

Discussion Brief: Third-Wave Economics¹

The Economist October 23rd, 2021

“The world is on the brink of a real time revolution in economics, as the quality and timeliness of information is transformed” according to *The Economist*. What is commonly known as **Big Data** – real time information on activity – is harvested and processed to provide real time insights into in this case, economic activity and by extension, better public policy responses in terms of timeliness and accuracy.

This is the so-called third wave economics. The first wave is used to describe the origins of the study of human economic activity as encapsulated by Adam Smith and stretching to Keynes and Friedman. This first wave is best thought of as mostly normative exercises with scarce data but nevertheless, quite influential for public policy.

The second wave began with more widespread data availability at least in the developed world and can be timed at least in my opinion with the work of developing national accounting systems to measure economic activity (GDP) and to forecast that activity through leading indicators. These are major achievements given that routinely, economic activity in the US is forecasted to the first or second decimal places. But empirical data on outcomes are only available with lags. Its shortcomings are only too apparent in times of rapid changes or “inflection points” e.g. the 2008 housing-driven great recession and missed opportunities for timely public policy.

The third wave is now the availability and use of real time data - **big data**. According to the Economist, Brexit and its impact provided the initial impetus to mine big data. This need was only reinforced by the covid-19 pandemic. Essentially we are on the brink of being better able to understand economic activity in real time or with absolutely minimal lags and in a best scenario case, have a basis for better public policy responses. I use the word *better* to mean more accurate and especially more equitable policy responses. The Economist describes this as ‘the temptation for government to meddle.’

The article identifies a number of interesting cases and conundrums such as walking around a Walmart that shows shortages of goods on the shelves versus aggregate data that says inventories are not much lower than before the pandemic. The Third-Wave approach involves ‘little theory. Practitioners claim to let the information speak for itself.’ Without a doubt, new computational methods are necessary to handle these very large datasets. There are also software programs that can analyze text. Both quantitative and qualitative data can now be mined.

Highlighting this trend is both timely and interesting. Timely because the 2021 Nobel Prize for economics was awarded David Card, Joshua Angrist and Guido Imbens for showing that data from what may be described as natural experiments can help answer important questions, especially policy questions. They were cited for revolutionizing empirical research in economics. One can find a popular description of the background in a pdf article entitled, ‘*Natural experiments can help answer important questions*’ and a more technical paper, ‘*Answering causal questions using observational data.*’ at the following site:

<https://www.nobelprize.org/prizes/economic-sciences/2021/press-release/>

It is of major professional interest because of it offers a robust alternative to establishing cause and effect without having to resort to randomized trials. The Nobel laureates have been

¹ Discussion Brief by Anthony S. Chan Nov/17/2021

recognized for using natural experiments i.e. large datasets on situations arising in real life that resemble randomized experiments to provide answers to some important policy questions. David Card in particular is cited for his work demonstrating that increases in minimum wages do not lead to lower employment.

It is also worth noting being both timely and of professional interest, that the NBER has a draft volume representing a conference on Big Data for the 21st Century held in March 2019 - '*The growing availability of new sources of Big Data—such as scanner data on purchases, credit card transaction records, payroll information, and prices of various goods scraped from the websites of on-line sellers—has changed the data landscape. These new sources of data hold the promise of allowing the statistical agencies to produce more accurate, more disaggregated and more timely economic data to meet the needs of policymakers and other data users.*' Draft versions of the articles presented at the conference can be found here:

<https://www.nber.org/books-and-chapters/big-data-twenty-first-century-economic-statistics>

As fascinating as these developments are for policy economics and for the career work we have all being doing in USAID, I think it is still important to remind ourselves of some fundamental lessons for making inferences from economic data analysis.

The first is that all quantitative economic analysis must flow from a well-articulated (theoretical) model. This leads me to say that I do have an issue with the statement in the article that says that analysis of big data has little to do with theory and that the information speaks for itself. I have no doubt that we can reconcile the need for a well-articulated model and that the information will speak for itself but we have to be cautious in order not to be misled. Anyone with experience analyzing large datasets e.g. US Census data will know the need to have questions to ask of the data and those questions will inevitably be posited from some model.

The second is and I quote one of my grad school professors, one can prove any relationship with a large enough dataset. Given the extremely large datasets available, it reiterates the need for questions based on a well-articulated model, hence the need for theory. It does not go away.

As a sort of corollary to my second point, even text-based analysis will have its challenges. I give one example, the use of the words 'critical race theory.' Until recently I had no idea what this was in reference to. But as I researched it I realized that in almost every instance of it being used or referred to, the users inevitably used those words to refer to or mean completely different concepts. As strange as it may appear at first reading, using the same words to mean completely different things is not uncommon at all. How many of us can recall in USAID where after multiple meetings on a subject we were able to come to agreement once we had a common understanding of the problem at hand.

The third is the need for objective analysts and policy makers of integrity. I am sure that like me, many of us began the study of economics because we were blown away by the insights it offered to the problems of our days. We also probably always assumed that technical analysis and policy prescriptions were sufficient to solve the problems of underdevelopment and the need for equitable rules of the game as economies evolved. Experience may have taught us a different lesson and we may now have profound appreciation for that old saw we heard when we first began to study statistics: 'Lies, Damn Lies, and Statistics.'

Tony Chan, 16 Nov. 2021

Is it Time for a New Economics Curriculum?

The New Yorker article by Nick Romeo poses the question “is it time for a new economics curriculum” in his review of a new economics textbook written by Samuel Bowles of the Santa Fe Institute and Wendy Carlin of University College London, titled *The Economy*. This textbook is the anchor for what the authors call Curriculum Open-Access Resources in Economics, CORE for short. Their immediate goal is to develop a textbook for beginning economics students that addresses what they see as the main, emerging issues in economics of the 21st Century – the 2008 financial crisis, wealth inequality, climate change and global pandemics, among others. Bowles learned firsthand about inequality growing up in India; Carlin published on inequality in the Neolithic age. Indeed, a young Samuel Bowles decided that if he could not expand the scope of economics he would leave the field altogether.

To provide context, Romeo starts with a discussion of the widely used post-WWII textbook written by Paul Samuelson that most of us old timers used in our Econ 101 courses, as well as a few later ones by Paul Krugman, et. al. and Gregory Mankiew. Samuelson’s textbook was originally criticized from the right and later by the left, pretty much demonstrating the accuracy of his 1990 quote on the political nature of his motivation for writing it: “I don’t care who writes the nation’s laws – or crafts its advanced treaties – if I can write its economics textbooks.” “The first lick is the critical one, impinging on the beginner’s *tabula rasa* at its most impressionable state.” The quote from Keynes to end Romeo’s article makes a similar point about the lasting impact of past economists’ ideas, whether right or wrong.

First let me highlight how the economic theory undergirding their textbook differs from the economic theories that undergirded past and

current mainstream economic “models” – Classical liberalism, Keynesianism, neoclassical liberalism – and how those differences affect how economics should be taught?

The article emphasizes four major events or societal trends that, in the authors’ minds, call for expanding the scope of economics, both in terms of subject matter and theoretical constructs:

- the 2008 financial crisis that almost no economist foresaw, as captured by the question Queen Elizabeth posed when visiting the London School of Economics – why none of you had seen it coming;
- increasing wealth inequality, a phenomenon that Thomas Piketty and others have analyzed extensively; as well as
- climate change and
- the covid-19 pandemic.

So how does CORE differ from previous economics curricula? The authors argue the following:

- *homo economicus* is no longer very helpful in that people are NOT farsighted, nor do they always act self-interestedly;
- institutions play a pivotal role in how economies perform;
- market imperfections are more widespread than most economists assume;
- markets do not necessarily move toward equilibrium.
- And they challenge what they see as the main tenets of most economics textbooks that lead students to “reasonably assume that the economy is about interactions in competitive markets that function pretty well and in which governments ought not to meddle.”

When Mankiew was asked about the difference between his textbook and the new one by Bowles and Carlin, he noted that his textbook raises many of these same issues: it introduces behavioral economics, discusses inequality and institutions, addresses climate change, and presents cases of market failure. The difference is that Bowles and Carlin try to place these new issues and schools of economic thought in the foreground of their theory and curriculum development, not as sidebars to the standard economic model.

The article then cites two critiques of CORE. Jonathan Gruber, an MIT economist, felt it introduced too much complexity for an Econ 101 class – too much emphasis on political and ethical dimensions. I got a kick out of his quote: “Do you want the students to feel like they’re coming out of, you know, to be blunt, a sociology class or an economics class?” Actually, though, I had a great sociology class in grad school, on the sociological aspects involved in transforming from subsistence to commercial agriculture. Cambridge economist Ha-Joon Chang criticized it for a “lack of intellectual pluralism,” and being “fundamentally neoclassical.” Again, from both right and left.

Specifically, Chang views economics as consisting of a number of different schools of economic thought, each of which is good at answering different sets of questions. In fact, CORE brings a number of these schools to the foreground of its subject matter and the methodological techniques each uses to analyze that subject matter. In particular, Bowles and Carlin see big roles for many of the economic schools Chang identifies, in the economic framework undergirding CORE: economic history, behavioral economics, comparative economic development, ecology economics, evolutionary economics, and perhaps above all, game theory.

By broadening the scope of economics, CORE also broadens the types of people interested in studying economics. It leads more young women

and students from marginalized groups to see economics as relevant to their daily experiences. That's because both groups of young folks nowadays have a greater interest in inequality than maximizing the production of goods, and marginalized individuals in particular have a hard time generating much interest in a field where inequalities of income, wealth and economic power are taken as given or not questioned.

Jerre Manarolla, 17 Nov. 2021

ANNALS OF INQUIRY

IS IT TIME FOR A NEW ECONOMICS CURRICULUM?

"The Economy," a new textbook, is designed for the post-neoliberal age.

By Nick Romeo

October 8, 2021



Illustration by Radhiah Anis

In the nineteen-forties, when the Massachusetts Institute of Technology was considering adopting a new economics textbook, the school's president received warnings about the book's author: "It is perfectly obvious that the young man is socially-minded if not strictly communistic," one correspondent wrote. The young man in question was the American economist Paul Samuelson, a future Nobel laureate. Samuelson's textbook "Economics," published in 1948, would dominate the market for nearly half a century; it introduced a Keynesian vision—in which government would take a more active role in managing the economy and promoting full employment—to generations of students and sold millions of copies.

The writer who accused Samuelson of communism worked as an executive at the Bell Telephone Company. Another concerned letter came from an M.I.T. graduate who was now part of the management at the chemical company DuPont. He wanted any text

adopted by M.I.T. to be “thoroughly objective and mature,” and worried that Samuelson was neither of these things. The objectivity sought by the businessmen seemed to require a commitment to small government and minimally regulated capitalism. After the Second World War and the Great Depression, however, a Keynesian outlook was ascendant.

The opposition to Samuelson’s book didn’t prevent its adoption at M.I.T. or other universities. But, by the early nineteen-fifties, a companion volume of readings had joined the syllabus at M.I.T., alongside Samuelson’s text. These readings, which were meant partly to respond to the notion that Samuelson harbored “un-American tendencies,” stressed the value of unrestrained free enterprise. In a sense, the critics of Samuelson’s textbook were right: an introductory economics curriculum has high political stakes. Samuelson was hardly a communist, but it was certainly true that he wanted to influence American politics. “I don’t care who writes a nation’s laws—or crafts its advanced treaties—if I can write its economics textbooks,” he wrote, in 1990. “The first lick is the privileged one, impinging on the beginner’s *tabula rasa* at its most impressionable state.”

Economics is a social science, driven by data and equations. But it is also deeply informed by politics, and economists, who have diverse political views, wrangle over ethical values and also numerical ones. In the same way that Samuelson helped to redefine economics education after the devastation of the Great Depression, an international team of collaborators is now seeking to change how the discipline is taught and to shape the world view of future economists. Led by Samuel Bowles and Wendy Carlin, the group aims to prepare students for a world transformed by the 2008 financial crisis, accelerating wealth inequality, climate change, and global pandemics. They say that their initiative—called CORE, for Curriculum Open-Access Resources in Economics, and anchored by a free online introductory textbook titled “The Economy”—will “teach economics as if the last thirty years had happened.”

In retrospect, it seems fair to say that a complacent overconfidence dominated mainstream economics in the early two-thousands. In 2003, the economist Robert Lucas, in his presidential address to the American Economic Association, claimed that the “central problem of depression prevention has been solved, for all practical purposes, and has in fact been solved for many decades.” Then came the 2008 crash—not a great depression, but certainly a great recession. Carlin, who teaches at University College London, felt that her field was under an accusatory gaze. “That was the moment when the finger was pointed at economists as having failed to realize that something was happening,” she told me recently. Queen Elizabeth II visited the London School of Economics in 2008, and asked the school’s professors why no one had seen the crisis coming.

Carlin, now in her mid-sixties, speaks in short, precise sentences, with a trace of an Australian accent. She moved to England as a Rhodes Scholar, at Oxford, in the late nineteen-seventies. Much of her early research focussed on the role of powerful unions in the German export economy, and she later authored three macroeconomics textbooks with the economist David Soskice. Carlin has known Bowles since the nineteen-eighties. Bowles’s outlook was shaped by his early exposure to global inequality—he had spent his formative years in India, where his father was the U.S. Ambassador—and by a letter he received from Martin Luther King, Jr., in 1968. Bowles had just earned his Ph.D. in economics and was teaching at Harvard; King had written to several economists in advance of his Poor People’s March. King’s letter included questions about why jobs were leaving city centers and how exactly education might promote greater equality. “I didn’t have a clue how to answer them,” Bowles recalled. In attempting to respond to King, he consulted colleagues with a range of specialties at Harvard; afterward, he concluded that he had learned more in that effort than in his entire previous training as an economist. He made a resolution: he would either try to expand the field of economics or leave it. Now eighty-two, he heads the Santa Fe Institute’s behavioral-sciences program and has published on subjects ranging from inequality in the Neolithic to the modern American educational system.

Carlin and Bowles began talking seriously about collaborating in 2011, at an event at the University of Massachusetts Amherst held in honor of Carlin's late husband, the economist Andrew Glyn. They realized that they shared a common perspective on the limits of the *Homo economicus* view of people as farsighted and self-interested actors. They also held similar views on the importance of institutions, the frequent imperfections of markets, and the value of game theory for modelling strategic interactions in the economy. In 2013, they sat down at Carlin's kitchen table, in Oxford, and began drafting plans for a new textbook.

During the next few years, they persuaded two dozen economists from around the world to contribute particular sections based on their expertise. In 2014, Carlin started teaching students from an early version of the text; by 2021, more than half of the eighty or so universities in the United Kingdom that offer an economics degree were using CORE's "The Economy" for at least one course. In the United States, the curriculum is now used in courses at eighty-six universities and community colleges, including Colorado State, the University of Southern California, the University of Notre Dame, and Yale. Its global reach is also considerable: sixty-three countries around the world use CORE, in more than five hundred courses total.

Compared with other textbooks, "The Economy" sometimes seems to reverse foreground and background. "Principles of Economics," written by the Harvard economist N. Gregory Mankiw, declares that "markets are usually a good way to organize economic activity"; "Macroeconomics," by Paul Krugman and Robin Wells, tells students that "markets move toward equilibrium." Bowles and Carlin, in contrast, present market failure as far more pervasive, and not as a rare deviation from a generally efficient and desirable status quo. Most economics textbooks, they argue, in a recent paper on economics pedagogy, lead students to "reasonably conclude that the economy is about interactions in competitive markets (a positive statement) that function pretty well (a normative one) and in which governments ought not to meddle." CORE provides reasons and evidence to challenge all three positions.

Recently, Bowles and Carlin published a statistical analysis, comparing the relative frequency of topics in CORE's "The Economy" with other textbooks. Some of the words that appear more commonly in "The Economy" are "Gini" (a measure of inequality), "bargaining," "environment," "global," and "democracy." Their analysis also shows that CORE offers greater coverage of economic history and thought, game theory, behavioral economics, and comparative international development. It's not that the other textbooks omit these topics entirely but that CORE foregrounds them. Bowles told me about an informal rule among publishers that no more than fifteen per cent of the material in a new textbook should deviate from the dominant ones. He estimates that the figure for CORE is closer to seventy per cent.

What might have been radical thirty years ago may strike many young people today as obvious. After a summer of floods and fires, readers will not be shocked to learn that the economy depends on a functional ecology: "The economy is part of society, which is part of the biosphere," the CORE textbook reads. The pandemic also has underscored how much economic activity consists of "goods and services that are produced within the household, such as meals or childcare (predominantly provided by women)." If taken seriously, such insights would probably require major changes to how we measure the economy and its performance. Using G.D.P. to assess economic growth without somehow including the costs of widespread environmental degradation or the value of domestic labor would be incoherent. CORE still relies on G.D.P., but it acknowledges some of the limits and criticisms that pertain to long-dominant models in economics.

CORE also presents a view of psychology in which people are motivated by more than self-interest. Carlin and Bowles point out that, although financial incentives are effective in some situations, paying people to do the right thing—picking up their children

from preschool on time or donating blood—can backfire, crowding out our intrinsic motivation to act fairly and cooperate. As one chapter explains, “For many people, doing a good job is its own reward, and doing anything else would contradict their work ethic. Even for those not intrinsically motivated to work hard, feelings of responsibility for other employees or for one’s employer may provide strong work motivation.”

The creation of CORE was itself a meta-commentary on incentives. None of the textbook’s contributors were paid, and all donated their rights over the material to CORE, which is a registered charity. Bowles usually publishes research papers several times a year, but between 2014 and 2017 his résumé contains a large blank—he was occupied entirely with the project. CORE covers its operating expenses with funding from foundations and think tanks, such as the Omidyar Network, the Hewlett Foundation, and the Institute for New Economic Thinking. Students, professors, and anyone else who’s interested can download the entire CORE textbook for free. Other introductory textbooks are generally expensive; Mankiw’s sells for around a hundred and thirty dollars. One teacher from Arkansas State University calculated that using CORE will save his students a combined hundred thousand dollars annually.

Shifts in the economics curriculum can affect who takes economics. Max Kasy, an economics professor at Oxford, described the phenomenon. “Once, I had this really stark experience teaching advanced econometrics, which was, like, almost a hundred-per-cent white and Asian men taking it, and then teaching a class on economic inequality that was at a similar technical level, and it being almost a hundred-per-cent minority students and women,” he told me.

Bowles and Carlin have noted that women are dramatically underrepresented among undergraduate economics majors in the United States. Self-selection effects can create a vicious circle: the sorts of people who might change economics become less likely to study it in the first place. Anders Fremstad, an economics professor at Colorado State University who teaches microeconomics from the CORE textbook, told me, “Teaching a version of economics where there is no such thing as economic power, where we’re in the best of all possible worlds . . . I could see how it would not necessarily be a very interesting field for people from more marginalized groups.”

I spoke with nearly a dozen economists about CORE, and their opinions of the book varied widely. Mankiw told me that he makes a point of not commenting on competing textbooks. “It’s a little bit like asking the president of Coca-Cola what he thinks of the taste of Pepsi,” he said. But he argued that his own textbook already does many of the same things that CORE’s “The Economy” does: introducing behavioral economics, discussing inequality and institutions, addressing climate change, and presenting cases of market failures.

Jonathan Gruber, who teaches introductory economics at M.I.T., felt that CORE might introduce too much complexity for a foundational course. He worried that so much emphasis on the ethical and political dimensions of economics might make the subject feel like a different discipline altogether. “The question is, do you want the students to feel like they’re coming out of, you know, to be blunt, a sociology class or an economics class?” Gruber said. Still, he welcomed the greater emphasis on the imperfections of markets. “Economics is a right-wing science,” he told me. “We teach students that the market is always right. And that’s just wrong.”

Ha-Joon Chang, an economist at Cambridge University, praised CORE for incorporating more contemporary research, foregrounding real-world issues and data, and including more philosophical and political discussion than other leading textbooks. But he faulted its lack of intellectual pluralism. In his book, “Economics: The User’s Guide,” from 2014, Chang delineates nine

major schools of economic thought: Austrian, behavioralist, classical, developmentalist, institutionalist, Keynesian, Marxist, neoclassical, and Schumpeterian. Adding feminist economics, evolutionary economics, and ecological economics brings the number to twelve. He sees CORE as fundamentally neoclassical, and thus something of an intellectual monoculture. “All these different schools have been developed with different questions, different methodologies, different assumptions. So they are differently good at answering different kinds of questions,” he told me. “I’m not saying that neoclassical economics is particularly bad, but, in neoclassical economics, you don’t really question the underlying distribution of income, wealth, and power. People promoting that perspective have, frankly, more exposure, more research funding, more political support.”

The boundaries between “neutral” economic fact and debatable political assertion move over time. Samuelson’s book was attacked as subversive and leftist during the Red Scare and McCarthyism, but, following the nineteen-sixties, some saw the book as conservative scaffolding for conventional, pro-growth dogmas. “If one wishes to restructure society in order to achieve other values than maximizing output of material goods and services, Samuelson’s book is no help at all,” one professor wrote, in the early nineteen-seventies. Within the space of just twenty years, the book’s critics came to include those on the opposite ends of the political spectrum.

There’s no reason to think that this process will suddenly stop. Julie Nelson, an important figure in feminist economics who recently retired from the University of Massachusetts Boston, is critical of the standard textbooks and supportive of CORE, but she doesn’t think CORE goes far enough in reimagining the discipline. “They say they’re bringing in gender, but that’s because, you know, they use some female names as well as male names in the examples, as far as I can see,” she told me. It seems safe to say that many assumptions in present-day economics—about gender, the moral status of future generations, or the natural world—may, one day, appear hopelessly flawed.

Such changes are happening, on a small scale, all the time. In the spring of 2021, using CORE, Carlin was teaching microeconomics and macroeconomics to hundreds of undergraduates from more than a dozen countries at University College London. Bowles gave a guest lecture on inequality, presenting an expertly curated collection of data and imagery that documented the astounding increases in inequality that have occurred in the United States since 1980. Because of the pandemic, the course was conducted over Zoom, and students asked questions in the live chat. Why did worker wage growth in lower quintiles lag so far behind productivity after 1970? Would a perfectly equal society actually be desirable? What could reduce levels of extreme inequality?

A lively discussion ensued. Answering this last question, one of the graduate assistants replied, “It’s not rocket science and many countries have done it: provide good education and health services and unemployment insurance, and provide the poor with access to a basic income (or basic goods).” The reason that so many people remain desperately poor, the assistant went on, “is *not* that we do not know how to avoid this. It is that they (and those who care about them) are not as powerful politically as those who would have to make some sacrifices to get this done.”

After the class, I spoke with a few U.C.L. students. A young woman from Armenia told me that she found the CORE textbook “totally shocking.” The book, she said, included the idea of self-interest, but “also added altruism, reciprocity, inequality aversion—it was just completely different.” She went on, “One of the key things that CORE does differently is depict people, economic agents, more realistically, more three-dimensionally.” This was also true of its depiction of economists. The book “really exposes periods where economists got things wrong,” she said. “It makes you take the models and the theories that we are taught with a pinch of

salt. It's not, you know, 'You can learn these principles, and then analyze everything just by those principles.' Just as the world is changing, you have to change as well." Similarly, a young woman from India who was majoring in economics at U.C.L. told me that Carlin's course, using the CORE curriculum, had been the only class in her field that moved beyond abstractions to make the real-world implications of economics clear.

I asked a German Belgian student in his second year what he thought of the course, and whether he believed it mattered what students learned in introductory economics. He replied by pulling up a quote from Keynes and reading it to me:

The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.

In an essay from 1923, Keynes urged his colleagues to cultivate a broader vision. "Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again," he wrote. Carlin and Bowles have written a useful textbook for navigating a turbulent time.

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[Nick Romeo](#), a writer based in Athens, Greece, is working on a book about the people and ideas defining a new paradigm in economics.

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RETHINKING ECONOMICS

The pandemic tests a new policymaking benchmark that includes civil society and social norms

Samuel Bowles and Wendy Carlin

Many workers deemed essential during the pandemic—such as those in eldercare, supermarkets, and distribution warehouses—are unable to make ends meet even in good times. And during the COVID-19 crisis the threat of serious illness has been added to low pay. Employers have required people to report to work—in meat-packing plants and restaurants—at grave risk to themselves and their families; their only recourse is to walk away from their jobs, risking their livelihoods.

These wrenching choices represent the collateral damage of the pandemic. Moral discomfort with the situation has spread even into economics—forcing the profession to confront ethical concerns that in

ordinary times are consigned to religious leaders and philosophers. Along with the climate emergency, the pandemic has made it clear that market failure is now the norm not the exception, rendering the standard economic model anachronistic, much as massive and persistent joblessness in the Great Depression did for the idea that labor markets will equate supply to demand, eliminating unemployment.

The fallout from the pandemic will alter how we think about the economy and public policy—not only in seminars and policy think tanks, but also in the everyday vernacular people use to talk about their livelihoods and futures.

What students today care about hints at what a new economics paradigm might look like. Between 2016

Chart 1



and 2020 we asked 9,032 students in 18 countries, at the very beginning of their introduction to economics course, to name the most pressing problems today's economists should be addressing (see Chart 1).

Their responses are shown above; the size of the font indicates the frequency of the response. A new benchmark model that is increasingly widely taught is already encouraging young people who care about these issues to stick with economics.

First-year economics students around the world cited inequality, climate change, and unemployment as top issues of concern between 2016 and 2020.

A new economic model alone will not change minds and policies. The successes of the Keynesian New Deal and neoliberalism have taught us that a new economic model becomes a force for change when it is integrated into a powerful moral framework, illustrated by emblematic policy innovations, and articulated in everyday conversations.

Classical liberalism, for example, rested on commitments to order, anti-paternalistic liberty, autonomy, and utilitarianism, which were synergistic with its economic model characterized by competitive markets, division of labor, and specialization. Free trade and antitrust policies were its hallmark. Ordinary discourse took up its truths, as when Alice whispered to the Queen (in *Alice in Wonderland*), "It's done by everyone minding their own business."

More recent economic paradigms were also founded on a synergy of complementary values and economic models.

For Keynesian economists, a commitment to reducing economic insecurity and raising the incomes

of the less well-off through government programs and trade union bargaining was combined with a set of propositions about saving behavior, automatic stabilizers, and aggregate demand. Both the coherence and the rhetorical power of the Keynesian paradigm depended on the belief—very plausible under the circumstances—that the pursuit of its advocates' egalitarian values through economic policy and organization would improve aggregate economic performance by supporting higher and more stable output and employment.

In like manner, what has come to be called neoliberalism advanced two normative pillars. The first was "freedom from" government coercion (rather than a more expansive "freedom to" and the absence of domination in private or public spheres). The second was a procedural view of justice, which deems outcomes—however unequal—as fair so long as the rules of the game are fair. Cementing neoliberalism's philosophy to its economics was a view that people are individualistic and amoral—along with a representation of how they interact in the economy; namely, through exchange in competitive markets under complete contracts. Complete contracts, which cover all aspects of the exchange of interest and not only those of the exchanging parties, ensured against market failures arising from "spillovers" or "external effects," such as epidemic spread or greenhouse gas emissions.

Extending the assumption of self-interested agents to the public sphere gave neoliberalism a view of public choice in which governments and other collective actors, such as trade unions, were simply special interest groups using up scarce resources



why is moral sentiments in a smaller font?

The behavioral revolution in economics has taught us that people are neither omniscient nor entirely self-interested, but are moved by “moral sentiments” and material interests

in order to get a larger slice of a smaller pie. In this model of the economy, the limits on government that were advocated on philosophical grounds were also necessary for a well-functioning economy. The values and the model were brought together in emblematic policies such as school vouchers (allowing school choice) and a negative income tax (replacing antipoverty programs with direct government cash payments) and in memes such as “The government that governs best governs least.”

But integrating economic models and ethical values in a complementary manner does not alone allow a paradigm to succeed: for the advocated policies to work, the economic model must be a reasonable approximation of the empirical economy. Just as a changing economic reality spelled the demise of classical liberalism following the Great Depression, the Keynesian paradigm was challenged by the stagnant growth combined with inflation (so-called stagflation) of the 1970s. Similarly, disenchantment with neoliberalism strengthened after the global financial crisis of 2008, which appeared to many as the price to be paid for the market deregulation advocated by neoliberals. Disenchantment with laissez-faire individualism has since mounted in the face of growing inequality, the climate crisis—and now the pandemic.

To serve as a component of a new paradigm, a new benchmark economic model must take a position on fundamentals, including the economy as a component of the social system and biosphere, how we represent people as economic actors and decision makers, the key institutions that govern our interactions, and the characteristics of the technologies that underpin our livelihoods. Contemporary economics—the economics that researchers use and graduate students routinely are taught—provides a response on each of these dimensions.

The behavioral revolution in economics has taught us that people are neither omniscient nor entirely self-interested but are moved, as Adam Smith put it, by “moral sentiments” as well as material interests. Among those moral sentiments are dignity—the desire not to be taken advantage of by others—as well as ethical convictions and concern for others.

These include not only altruism and reciprocity but also parochial intolerance and tribal hostility.

The way economics represents interactions among people has also undergone a fundamental transformation: we now recognize that most contracts are incomplete. The information economics pioneered by Friedrich Hayek and greatly extended in the past four decades to become a pillar of contemporary economics makes it clear that neither government nor private parties can stipulate the full range of what matters ~~in an enforceable contract~~.

The effects on others—not covered by contractual provisions—are the rule, not the exception. These include not only the familiar market failures affecting our interaction with the biosphere, such as pollution, but also the central markets in a modern capitalist economy: for labor, credit, and information. In the labor market, for example, of great concern to both employees and employers is how hard and carefully a worker works. But there is no way to enforce or even specify this in a contract. In the credit market the promise to repay a loan can be included in the contract but ~~is not enforceable~~.

The incompleteness of contracts has wide-ranging consequences. Where they are incomplete, there will typically be excess supply or demand, even in highly competitive markets. Employers, for example, choose to pay wages higher than a worker’s next best alternative. This confers what economists call a rent on the worker, which means the worker is better off with the job than without. Fearing the loss of this rent is a powerful motive for the worker to implement the employer’s request to work hard ~~and, for example, take care of the firm’s equipment or report to work~~ instead of self-isolating. If it is costly to lose your job, then there must be potential workers who would prefer to have a job—namely, the unemployed.

In these interactions the exchange is governed in part by some combination of the contract, social norms (such as a work ethic on the part of the employee or truth telling by the borrower), and the exercise of power by the employer—or, in the case of the credit market, by the lender. Eight decades ago, Ronald Coase famously defined the employment

contract as a transfer of power from the worker to the employer. An economic model recognizing this transfer of power—and able therefore to incorporate the abuse of employers' private powers—gives policymakers a framework for addressing the plight of low-paid essential workers forced to choose between their livelihood and their health. Policy initiatives in this area range from expanding workers' individual rights on the job to support for those who stay home so as to minimize the epidemic spread.

By extending economics to a new set of motivations—a commitment to justice, the demand for dignity and voice—the new benchmark economic model opens up a broader set of policy options. It offers changes to the rules of the game that can be implemented not only by market and government instruments but also by the exercise of private power and social norms.

Take the policies “carbon tax and dividend” (in which the government sets a price on carbon emissions) and “cap and trade” (in which the government sets limits on emissions and lets the market determine the price). Each uses a different combination of state capacity and market mechanism to deliver lower carbon emissions, as shown by their different positions on the horizontal line in Chart 2. But this is a cramped one-dimensional continuum of policy options. It presumes that both private and government actors have sufficient information to design mechanisms adequate to address issues such as climate change—or a global pandemic. Its narrowness overlooks the opportunities for solutions involving a third dimension that arises from the social character of people and the power of social norms.

Chart 2 illustrates policies that combine motivation and implementation mechanisms of three poles that work in synergy rather than as substitutes: government, markets, and civil society. Such policies fall at various points inside the triangle. A position toward the center would use a mixture of all three mechanisms—for example, research, production, distribution, and population coverage of a vaccine for COVID-19 (see Chart 3).

As a result of the pandemic, ethical considerations are unavoidable, especially those of fairness and solidarity, even among strangers. Debates about who should have priority access to vaccines, and about which workers are essential during a pandemic, make it clear that we cannot rely on the price system or indeed compliance with government fiat to capture the values that matter to us.

Chart 2

A new space for policymaking

Extending the state power vs. markets debate to recognize the role of social norms creates new opportunities to address problems from pollution to pandemics.

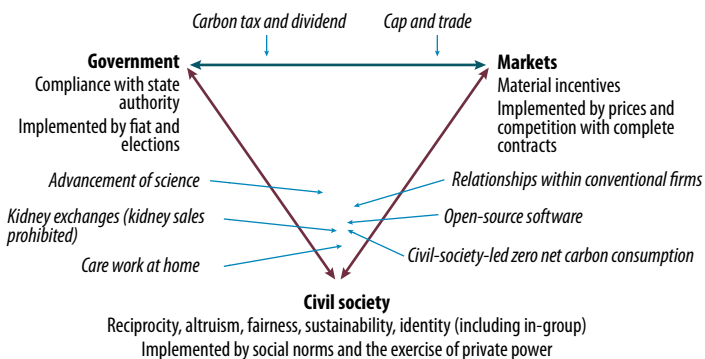
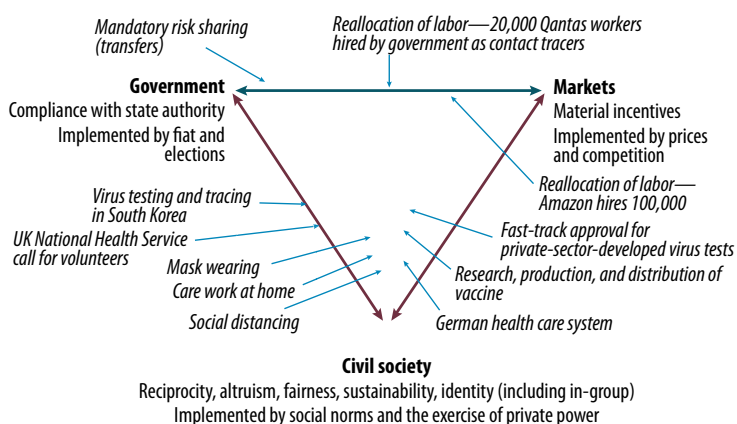


Chart 3

The COVID test

Responses to COVID-19 show governments, markets, and civil society working synergistically—best exemplified by the development of vaccines.



~~Economists will rightly be pressed for evidence to reach beyond concerns about efficiency and shared affluence and include fairness and the classical liberal commitment to equal dignity.~~

The expanded space offered by the new economics benchmark provides an analytical framework integrating these ethical concerns with an economic model appropriate to a world in which people are connected not only by markets and contracts but also by the private exercise of power, the spread of infection, effects on the biosphere, ties of in-group membership, and a concern for the common good. **FD**

SAMUEL BOWLES heads the Behavioral Sciences Program at the Santa Fe Institute. **WENDY CARLIN** is a professor of economics at University College London. Both are among the coauthors of the CORE project's open-access introductory texts, *The Economy* and *Economy, Society, and Public Policy*.

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Instant economics

A real-time revolution in economics could make the world better off

DOES ANYONE really understand what is going on in the world economy? The pandemic has made plenty of observers look clueless. Few predicted \$80 oil, let alone fleets of container ships waiting outside Californian and Chinese ports. As covid-19 let rip in 2020, forecasters overestimated how high unemployment would be by the end of the year. Today prices are rising faster than expected and nobody is sure if inflation and wages will spiral upward. For all their equations and theories, economists are often fumbling in the dark, with too little information to pick the policies that would maximise jobs and growth.

Yet, as we report this week, the age of bewilderment is starting to give way to greater enlightenment (see Briefing). The world is on the brink of a real-time revolution in economics, as the quality and timeliness of information are transformed. Big firms from Amazon to Netflix already use instant data to monitor grocery deliveries and how many people are glued to "Squid Game". The pandemic has led governments and central banks to experiment, from monitoring restaurant bookings to tracking card payments. The results are still rudimentary, but as digital devices, sensors and fast payments become ubiquitous, the ability to observe the economy accurately and speedily will improve. That holds open the promise of better public-sector decision-making—as well as the temptation for governments to meddle.

The desire for better economic data is hardly new. America's GNP estimates date to 1934 and initially came with a 13-month time lag. In the 1950s a young Alan Greenspan monitored freight-car traffic to arrive at early estimates of steel production. Ever since Walmart pioneered supply-chain management in the 1980s private-sector bosses have seen timely data as a source of competitive advantage. But the public sector has been slow to reform how it works. The official figures that economists track—think of GDP or employment—come with lags of weeks or months and are often revised dramatically. Productivity takes years to calculate accurately. It is only a slight exaggeration to say that central banks are flying blind.

Bad and late data can lead to policy errors that cost millions of jobs and trillions of dollars in lost output. The financial crisis would have been a lot less harmful had the Federal Reserve cut interest rates to near zero in December 2007, when America entered recession, rather than in December 2008, when economists at last saw it in the numbers. Patchy data about a vast informal economy and rotten banks have made it harder for India's policymakers to end their country's lost decade of low growth. The European Central Bank wrongly raised interest rates in 2011 amid a temporary burst of inflation, sending the euro area back into recession. The Bank of England may be about to make a similar mistake today (see Leader).

The pandemic has, however, become a catalyst for change. Without the time to wait for official surveys to reveal the effects of the virus or lockdowns, governments and central banks have experimented, tracking mobile phones, contactless payments and the real-time use of aircraft engines. Instead of locking themselves in their studies for years writing the next "General

Theory", today's star economists, such as Raj Chetty at Harvard University, run well-staffed labs that crunch numbers. Firms such as JPMorgan Chase have opened up treasure chests of data on bank balances and credit-card bills, helping reveal whether people are spending cash or hoarding it.

These trends will intensify as technology permeates the economy. A larger share of spending is shifting online and transactions are being processed faster (see Leader). Real-time payments grew by 41% in 2020, according to McKinsey, a consultancy (India registered 25.6bn such transactions). More machines and objects are being fitted with sensors, including individual shipping containers that could make sense of supply-chain blockages. Govcoins, or central-bank digital currencies (CBDCs), which China is already piloting and over 50 other countries are considering, might soon provide a goldmine of real-time detail about how the economy works.

Timely data would cut the risk of policy cock-ups—it would be easier to judge, say, if a dip in activity was becoming a slump. And the levers governments can pull will improve, too. Central bankers reckon it takes 18 months or more for a change in interest rates to take full effect. But Hong Kong is trying out cash handouts in digital wallets that expire if they are not spent quickly. CBDCs might allow interest rates to fall deeply negative.

Good data during crises could let support be precisely targeted; imagine loans only for firms with robust balance-sheets but a temporary liquidity problem. Instead of wasteful universal welfare payments made through social-security bureaucracies, the poor could enjoy instant income top-ups if they lost their job, paid into digital wallets without any paperwork.

The real-time revolution promises to make economic decisions more accurate, transparent and rules-based. But it also brings dangers. New indicators may be misinterpreted: is a global recession starting or is Uber just losing market share? They are not as representative or free from bias as the painstaking surveys by statistical agencies. Big firms could hoard data, giving them an undue advantage. Private firms such as Facebook, which launched a digital wallet this week (see Business section), may one day have more insight into consumer spending than the Fed does.

Know thyself

The biggest danger is hubris. With a panopticon of the economy, it will be tempting for politicians and officials to imagine they can see far into the future, or to mould society according to their preferences and favour particular groups. This is the dream of the Chinese Communist Party, which seeks to engage in a form of digital central planning.

In fact no amount of data can reliably predict the future. Unfathomably complex, dynamic economies rely not on Big Brother but on the spontaneous behaviour of millions of independent firms and consumers. Instant economics isn't about clairvoyance or omniscience. Instead its promise is prosaic but transformative: better, timelier and more rational decision-making. ■





The real-time revolution

SALINA, KANSAS

How the pandemic reshaped the dismal science

AS PART OF his plan for socialism in the early 1970s, Salvador Allende created Project Cybersyn. The Chilean president's idea was to offer bureaucrats unprecedented insight into the country's economy. Managers would feed information from factories and fields into a central database. In an operations room bureaucrats could see if production was rising in the metals sector but falling on farms, or what was happening to wages in mining. They would quickly be able to analyse the impact of a tweak to regulations or production quotas.

Cybersyn never got off the ground. But something curiously similar has emerged in Salina, a small city in Kansas. *Salina311*, a local paper, has started publishing a "community dashboard" for the area, with rapid-fire data on local retail prices, the number of job vacancies and more—in effect, an electrocardiogram of the economy.

What is true in Salina is true for a growing number of national governments. When the pandemic started last year bureaucrats began studying dashboards of "high-frequency" data, such as daily air-

port passengers and hour-by-hour credit-card-spending. In recent weeks they have turned to new high-frequency sources, to get a better sense of where labour shortages are worst or to estimate which commodity price is next in line to soar. Economists have seized on these new data sets, producing a research boom (see chart 1 on next page). In the process, they are influencing policy as never before.

This fast-paced economics involves three big changes. First, it draws on data that are not only abundant but also directly relevant to real-world problems. When policymakers are trying to understand what lockdowns do to leisure spending they look at live restaurant reservations; when they want to get a handle on supply-chain bottlenecks they look at day-by-day movements of ships. Troves of timely, granular data are to economics what the microscope was to biology, opening a new way of looking at the world.

Second, the economists using the data are keener on influencing public policy. More of them do quick-and-dirty research

in response to new policies. Academics have flocked to Twitter to engage in debate.

And, third, this new type of economics involves little theory. Practitioners claim to let the information speak for itself. Raj Chetty, a Harvard professor and one of the pioneers, has suggested that controversies between economists should be little different from disagreements among doctors about whether coffee is bad for you: a matter purely of evidence. All this is causing controversy among dismal scientists, not least because some, such as Mr Chetty, have done better from the shift than others: a few superstars dominate the field.

Their emerging discipline might be called "third wave" economics. The first wave emerged with Adam Smith and the "Wealth of Nations", published in 1776. Economics mainly involved books or papers written by one person, focusing on some big theoretical question. Smith sought to tear down the monopolistic habits of 18th-century Europe. In the 20th century John Maynard Keynes wanted people to think differently about the government's role in managing the economic cycle. Milton Friedman aimed to eliminate many of the responsibilities that politicians, following Keynes's ideas, had arrogated to themselves.

All three men had a big impact on policies—as late as 1850 Smith was quoted 30 times in Parliament—but in a diffuse way. Data were scarce. Even by the 1970s more than half of economics papers focused on ▶▶

theory alone, suggests a study published in 2012 by Daniel Hamermesh, an economist.

That changed with the second wave of economics. By 2011 purely theoretical papers accounted for only 19% of publications. The growth of official statistics gave wonks more data to work with. More powerful computers made it easier to spot patterns and ascribe causality (this year's Nobel prize was awarded for the practice of identifying cause and effect). The average number of authors per paper rose, as the complexity of the analysis increased (see chart 2). Economists had greater involvement in policy: rich-world governments began using cost-benefit analysis for infrastructure decisions from the 1950s.

Second-wave economics nonetheless remained constrained by data. Most national statistics are published with lags of months or years. "The traditional government statistics weren't really all that helpful—by the time they came out, the data were stale," says Michael Faulkender, an assistant treasury secretary in Washington at the start of the pandemic. The quality of official local economic data is mixed, at best; they do a poor job of covering the housing market and consumer spending. National statistics came into being at a time when the average economy looked more industrial, and less service-based, than it does now. The Standard Industrial Classification, introduced in 1937-38 and still in use with updates, divides manufacturing into 24 subsections, but the entire financial industry into just three.

The mists of time

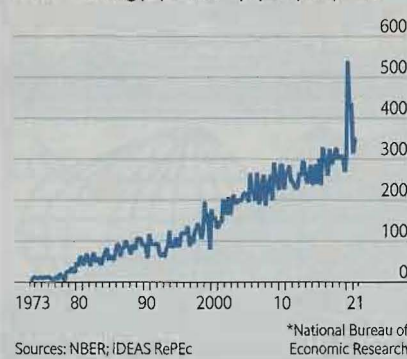
Especially in times of rapid change, policymakers have operated in a fog. "If you look at the data right now...we are not in what would normally be characterised as a recession," argued Edward Lazear, then chairman of the White House Council of Economic Advisers, in May 2008. Five months later, after Lehman Brothers had collapsed, the IMF noted that America was "not necessarily" heading for a deep recession. In fact America had entered a recession in December 2007. In 2007-09 there was no surge in economics publications. Economists' recommendations for policy were mostly based on judgment, theory and a cursory reading of national statistics.

The gap between official data and what is happening in the real economy can still be glaring. Walk around a Walmart in Kansas and many items, from pet food to bottled water, are in short supply. Yet some national statistics fail to show such problems. Dean Baker of the Centre for Economic and Policy Research, using official data, points out that American real inventories, excluding cars and farm products, are barely lower than before the pandemic.

There were hints of an economics third wave before the pandemic. Some econo-

Real-time boom

NBER* working papers, new papers per quarter



mists were finding new, extremely detailed streams of data, such as anonymised tax records and location information from mobile phones. The analysis of these giant data sets requires the creation of what are in effect industrial labs, teams of economists who clean and probe the numbers. Susan Athey, a trailblazer in applying modern computational methods in economics, has 20 or so non-faculty researchers at her Stanford lab (Mr Chetty's team boasts similar numbers). Of the 20 economists with the most cited new work during the pandemic, three run industrial labs.

More data sprouted from firms. Visa and Square record spending patterns, Apple and Google track movements, and security companies know when people go in and out of buildings. "Computers are in the middle of every economic arrangement, so naturally things are recorded," says Jon Levin of Stanford's Graduate School of Business. Jamie Dimon, the boss of JPMorgan Chase, a bank, is an unlikely hero of the emergence of third-wave economics. In 2015 he helped set up an institute at his bank which tapped into data from its network to analyse questions about consumer finances and small businesses.

The Brexit referendum of June 2016 was the first big event when real-time data were put to the test. The British govern-

ment and investors needed to get a sense of this unusual shock long before Britain's official GDP numbers came out. They scraped web pages for telltale signs such as restaurant reservations and the number of supermarkets offering discounts—and concluded, correctly, that though the economy was slowing, it was far from the catastrophe that many forecasters had predicted.

Real-time data might have remained a niche pursuit for longer were it not for the pandemic. Chinese firms have long produced granular high-frequency data on everything from cinema visits to the number of glasses of beer that people are drinking daily. Beer-and-movie statistics are a useful cross-check against sometimes dodgy official figures. China-watchers turned to them in January 2020, when lockdowns began in Hubei province. The numbers showed that the world's second-largest economy was heading for a slump. And they made it clear to economists elsewhere how useful such data could be.

Vast and fast

In the early days of the pandemic Google started releasing anonymised data on people's physical movements; this has helped researchers produce a day-by-day measure of the severity of lockdowns (see chart 3 on next page). OpenTable, a booking platform, started publishing daily information on restaurant reservations. America's Census Bureau quickly introduced a weekly survey of households, asking them questions ranging from their employment status to whether they could afford to pay the rent.

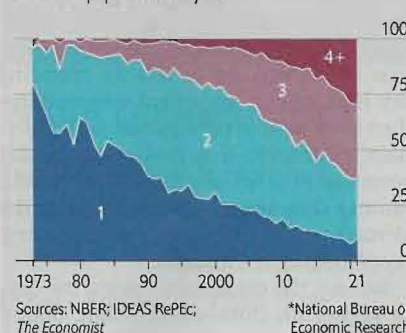
In May 2020 Jose Maria Barrero, Nick Bloom and Steven Davis, three economists, began a monthly survey of American business practices and work habits. Working-age Americans are paid to answer questions on how often they plan to visit the office, say, or how they would prefer to greet a work colleague. "People often complete a survey during their lunch break," says Mr Bloom, of Stanford University. "They sit there with a sandwich, answer some questions, and that pays for their lunch."

Demand for research to understand a confusing economic situation jumped. The first analysis of America's \$600 weekly boost to unemployment insurance, implemented in March 2020, was published in weeks. The British government knew by October 2020 that a scheme to subsidise restaurant attendance in August 2020 had probably boosted covid infections. Many apparently self-evident things about the pandemic—that the economy collapsed in March 2020, that the poor have suffered more than the rich, or that the shift to working from home is turning out better than expected—only seem obvious because of rapid-fire economic research.

It is harder to quantify the policy impact. Some economists scoff at the notion

Jointly does it

NBER* papers by number of authors
% of total papers in each year



▶ that their research has influenced politicians' pandemic response. Many studies using real-time data suggested that the Paycheck Protection Programme, an effort to channel money to American small firms, was doing less good than hoped. Yet small-business lobbyists ensured that politicians did not get rid of it for months. Tyler Cowen, of George Mason University, points out that the most significant contribution of economists during the pandemic involved recommending early pledges to buy vaccines—based on older research, not real-time data.

Still, Mr Faulkender says that the special support for restaurants that was included in America's stimulus was influenced by a weak recovery in the industry seen in the OpenTable data. Research by Mr Chetty in early 2021 found that stimulus cheques sent in December boosted spending by lower-income households, but not much for richer households. He claims this informed the decision to place stronger income limits on the stimulus cheques sent in March.

Shaping the economic conversation

As for the Federal Reserve, in May 2020 the Dallas and New York regional Feds and James Stock, a Harvard economist, created an activity index using data from SafeGraph, a data provider that tracks mobility using mobile-phone pings. The St Louis Fed used data from Homebase to track employment numbers daily. Both showed shortfalls of economic activity in advance of official data. This led the Fed to communicate its dovish policy stance faster.

Speedy data also helped frame debate. Everyone realised the world was in a deep recession much sooner than they had in 2007-09. In the IMF's overviews of the global economy in 2009, 40% of the papers cited had been published in 2008-09. In the overview published in October 2020, by contrast, over half the citations were for papers published that year.

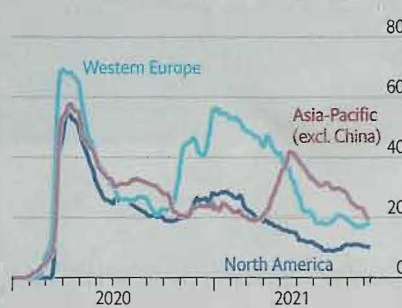
The third wave of economics has been better for some practitioners than others. As lockdowns began, many male economists found themselves at home with no teaching responsibilities and more time to do research. Female ones often picked up the slack of child care. A paper in *Covid Economics*, a rapid-fire journal, finds that female authors accounted for 12% of economics working-paper submissions during the pandemic, compared with 20% before. Economists lucky enough to have researched topics before the pandemic which became hot, from home-working to welfare policy, were suddenly in demand.

There are also deeper shifts in the value placed on different sorts of research. The *Economist* has examined rankings of economists from IDEAS RePEc, a database of research, and citation data from Google

The slowdown on the lockdown

Effective lockdown index

0=no restrictions on movement, 100=no movement



Sources: Goldman Sachs; Oxford University; Google

Scholar. We divided economists into three groups: "lone wolves" (who publish with less than one unique co-author per paper on average); "collaborators" (those who tend to work with more than one unique co-author per paper, usually two to four people); and "lab leaders" (researchers who run a large team of dedicated assistants). We then looked at the top ten economists for each as measured by RePEc author rankings for the past ten years.

Collaborators performed far ahead of the other two groups during the pandemic (see chart 4). Lone wolves did worst: working with large data sets benefits from a division of labour. Why collaborators did better than lab leaders is less clear. They may have been more nimble in working with those best suited for the problems at hand; lab leaders are stuck with a fixed group of co-authors and assistants.

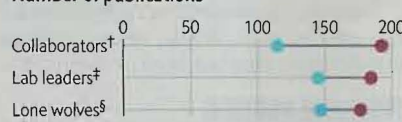
The most popular types of research highlight another aspect of the third wave: its usefulness for business. Scott Baker, another economist, and Messrs Bloom and Davis—three of the top four authors during the pandemic compared with the year before—are all "collaborators" and use daily

Co-operation is king

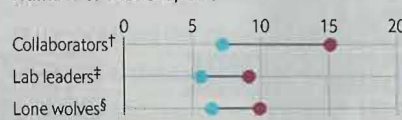
New papers*

● 2019 ● 2020

Number of publications



Number of citations, '000



*Appearing on Google Scholar †More than one unique co-author per paper ‡Run a large team §On average less than one unique co-author per paper
Sources: Google Scholar; IDEAS RePEc

newspaper data to study markets. Their uncertainty index has been used by hedge funds to understand the drivers of asset prices. The research by Messrs Bloom and Davis on working from home has also gained attention from businesses seeking insight on the transition to remote work.

But does it work in theory?

Not everyone likes where the discipline is going. When economists say that their fellows are turning into data scientists, it is not meant as a compliment. A kinder interpretation is that the shift to data-heavy work is correcting a historical imbalance. "The most important problem with macro over the past few decades has been that it has been too theoretical," says Jón Steinsón of the University of California, Berkeley, in an essay published in July. A better balance with data improves theory. Half of the recent Nobel prize went for the application of new empirical methods to labour economics; the other half was for the statistical theory around such methods.

Some critics question the quality of many real-time sources. High-frequency data are less accurate at estimating levels (for example, the total value of GDP) than they are at estimating changes, and in particular turning-points (such as when growth turns into recession). In a recent review of real-time indicators Samuel Tombs of Pantheon Macroeconomics, a consultancy, pointed out that OpenTable data tended to exaggerate the rebound in restaurant attendance last year.

Others have worries about the new incentives facing economists. Researchers now race to post a working paper with America's National Bureau of Economic Research in order to stake their claim to an area of study or to influence policymakers. The downside is that consumers of fast-food academic research often treat it as if it is as rigorous as the slow-cooked sort—papers which comply with the old-fashioned publication process involving endless seminars and peer review. A number of papers using high-frequency data which generated lots of clicks, including one which claimed that a motorcycle rally in South Dakota had caused a spike in covid cases, have since been called into question.

Whatever the concerns, the pandemic has given economists a new lease of life. During the Chilean coup of 1973 members of the armed forces broke into Cybersyn's operations room and smashed up the slides of graphs—not only because it was Allende's creation, but because the idea of an electrocardiogram of the economy just seemed a bit weird. Third-wave economics is still unusual, but ever less odd. ■

Correction In our Briefing last week we said that in Britain 80-90% of those hospitalised with covid are unvaccinated. In fact, less than half are not jabbed.

The New Economics

How the U.S. and Its Allies Are Rewriting the Rules on Spending and Trade

By [Felicia Wong](#)

November 16, 2021, *Foreign Affairs*



Harvesting tomatoes, Foggia, Italy, August 2018
Alessandro Bianchi / Reuters

Amid the arduous fight in Congress over President Joe Biden’s economic agenda, it is easy to lose sight of a more important development: the dramatic shift in economic thinking now taking place not only in the United States but also among many of its allies and partners. In its ambitious economic plan, the Biden administration is doing more than trying to push through a large-scale stimulus. It is also departing from a long-dominant neoliberal consensus—including the position of the Democratic Party itself for

much of the past few decades—in favor of a sweeping new vision for economic growth based on privileging work over wealth and planet over profit. In doing so, the administration is moving in tandem with new and recently reelected governments in Canada, Germany, and Japan that are pursuing expansive policies aimed at tackling inequality and decarbonizing the economy.

Meanwhile, leaders in France, Italy, and the United Kingdom are moving in a similar direction, using the levers of state power to promote human welfare and green industries. Many of these leaders are also using the power of EU and national institutions to tame and tax the digital monopolies that are increasingly wreaking havoc with democracies worldwide. Indeed, for the last six years and especially since the pandemic began, leaders and policymakers in many developed democracies have concluded that deeper structural reforms are necessary to counter the right-wing populism that brought former U.S. President Donald Trump and other political figures to power.

The broad international convergence around a new economic framework is significant, because for decades, there has been a similar convergence in the opposite direction: international policymakers privileged trade openness and volume above all, seeking to deregulate markets and support the market-oriented rules of the World Trade Organization (WTO). This was the so-called Washington consensus, the approach that was formulated in the 1980s based on the neoliberal ideas of privatization and deregulation. Now, the Biden administration and like-minded governments are rethinking that approach in favor of policies that seek to bring new standards to

international trade and to use public investment to address issues such as income inequality.

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Many of these ideas are only beginning to gain traction, and some face strong political headwinds. Even as Biden has succeeded in getting a historic \$1.2 trillion infrastructure bill, he has had to make significant compromises in the negotiations for his even larger social spending package, the Build Back Better bill. But this momentary setback is not a ceding of the vision. Of far greater significance is that such legislation is now under discussion at all. For in its size and ambition, it suggests how far the U.S. administration has already come in embracing an entirely new understanding of how the government can play a crucial role in not only the domestic but also the international economy—an approach that offers powerful new tools for addressing some of today’s greatest challenges.

THE POPULIST BLOWBACK

Among the drivers of Biden’s economic vision has been the recognition by his policy team that decades of trade liberalization have caused real harm to the electorate. Popular discontent with trade policy was one of the crucial dynamics of the 2016 presidential campaign. By taking a populist stance against the trade agreements that had long dominated international policy, Trump was able to exploit the inconsistency between the campaign statements of his opponent, Hillary Clinton—who

said she was against the Trans-Pacific Partnership trade deal—and the position of the Obama administration—which had waged an aggressive campaign to enact the TPP. Trump’s victory and his administration’s hostility to trade deals broke the long-standing bipartisan consensus on trade, and the lesson was not lost on Biden. The new administration, although it has departed from many Trump-era policies, has continued to move away from trade expansion itself as a primary goal of economic policy. Biden’s economic advisers have made clear that the United States will not pursue the TPP or any other trade agreement, for that matter, until Congress passes major new domestic spending legislation and international negotiators rewrite trade rules to include protections for workers and the environment.

Among the measures Biden officials have proposed for reshaping the international trade regime are restrictions on imports of carbon-intensive steel and aluminum; a loosening of intellectual property rules that protect corporate patents in order to better fight pandemics; and prioritizing goods produced domestically with domestic supply chains. Such efforts to control the social effects of trade run directly counter to the dominant approach pursued in Washington for decades, which sought to encourage unrestricted international commerce. The Biden team’s efforts coincide with similar economic policies—such as the European Green Deal—that other governments are carrying out to combat climate change, fight international corporate monopolies, and enforce international tax rules.

That is why the official communique of the G-7 summit in Cornwall in June read so differently from those of past years. Instead of laments about “protectionism” and wait-and-see approaches to climate change (as was shown in the [2016 communique](#), the last

before Trump took office), the 2021 statement openly acknowledges the unequal gains that have resulted from trade and sets specific goals to reduce carbon emissions industry by industry. The shift was also captured by the panel report “Global Economic Resilience” that I co-authored with experts from other G-7 countries and that was released in October. The report sets out to give a conceptual framework for what has been called the Cornwall consensus, a replacement for the Washington consensus.

REWRITING THE RULE BOOK

The G-7 report has several main points. First, trade liberalization should no longer be seen as an end in itself. Not only are tariffs already at historically low rates, but a growing body of economic research has shown that, since the 1990s, many of the trade agreements of the neoliberal era have not been particularly helpful and, in many cases, have been harmful to workers in the United States and abroad. Going forward, governments should focus less on trade agreements centered on tariff reduction per se and more on leveraging trade in the services of more robust regulatory standards, especially to encourage sustainable production. For example, the United States and the EU recently announced plans for the Global Arrangement on Sustainable Steel and Aluminum, which will keep dirty metals out of their markets and produce common ways to measure the embedded emissions in these industries. Notably, the agreement makes no reference to WTO rules or processes. Rather, the two trading giants staked out a common vision and invited the rest of the world to join them. Japan and the United Kingdom reportedly are inclined to do just that.

Existing international trade rules also tend to facilitate what Biden’s chief trade representative, Katherine Tai, has called a “race to the bottom” by creating incentives for

companies to lower standards to be more competitive. “This is part of the reason why, today, the WTO is considered by many as an institution that not only has no solutions to offer on environmental concerns, but is part of the problem,” Tai remarked in April. To change this perception, our G-7 panel report calls for trade negotiators to rewrite trade rules to address challenges such as pandemics and the climate crisis, not hinder nations’ responses.

The Cornwall approach also calls on governments to invest more in what we call “high-quality future growth”: supporting the energy transition, including public transportation infrastructure; high-quality education and training; and climate-focused research and development. This is a question of both scale and scope. The economist Nicholas Stern has argued that in order to tackle the climate crisis and put growth levels on a sustainable trajectory, countries need to increase public investment by two percent of national income above pre-pandemic levels, spending collectively at least \$1 trillion every year between now and 2030. The point is to encourage investment that will help desired new sectors of the economy grow rather than focusing on immediate consumption. Indeed, declines in public investment help explain the supply chain woes now roiling ports and industrial production. For example, the EU’s so-called Stability and Growth Pact requires keeping government budget deficits under three percent and overall government debt below 60 percent of GDP. As the economist Joseph Stiglitz has noted, this is onerous in normal times, unwise during business-cycle downturns, and outright lunacy in the face of the urgent, large-scale investments needed to fight climate change. COVID-19 forced the relaxation of those rules, and policymakers in France, Germany, and Italy have called for rethinking them going forward.

The corporate minimum tax upends more than a century of international tax rules.

Governments must also invest in specific policy directions. For example, scientists are developing many promising technologies to enable various industries to reduce carbon emissions more rapidly. But to put these technologies into widespread use, they need governments to create and backstop markets. By making large-scale investments in products such as green steel, governments can create markets, readying new innovations for large-scale private-sector investment. Governments can also make public investments in new technologies that firms can't or won't fund. And in both cases, governments can work with communities in and around the new industrial facilities to ensure that they share in the gains. The economist Mariana Mazzucato, a fellow co-author of the G-7 report, has described this approach as “mission-driven industrial policy.”

Finally, governments need to overhaul how top earners and corporations are taxed and regulated. Between 1995 and 2020, the share of global GDP controlled by the top 0.00001 percent tripled, giving the highest earners extraordinary influence on economic policy. Lobbied by corporations and the superrich, governments have often looked the other way as tax avoidance ballooned. Meanwhile, monopoly and monopsony power—when a single employer such as Amazon dominates a product or labor market—has spread in many areas of the economy, harming consumers and workers alike. The economist Thomas Philippon, another co-author of the G-7 report, has found that decreased competition in many industries now costs the typical U.S. household more

than \$5,000 a year. This is at a time when nearly 40 percent of households struggle to pay for an unexpected \$400 expense.

The historic international agreement this fall to establish a 15 percent minimum tax on corporate profits is a step in the right direction. For the first time, more than 130 countries have pledged to adhere to a global floor on tax rates. The largest and most profitable firms will enjoy less discretion over where they are taxed, as countries move closer to what is known as “formulary apportionment”—requiring corporations to allocate their worldwide income to the jurisdictions where their sales, assets, and payrolls are most concentrated. This approach will help workers by ensuring that public funds are available for socially beneficial projects, such as education or paid leave, and by generally helping restore the balance of power between labor and capital. Upending more than a century of international tax rules, the corporate minimum tax shows that large-scale change is possible and achievable.

There is much more to be done, however. As recent investigative reporting on what have been dubbed the “Pandora Papers” has shown, at least five U.S. states have become major offshore havens for international wealth, shielding the assets of national and global elites from public scrutiny and financial accountability. Biden, who spent 36 years as a senator from one such haven, Delaware, could take a strong stand by ending the practice. The president has already taken important steps to limit the power of monopolies, issuing an executive order to promote competition in the economy and putting antitrust experts, such as Lina Khan and Tim Wu, in key administration positions. But the administration still needs to figure out how to deal with Facebook and other dominant technology companies that do not charge user fees but nonetheless

wield enormous political and economic power through their broad control of digital media. European governments are further ahead on this type of regulation, so this is an area in which the United States is playing catch-up.

DEMOCRACY'S BEST DEFENSE

In the United States and many other countries, the elements of a robust new political economic agenda are in place. Yet translating the new approach into new rules will require confronting the vestiges of corporate capture, when large private sector interests gain sway over government policy, a phenomenon that just in the last few months has impeded ambitious efforts to keep the cost of medicines down. In the United States, powerful interests in Washington have resisted the Biden administration's effort to enable Medicare to negotiate drug prices to make them more affordable, and the German government has opposed relaxing WTO intellectual property rules to facilitate global vaccine access.

The Cornwall consensus has challenged rich countries to adopt a new economic worldview in which the state can use its power to limit corporate influence and offer new protections for workers and the environment. To the surprise of many American progressives, the current occupants of the U.S. executive branch agree. In politics, business, and everyday life, there are many signs that the dominance of neoliberal ideas is waning—but proponents of the Cornwall consensus have much work to do to convince both powerful interests and the public to embrace their thinking. There are significant obstacles to putting the new ideas into practice, including not only the difficulties of the legislative process but also the threat of right-wing populism in the United States and elsewhere, which seeks to provide its own, inward-turning and often nativist alternative

to the status quo. The appeal of a more nihilistic, less racially and religiously inclusive populism has only grown in the last five years and has gained ground in major political parties in many countries.

The resurgence of forces that seek to undermine democracy also shows how urgently a more inclusive economic vision is needed. As new social science research that reviewed over 100 countries across many decades has shown, democracies have been able to build popular support for their institutions, but only when they are successful at delivering economic growth, stability, and public goods. This brings to mind one of U.S. President Franklin D. Roosevelt’s fireside chat observations in 1938: “Democracy has disappeared in several other great nations—not because the people of those nations disliked democracy, but because they had grown tired of unemployment and insecurity, of seeing their children hungry while they sat helpless in the face of government confusion and government weakness through lack of leadership in government.” A similar risk exists today. Governments must show they can act individually and together for the public good. No less than the future of democracy may be at stake.

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- FELICIA WONG is the president and CEO of the Roosevelt Institute. She was the US representative on the independent G7 Panel on Economic Resilience.