of outside options for workers who have identical productivity—a scenario that is stressed by monopsony analysis. For example, Dube, Giuliano, and Leonard (2019) find that large quit rates in response to discontinuity in wage policy are driven by aversion to unfair and arbitrary changes in wages.

It is not even clear that firms are perfectly optimizing their profits. The textbook model suggests that firms set wages to maximize profits. But if optimizing is difficult for managers to accomplish,

monopsony gives firms some slack to make mistakes. Dube, Manning, and Naidu (2018) document pervasive round-number bunching in administrative data, in which the most commonly occurring nominal hourly wage is a remarkable \$10.00 over a long period of time. They also show that bunching is not the result of workers being fooled into thinking round numbers are artificially high; it occurs because employers fail to set wages with an eye to precise maximization of profits. This finding is consistent with recent research documenting widespread uniform wage setting—national employers setting countrywide minimum wages, regardless of local labor market conditions, or multinationals propagating home-country minimum wages to their locations around the world. When employers have labor market power, they do not need to engage in a costly search for a perfectly profit-maximizing wage; employers can afford to over- or underpay workers because they do not lose a lot of profit. But when managers—for example those with MBAs—do in fact focus on profit maximization, wages are lower and turnover higher (Acemoglu, He, and le Maire 2022).

One thing employer wage setting makes clear is that power is exercised in the labor market, either through monopsony power over wages or through the threat of unemployment. A *laissez-faire* labor market implicitly allocates wage-setting power to employers. The history of government regulation of the labor market is marked by an understanding that in the interest of workers there should be some countervailing force against this power. But some efforts to regulate labor markets wind up allocating more power to an unaccountable regulator or to a possibly undemocratic union than to workers. And even well-intentioned but mistargeted reforms can create conditions in which unemployed workers line up for jobs and remain vulnerable to being excluded from employment.

Blunt instrument

For example, while the minimum wage is a popular antidote to monopsony power, it is a blunt instrument, able to target only wages at the bottom of the distribution. When minimum wages are imposed or raised, the number of low-productivity jobs may shrink, but labor market monopsony implies that high-productivity jobs will expand, and the overall effect on employment will theoretically be indeterminate. But labor market standards set from afar by a regulator that does not consider the interests of affected workers are more likely to be too high or too low, fail to account for specific nonwage amenities employees value, and be unable to target the monopsony of higher-productivity firms in the same labor market. Recent evidence suggests that

in the United States, on balance, minimum wages have not been set too high.

There is renewed interest in the labor movement. Collective and sectoral wage bargaining between employers and democratic unions has the potential to improve efficiency, fairness, and the balance of power in the labor market. Workplace unions and worker representatives have private information about both the constraints facing their employers and the nonwage amenities valued by their workers. When backed by the bargaining power of a larger union federation or a government mandate, effective worker representation could offset employer power in ways attuned to local labor market and workplace conditions. Recent research suggests that, at least in Europe, increased worker representation has few observable adverse consequences. Perhaps, to the frustration of many managers, worker representation also imposes governance structures on the workplace—such as regulating childcare, parental leave, remote work, scheduling, promotions, and health and safety conditions. But this is a consequence of unionized labor markets that alter the allocation of power between employers and workers. How this plays out in practice will depend on the inclusiveness and accountability of union governance. Increased worker representation does, however, open the way for more democratic and efficient workplaces than the *laissez-faire*, employer-dominated alternative. **F&D**

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EMILY ELCONIN

People in Economics

The Accessibility Economist

Bob Simison profiles the University of Michigan's **Betsey Stevenson**, a leader in the movement to rethink economics

“PEOPLE FEEL THAT THE ECONOMY IS RIGGED AGAINST THEM,” says University of Michigan economist Betsey Stevenson.

“We need to design an economy that feels fairer to people,” she says. “This is the challenge of our times. It is at the heart of our political battles and at the heart of a lot of anger.”

Stevenson is among economists who are seeking solutions. But she analyzes the issue in a way that economists traditionally haven't, taking into account not just economic indicators but also public perceptions. It's part of how the 53-year-old labor economist is helping to lead a rethinking of economics and economies.

Since she completed her PhD at Harvard in 2001, Stevenson has published groundbreaking research on the importance for women in the workforce of the US Title IX prohibition against sex-based discrimination in federally funded education programs, on the economics of family structure in the wake of divorce law liberalization, and on the connection between income and happiness.

She was an important player in the Obama administration, and she has established herself as a top economic policy advisor to lawmakers, including serving on the Biden-Harris transition team and testifying regularly in Congressional hearings. She is currently working to help reinvigorate the national debate on developing a universal basic leave policy, an issue she's been working on since her time on former President Barack Obama's Council of Economic Advisers.

Stevenson and life partner Justin Wolfers, a Harvard-trained economist who is also at the University of Michigan, published an innovative, influential, and increasingly widely used college economics textbook. They wrote it using realistic examples to make economics accessible to a wider, more diverse swath of students. In 2020-21, they produced a series of more than 50 podcasts, “Think Like an Economist,” discussing economic concepts in everyday terms.

Different thinking

“Betsey thinks in ways that are different from other economists,” Wolfers says. “Betsey’s gift is that she can be an economist and a real person at the same time. She connects with people. She hears, understands, and gives voice to their concerns. One of the great failings of our profession is that we are not good at communicating.”

Several months ago, the Obama Foundation engaged Stevenson to lead a group of outside advisors in developing economic recommendations for a speech by Obama at the foundation’s Democracy Forum in Chicago.

“She was the first person we thought of, our go-to person for how to make economic policies fairer,” says Valerie Jarrett, the foundation’s CEO, who was a senior advisor to Obama.

A “major factor that’s eroding confidence in democracy,” Obama said in the speech, is “the widespread sense that the global economy is rigged.” To “build an economic order that’s more inclusive, more sustainable, more just,” he urged stronger labor laws, an expanded social safety net, fair global taxation of the wealthy and corporations, and more international cooperation around fair trade.

“Betsey and her colleagues were instrumental in helping President Obama formulate the recommendations in that speech” Jarrett says. “Betsey has the ability to take complex economic ideas and policies and break them down to explain the impact on people. For example, how much money equal pay, paid leave, and paid sick days would mean in people’s pockets.”

Jarrett also praises Stevenson’s creativity and unflappability.

“Whenever I walked into a room in the White House and Betsey was there,” she says, “I felt better. She always had new ideas, and I knew she would keep trying until we figured out economic policies that would be fair and equitable.”

Stevenson says she’s always seen the world through the lens of an economist, evaluating choices in terms of costs and benefits, and has always taken a keen interest in people and what drives their behavior.

“Economics is an orderly, systematic approach that gives insight into why the world is the way it is and why people make the choices they make,” she says.

She grew up in half a dozen states, the daughter of an Air Force pilot father and a mother who was a fine arts administrator. After completing high school in Virginia, she earned her undergraduate degree in economics and mathematics at Wellesley College in Massachusetts, her mom’s home state.

At Harvard, her doctoral committee included 2023 Nobel laureate Claudia Goldin and her husband, Lawrence F. Katz, the influential editor of the *Quarterly Journal of Economics*. The Nobel Prize honored Goldin for her work in advancing the understanding of women and the American economy.

Title IX

Goldin cites a series of papers by Stevenson on the impact of Title IX, beginning with her dissertation. The provision, part of federal civil rights legislation enacted in 1972, bars discrimination based on sex in education programs and activities. Stevenson’s work showed that giving girls access to opportunities in high school sports dramatically increased women’s enrollment in college, participation in the labor force, and advancement into managerial positions.

“Betsey was the first to show the enormous impact of Title IX,” Goldin says. “She showed impacts far beyond the classroom.”

Stevenson says the research grew out of an economic puzzle.

“Americans had the highest returns to investments in education internationally despite the lowest test scores,” she says. “So what were kids learning that paid off? Sports teaches real skills, grit, hard work, and following the rules. Having those opportunities was very important for changing women’s lives.” (Stevenson acknowledges that she herself wasn’t an athlete in high school.)

As a graduate student, Stevenson thought like an economist by finding shopping efficiencies in the nascent internet retailing economy, Goldin says. Stevenson would order multiple sets

of shoes from Zappos and have them delivered to her at the National Bureau of Economic Research near the Harvard campus, Goldin says.

“She had a good relationship with the UPS delivery person and got him to wait while she tried them on,” Goldin says. Stevenson might keep two pairs and send the rest back.

Stevenson met Wolfers, a Fulbright scholar from Australia, while at Harvard. They started dating after a Halloween party. He brought a six-pack of Newcastle Brown Ale, planning to consume it all himself in line with Australian party conventions. She helped herself to a bottle, and they’ve been a couple ever since, together producing dozens of papers, the textbook, the podcasts, and two children, 14-year-old Matilda and 11-year-old Oliver.

Money and happiness

Early in her career, Stevenson took on a big question in economics: Can money buy happiness? Back in the 1970s, economist Richard Easterlin found that wealthy people are happier than poor people but that people in richer nations aren’t happier than those in poorer nations, and over time incomes above a certain level don’t produce greater happiness. This became known as the Easterlin paradox.

Stevenson and Wolfers reassessed the question using more recent, more complete international polling data. In a 2008 paper, they found “a clear positive link between average levels of subjective well-being [happiness] and GDP per capita across countries.” They turned up no evidence of a “point beyond which wealthier countries have no further increases in subjective well-being.” The findings were significant, economists say, because the Easterlin paradox suggested that at some point economic growth would lose its potential for improving people’s lives and happiness.

“Happiness is an important issue as a yardstick for public policies,” Stevenson says. “Economics has the potential to give people a better life. As societies get richer, people have better food, easier lives, more control over their

“We have a very strong philosophy that economics should be useful in everyday life.”

circumstances, and more opportunities. If a society is richer, people are better off.”

A third major contribution, according to Harvard’s Katz, was a series of papers exploring the economics of family structure in the US and the impact of liberalized divorce laws on empowering women. In 2003, Stevenson and Wolfers wrote that their research linked expanded access to divorce with a dramatic decline in domestic violence against women, female suicides, and murders of women.

In her Harvard course on work and family, Goldin uses Stevenson and Wolfers’ research on marriage and divorce rates. In a 2007 paper, they reviewed 150 years of divorce and marriage records, finding that divorce rates had been declining for the preceding 25 years after rising for decades. They showed that people who married in the 1980s had a higher probability of staying together 20 years than those who married in the 1970s.

Stevenson also played a pioneering role in studying women’s happiness, showing that it was suffering because of the pressures of entering the workforce at the same time that women were still the primary caregivers at home.

“Our profession has ignored women’s welfare for far too long,” says Johns Hopkins economist Prakash Loungani. “Betsey Stevenson helped put it on the radar.”

Innovative textbook

Stevenson and Wolfers’ textbook, *Principles of Economics*, holds the potential to shape the economic thinking of generations of college students. A unit of Macmillan published the first edition in 2020 and a second edition in 2023. The authors are working on a third edition. Stevenson points out that today students don’t just buy a book; they subscribe to the text and a host of supporting online elements, including podcasts and interactive tools.

“We have a very strong philosophy that economics should be useful in everyday life,” Stevenson says. In the foreword, the authors write that “few students will become professional economists—but every single one of them is an economic decision maker.” They define economics as “the study of ‘the ordinary business of everyday life.’”

“The students love it,” says Northeastern University economist Alicia Modestino, who uses the text in a master’s level course. “Before this book, there wasn’t anything policy-focused that was up to date, and the language was inaccessible. In this book, the examples are pulled from the real world: Should you buy a car or take rideshare? Charter schools versus public schools? What does a cost-benefit analysis say about whether to go to graduate school?”

Why did they write the book?

“Justin and I met talking about economics, and we were excited about its

potential to improve people’s lives,” Stevenson says. “We wanted to share that excitement with others.”

Fixing the economy

Stevenson’s work as a policy consultant may yet have a far-reaching impact in Washington, according to those who have worked with her in government.

“Betsey is one of the most effective economists I’ve seen in government,” says Jason Furman, who was the chairman of Obama’s Council of Economic Advisers and is now a political economy professor at Harvard’s Kennedy School of Government. “She is able to convince people in government of core lessons from economics in a human and caring way. She had a lot of trust and face time with the president.”

She served as chief economist of Obama’s Labor Department before joining the Council of Economic Advisers. Northeastern’s Modestino describes a photo of Stevenson in Obama’s office as her young children make faces. While her work on paid family and sick leave didn’t turn into legislation, it did result in an executive order applying to federal contractors, according to Furman.

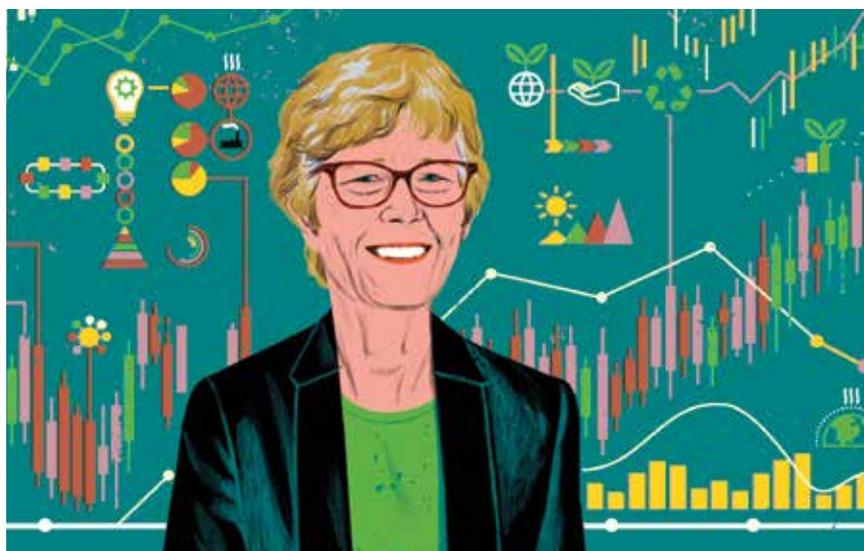
“At the time, there was a lot of concern that Trump would reverse it,” Stevenson says. “This was one of the few executive orders that Trump didn’t touch.” Paid sick leave, she says, is something workers have to earn over time; it increases employers’ costs only 2 percent; and productivity rises because people aren’t working while ill or spreading disease in the workplace.

While on sabbatical in Australia this year, Stevenson plans to focus on the big question of how to create a fairer economy, she says. She’s already started exploring it in columns she writes for Bloomberg, and there may be a book in it, she says. **F&D**

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

Café Economics

Transforming Economics Teaching



Wendy Carlin explains how a new approach to economics education can help address pressing societal problems

In the early 2010s, a widespread feeling that economics teaching was failing students prompted a group of professors from around the world to revamp the undergraduate economics curriculum. The twin goals were to reflect advances in economics research and to make economics education more relevant to real-world problems. In 2013, Wendy Carlin, Samuel Bowles of the Santa Fe Institute, and others including Oscar Landerretche from the University of Chile founded Curriculum Open-access Resources in Economics—also known as CORE Econ—to provide high-quality, open-access courses to students and teachers worldwide. By including such issues as climate change, inequality, innovation, and the future of work, CORE Econ seeks to broaden the standard curriculum, increase access to economics education, and attract and retain a more diverse student body.

Carlin, professor of economics at University College London and the newly elected vice president of the International Economic Association, spoke with F&D about

An expanded view of economics makes it relevant to important real-life problems that go well beyond the economist's traditional concern with efficiency.

why it's vital to rethink the traditional teaching approach.

F&D: How does the general public perceive economics?

WC: When you ask an audience to represent economics with their hands or arms, the majority show supply and demand curves crossing. If you ask them what word comes to mind when they hear “economics,” it is often “money,” and the associated image is a white man in a suit pointing at a spreadsheet or at a screen with stock prices. The public perception of traditional economic models can be summed up as “economics is mainly about markets working well,” which aligns with the way Economics 101 is traditionally taught. It's a narrow representation of what economists do, and if that is your view, you would predict that economics has little to contribute to addressing a pandemic or the climate crisis.

Yet developments in economic theory, empirical tools, and data availability over the past several decades have drawn economists away from narrow debates about whether governments should intervene more or less to address poorly functioning markets. The new tools have opened up a new space for economics.

F&D: How can economics be made more relevant to real life?

WC: Think of the traditional approach as being represented by a line with the state at one end and the market at the other. Differences among economists could be represented by where they stand on the spectrum between “the state,” where actions are motivated by the need to obey government regulations and where goods and services are allocated by fiat or electoral competition, and “the market,” where material incentives drive behavior and allocation takes place through competition.

If we add a third pole and call it “civil society,” a richer view of human motivation can include altruism, reciprocity, dignity, and sustainability, as well as

“in- and out-group” thinking. Here social norms and private power are crucial to the way goods and services are distributed and in determining who gets what.

F&D: You have argued that the climate emergency and the pandemic have exposed shortcomings in traditional economic models.

WC: The pandemic produced new challenges to a view of economics restricted to transactions in markets. Fear of the disease spreading via face-to-face interactions produced spillovers to economic relationships between people. Problems arose within firms between managers and workers. Managers had the power to force workers to work under conditions they felt were dangerous. Although the economist Ronald Coase saw the problem of who exerts power within the firm as “economics,” conventional models taught in economics classes do not.

An expanded view of economics makes it relevant to important real-life problems that involve non-market interactions and go well beyond the economist’s traditional concern with efficiency.

On climate, for example, the traditional economic debate is about whether to focus more on state solutions—such as bans on sales of internal combustion engine vehicles or subsidies for green R&D—or instead aim for market solutions—such as a carbon tax (in which the government sets a price on carbon emissions) or cap and trade (in which the government sets limits on emissions and lets the market determine the price). Both are valuable, but neither one alone mobilizes all the mechanisms available, and both are likely inadequate to the task we face. The new economics explains how changing preferences toward greener initiatives can complement both state and market measures.

F&D: Behavioral economics and other approaches have gained traction. How do these alternative perspectives challenge traditional theories?

WC: Once economics includes behavior more complex than that of *Homo economicus* and covers the study of institutions, defined as the rules of the

game that specify who does what and who gets what, then the contributions of psychology, evolutionary biology, sociology, political science, and history cannot be ignored. Behavioral economists have taken their cue from social psychologists and evolutionary biologists and developed experimental methods in the lab and the field.

Within this broader conception of economics, economists can deploy their traditional strength in the rigorous testing of hypotheses using ever more sophisticated techniques and better data. And they can contribute models that test and sharpen our intuitions while investigating the general equilibrium effects (often unintended) of well-intentioned policy interventions.

F&D: How can ethical and moral values be integrated into economics teaching, and how might this enhance its impact?

WC: With extraordinary regularity over the last decade, “inequality” is the most common response to the question “What is the most pressing problem economists today should be addressing?” Climate and sustainability rank second. Both problems raise ethical concerns—for example, how fair is inequality? Should future global citizens have the same weight as people alive today in calculations about the costs and benefits of climate change mitigation?

It is not our job to say what is fair, but we can equip our students with analytical tools to connect their study of how the world works to normative criteria. Many students come to economics wanting this know-how. Yet they are often told that normative questions lie outside economics—this produces a focus on evaluating economic outcomes and policies only in terms of efficiency, and often on the very narrow criterion of a Pareto improvement. It tips the playing field toward the status quo if the only normative question that can be asked is, “Could there be mutual gains from moving to some other allocation?”

To help students ask a second normative question, “Is there some allocation that would be fairer, and are the rules of the game that produced the allocation

fair?” we use John Rawls’ veil of ignorance. Inviting students to evaluate outcomes when they don’t know whether they would be a winner or a loser, for example, helps them articulate the trade-offs.

F&D: What changes should be made to the economics curriculum to ensure that students can address the complex challenges of the modern world?

WC: The curriculum should be COherent and RElevant—the capitalization refers to the implementation of radical change in the introductory economics curriculum by the global CORE Econ project, which I direct (www.core-econ.org). A new curriculum must reflect the problems we now face and demonstrate that an economics education can provide the tools to engage with them. This is a far cry from the image of economics that I sketched at the beginning.

But real-world relevance is not enough. The curriculum needs to be anchored in a new benchmark model that reflects what we have learned over the past 30 or 40 years about what people are like, how they interact under conditions of incomplete information, and what that means for policy.

In CORE’s latest e-book, *The Economy 2.0*, we took on the challenge of producing a new way of teaching how labor markets actually work that reflects recent decades of research on monopoly power. The model helps students understand the effects of the minimum wage and model how the aggregate labor market functions as part of an integrated treatment of unemployment, real wages, and inflation.

There are also economic problems—housing and financial market crises, environmental tipping points, and adoption dynamics for new technologies such as electric vehicles—that require students to think in terms of models with instability and multiple equilibria. This variety teaches a broader lesson about how economic models can be deployed to shed light on different kinds of complex problems. **F&D**

This interview has been edited for length and clarity.

Book Reviews

Warmer World, Slower Growth

Simon Black

CLIMATE CHANGE IS ONE OF THE MOST significant threats facing the global economy. According to the World Meteorological Organization, temperatures are likely to increase to more than 1.5°C above preindustrial levels within the coming five years. And even with moderate strengthening of global mitigation policy, temperatures are expected to increase by more than 3°C by 2100, with potentially calamitous consequences.

As the world warms, anxiety over the effects continues to rise. A survey conducted by the United Nations found two-thirds of the global population believe that climate change is a global emergency. Fears abound on the risks of triggering tipping points in the climate system, such as the melting of ice sheets or the release of underground methane. But alongside future risks of climate catastrophe, there are also slow-burning effects already being felt around the globe. In *Slow Burn: The Hidden Costs of a Warming World*, environmental and labor economist R. Jisung Park documents these effects, from the expected, like worsening inequality, to the unexpected, such as declining productivity and economic growth.

The link between temperatures and economic growth is well established in development economics literature. The observation that richer nations tend to be at higher latitudes and poorer nations closer to the equator has led to many studies examining whether this is causal or coincidental. Park summarizes the literature and concludes that heat can significantly hinder human performance in areas ranging from standardized exams to professional tennis to manufacturing. “Hotter temperatures,” he argues, “may *already* be affecting companies’ bottom lines,” and climate change has the potential to “significantly alter the economic playing field” by creating winners (those able to adapt) and losers (those who cannot).

On inequality, it has long been noted that climate change has the potential to increase global inequality and that, per-



SLOW BURN
The Hidden
Costs of a
Warming World

R. Jisung Park
Princeton
University Press
Princeton, NJ,
2024, 336 pp.,
\$29.95

“Increasing temperatures raise workplace injury risk, mortality, and crime rates.”

versely, the poorest countries—which contributed the least to the problem—are more vulnerable to its effects. This also appears to be the case within all countries, with the poor simultaneously more concentrated in hotter regions and more vulnerable to climate-related shocks such as heat stress than the rich. These effects are uncertain, with significant variation even within neighborhoods, companies, and families.

Park documents several other channels through which the slow-burning effects of climate change are already affecting human welfare. Increasing temperatures causally raise workplace injury risk, mortality, and crime rates, for example. The ripple effects of these impacts are uncertain, but without significant adaptations they are likely to get worse as the planet continues to warm.

However, Park ends on an optimistic note: it’s not too late, he says, to limit global warming while becoming much more resilient to the slow-burning effects through adaptation. Further, he argues, focus on the slow-burning perspective can help avoid the fatalism the doomsday climate narrative invokes and allow us instead to “view climate change with sober resolve, compassion for those most vulnerable, and a sense of active hope.” **F&D**

SIMON BLACK is an economist in the IMF’s Fiscal Affairs Department.

Tax Matters

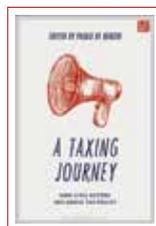
Paolo Mauro

A TAXING JOURNEY breaks new ground on an important topic—currently a niche area of interest but one that I wish were mainstream. The book documents how civic actors have successfully influenced tax reforms, based on case studies in countries at various stages of economic and institutional development.

Many nongovernmental and civil society organizations (CSOs) around the world—some global, some local—seek to promote worthwhile causes, such as poverty alleviation and economic development. Some concentrate on fiscal policies. A few delve into tax matters—usually focusing on international taxation. Those interested in domestic revenue mobilization—collecting revenues in a fair manner to finance basic public services such as education and health care—are rare indeed. I wish there were more. So do the editor and chapter authors of this valuable contribution, who write in a balanced manner but can on occasion be heard rooting for the protagonists of their analysis.

The case studies are disparate. A technically sophisticated group of former public officials in Guatemala holding an opaque and ineffective tax administration to account. A CSO putting a halt to tax amnesties in Mexico. A campaign for higher taxes on alcohol and tobacco in the Philippines. A pan-African research and advocacy organization using the courts to delay an agreement between Kenya and Mauritius on avoidance of double taxation (which, according to some, would have led to more, rather than less, tax avoidance). A campaign against a tax on mobile money transfers and on the use of social media in Uganda. And three state-level campaigns in Massachusetts, Maine, and Minnesota, all seeking to increase taxes on the wealthy. The yellow vest (*gilets jaunes*) movement in France is the odd one out, given its protest nature and associated acts of violence, but it was triggered by an increase in fuel taxes shortly after the repeal of a wealth tax, and from that perspective provides an interesting comparison.

In none of these cases did the civic actors achieve complete success, whether in terms of quality or durability of outcomes. Nor were the actors always pursuing policies that a professional economist would consider efficient. In some cases, it is not even clear that the proposed policies would lead to greater equality or fairness. That does not make the book any less valuable. The world is messy, perfection is the enemy of the good, and the episodes are informative. Especially valuable are the parts relating to how the various civic actors constructed narratives and built alliances, occasion-



**A TAXING
JOURNEY**
How Civic
Actors
Influence Tax
Policy

Paolo de Renzio
(ed.)

Bloomsbury
Academic

New York, NY,
2024, 240 pp.,
\$103.50

“This book is part of a broader rethinking about tax policy, with fairness at its core.”

ally leveraging domestic institutions (such as the courts). I admit also to taking pleasure in learning that technical expertise is an ingredient for success. Engaging in tax reform debates requires technical capacity, and successful CSOs either had former public finance officials in their ranks or collaborated with other organizations, legislators with expert staff, or government officials. Messaging, politics, and technical expertise are all necessary, and all take time to develop.

This book is part of a broader rethinking about tax policy, which moves away from excessive emphasis on economic efficiency and recognizes that fairness is at the core of what voters care about. The book shows that civic actors can push for more equitable taxation or resist inequitable taxation.

Readers expecting a methodologically tight analysis and conclusive results will be disappointed. Those interested in a balanced narrative on well-chosen, informative episodes where civic actors made a difference will draw their own conclusions. As acknowledged by Paolo de Renzio and Jason Lakin in their introductory chapter, the cases were selected because they were successful, at least in part. The objective was not to establish causality. Nor was it to look for lessons from failures—deliberately omitted. Rather, the project was intended to inspire activists, practitioners, and researchers—to propose equitable tax reforms and to conduct further analysis on how and when civic actors can influence tax policy and make it fairer. Cheers to that. **F&D**

PAOLO MAURO is director of the Economic and Market Research Department at the International Finance Corporation.

Trading Partners

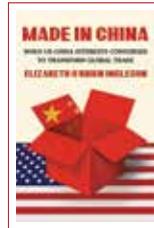
Elizabeth Van Heuvelen

FOCUSED ON THE PIVOTAL PERIOD of the 1970s, Elizabeth O'Brien Ingleson's *Made in China* reminds us of the roots of the complexities still present in today's China-United States relationship and in global trade overall. She argues that the transformation of China's market and the relationship between the two powers were enabled by three interlinking factors: cultural, diplomatic, and economic. Meticulously researched, the book describes how these factors played out in each country and in relation to each other to answer broader and more fundamental questions—not only about why China converged with US capitalism but also why American capitalists incorporated China into their vision of the future.

Rife with interesting and fresh anecdotes, the book takes us through the early days of an unsteady trading relationship trying to find its footing. Interspersed with broader observations about the political and diplomatic interworkings of this period are stories about US importers such as Veronica Yhap, founder of Dragon Lady Traders, and their role in promoting “fashion diplomacy”—an important contributor, Ingleson argues, to a diplomatic and commercial thaw between the countries. It also includes accounts of the early Canton Trade Fairs, providing a lens through which to view China's internal struggles about the appropriate role of foreign trade while illuminating how US businesspeople saw China during that period.

Against this backdrop, Ingleson offers keen observations about the differing ways China and the United States incentivized trade during normalization. Henry Kissinger and President Richard M. Nixon understood trade as a mechanism for facilitating diplomacy, whereas Chairman Mao Zedong saw it as something that would follow only after addressing thorny diplomatic issues. This is a plausible explanation for why trade between the two nations began in fits and starts, taking off only once their respective interests were more fully aligned. It also highlights the outsize role diplomacy can play in shaping the trajectory of the global economy.

For anyone who follows China-US relations today, many of the themes in *Made in China* will ring familiar. This includes the Maoist concept of self-reliance—*zili gengsheng*—whose evolution is a theme Ingleson returns to throughout her account of this period. Given the geopolitical shocks of recent years and elevated trade tensions, this concept is once again prominent in Chinese policy documents, harking back to the early days of rapprochement described in the book. Ingleson



MADE IN CHINA
When US-China
Interests
Converged to
Transform Global
Trade

Elizabeth
O'Brien Ingleson

Harvard University
Press

Cambridge, MA, 2024,
352 pp., \$37.95

“For anyone who follows China-US relations today, many of the book's themes will ring familiar.”

describes how political hard-liners and so-called pragmatists clashed over China's role in an evolving trade and geopolitical landscape.

Similarly, Ingleson takes us back to the early days of China's efforts to import technological know-how, detailing the country's 1973 purchase of Kellogg fertilizer plants. A quote by Lin Hujia, who was then vice director of China's state planning commission, put a decision to pursue the deal in terms that ultimately proved pivotal for China's development strategy: “Should we eat 2 million metric tons of imported wheat or buy 10 chemical fertilizer plants... I believe we all agree to buy the 10 fertilizer plants.”

Ingleson describes early wariness of Chinese imports by US organized labor—from the passage of the 1974 Trade Act to the quota petition by the Worker Glove Manufacturers Association—another thread with significant parallels to today.

Ultimately, Ingleson concludes that China-US relations converged at a time when both countries needed each other to meet their respective domestic and strategic objectives. At a time when China-US tensions are particularly fraught, *Made in China* reminds us that many of the challenges of today are not necessarily new. For the optimists among us, this may offer a glimmer of hope for a scenario in which each country incorporates the other into its respective vision of the future. And, in this regard, further study of how the three interlocking forces—cultural, diplomatic, and economic—have continued to evolve in more recent years would be illuminating. **F&D**

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In Pursuit of Freedom

Melinda Weir

New commemorative coins celebrate abolitionist Harriet Tubman's life and legacy



New commemorative coins honor Harriet Tubman.

ONE OF THE MOST REMARKABLE PEOPLE in American history is being honored with commemorative coins bearing her image. Harriet Tubman, the trailblazing 19th century abolitionist who escaped slavery and repeatedly risked her life leading others to freedom, will be featured on three coins to be released this year.

In January, the US Mint announced the sale of \$5 gold, \$1 silver, and half-dollar clad coins depicting Tubman at different stages of her life and work. The law authorizing the coins was passed in 2022, the bicentennial of Tubman's birth.

Born into slavery in 1822 in Dorchester County, Maryland, Tubman is known for her daring rescues as a conductor on the Underground Railroad, a network of safe houses for those escaping slavery. Thought to have made over a dozen high-risk missions to the South, she is credited with leading an estimated 70 people to freedom. She later became a nurse and Army scout for the Union Army in the US Civil War and was the first woman to lead an armed expedition in the war; one raid led to freedom for hundreds of enslaved people in South Carolina. In her later years, Tubman gave speeches in support of women's voting rights, civil rights, and health care. She died in 1913 in Auburn, New York.

"Every coin produced by the United States Mint helps to tell

a story that teaches us about America's history or connects us to a special memory," Ventris C. Gibson, director of the Mint, said in a press release. "We hope this program will honor the life and legacy of Harriet Tubman."

One side of the silver dollar depicts Tubman's experiences as an Underground Railroad conductor "offering her hand to the viewer with an expression that challenges the viewer to seize the opportunity for freedom," according to the US Mint website. The reverse depicts silhouetted figures crossing a bridge formed by a pair of clasped hands. In the sky, the Big Dipper points to the North Star, which forms the "o" in the *United States of America*. The \$5 gold coin also draws on the theme of helping hands, a tribute to Tubman's continued commitment to others, even after the Civil War.

While the coins are legal tender, they are intended primarily as collector's items and will not be in general circulation. Surcharges from the sale of the coins will go to the National Underground Railroad Freedom Center in Cincinnati, Ohio, and the Harriet Tubman Home, Inc., a nonprofit in Auburn, New York.

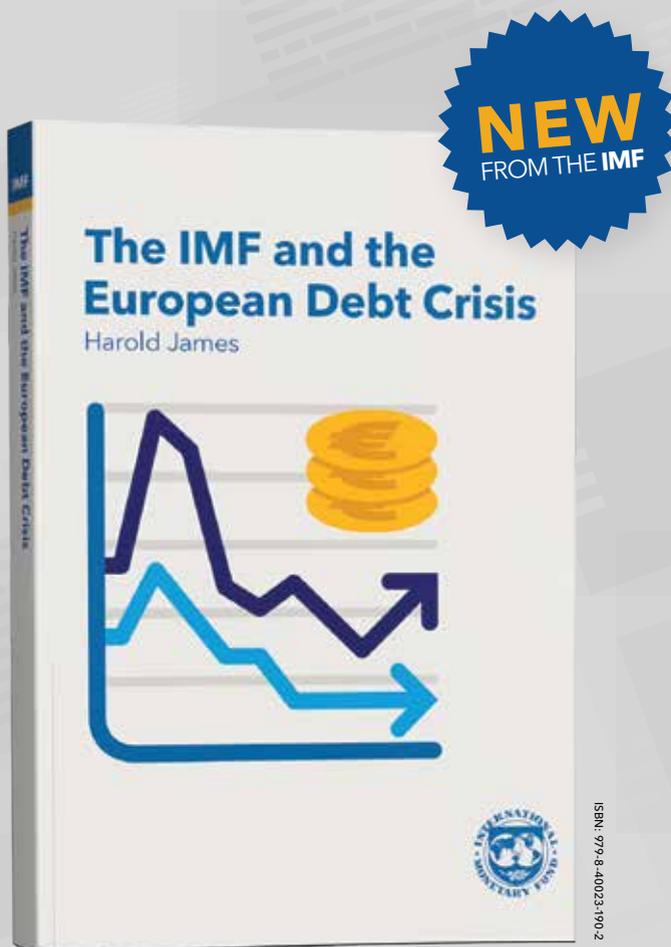
Plans to feature Tubman on the US \$20 banknote have been delayed in recent years. **F&D**

MELINDA WEIR is on the staff of Finance & Development.



A mural depicting Harriet Tubman offering a hand in Cambridge, Maryland, near Tubman's birthplace.

SPRING FEATURED TITLE



This book explores the Fund's engagement in Europe in the aftermath of the 2008 global financial crisis

It explains how, why, and with what consequences the IMF—along with the European Central Bank and the European Commission (together known as “the troika”)—supported adjustment programs in Greece, Ireland, Portugal, and Cyprus.

Additionally, the book examines the intellectual and policy shifts that took place and concludes with reflections on how all the programs also produced genuine policy reform and the possibility of a return to growth and prosperity.



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