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Esteban Rossi-Hansberg

Raffaella Sadun

Fiona Scott Morton

Stefanie Stantcheva

Nicholas Stern

John Van Reenen

**CEPR** PRESS

Luis Garicano

# Capitalism after Covid

Conversations with 21 Economists

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## **CEPR PRESS**

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# Capitalism after Covid

Conversations with 21 Economists

Luis Garicano

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# Luis Garicano

Luis Garicano is a CEPR Research Fellow and a Professor of Economics at IE Business School (currently on leave). Now he is a Member of the European Parliament, where he is the economic spokesman for Renew Europe. Before entering elective politics, he was a full Professor at the London School of Economics and at the University of Chicago, from where he received his PhD. His academic work focuses on the future of work, the relationship between technology and inequality, and economic growth. At the same time, he has carried out significant research and has made several proposals in the area of European financial integration. As a Member of the European Parliament, during the pandemic he led the development and negotiations on NextGenerationEU (the European recovery plan), and he is now a Member of the Parliament's Working Group on the Recovery and Resilience Facility.

# Preface

This book is a carefully edited transcription of a series of interviews with top economists on the future of capitalism that I conducted between March 2020 and February 2021 and which appeared on [Spotify](#), [Apple Podcasts](#) and [YouTube](#). I have edited the original transcripts to remove any outdated references (eliminating, for instance, issues such as the arrival date of vaccines or the timing of economic recovery), as well as for brevity, clarity and style, always with the explicit consent and feedback from my guests.

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This book illustrates that, beyond the hot controversies over debt and inflation that often dominate the public debate, economists have a lot to say (and to agree on) on how to make our economies work better in the aftermath of the pandemic: on global value chains, on the future of work and location, on how to fight poverty, on the economics of digital platforms and what to do to constrain their power, on the structural factors behind the long-term drop in interest rates and the ‘savings glut’, on the economics of climate change, and so on. Their research has a lot to add to the understanding of policymakers and of all citizens of what makes for good and bad policy. I hope that this book will succeed at conveying their insights.

I thank all the economists who agreed to participate in the interviews and their transcription. As an economist who now works (provisionally!) as a politician, I knew there was a lot for policymakers to learn from the very top active researchers in the profession. I hope you, the reader, will feel likewise. Of course, there were many other economists with whom I would have loved to talk. I must apologise to David Autor – we recorded a fantastic interview with him which, due to technical difficulties, was lost and we were not able to publish.

The project started in the darkest moments of the pandemic and finishes when we can see the light at the end of the tunnel. We started with the objective of helping European policymakers make more informed decisions in those uncertain times. To accomplish that aim, I had the hardest working and most enthusiastic team in the European Parliament. This group of young people includes Abel Sánchez, Gabriel Betancor, María Fayos, Diego Viudez and, especially, Pablo Balsinde, who kept this project going for 30 weeks through his hard work and enthusiasm and did the heavy lifting in editing each interview for this book.

The full videos of the interviews are available on my web page at <https://luisgaricano.eu/videos/>. These are generally around three times the length of the edited transcripts, and include all of the interviews we conducted.

I hope you enjoy reading the interviews as much as I enjoyed conducting them.





# Introduction

The economic policy debate during this crisis was more constructive than in the aftermath of the Global Financial Crisis of 2007–08. Whereas in the last crisis economists took sides in the austerity–stimulus battle, this time around economists converged rapidly on “whatever it takes”. An example of this consensus are the two eBooks that CEPR/VoxEU published in the first two months of the pandemic, which served to inform the debate on the economic policy response (Baldwin and Weder di Mauro, 2020a, 2020b). The download numbers were enormous.<sup>1</sup>

Partly because of the intellectual consensus, the policy response was powerful everywhere and significantly cushioned the impact of the lockdowns on the population and on the business sector. The immediate challenge now, in the aftermath of the pandemic, concerns the sustainability of the enormous debt accumulated by all countries in the short span of one year. The debate and uncertainty surrounding the risk posed by this debt overhang are to be expected because, as [Markus Brunnermeier](#) explains, such high levels of debt generate paths with multiple equilibria – we can remain in the low rates and sustainable debt service equilibrium, or jump to an equilibrium with high rates and financial instability. The equilibrium in each country depends partly on the institutional relationships between governments, central banks and financial systems – fiscal dominance and financial dominance being two key threats.

[John Cochrane](#) emphasises that the key is not the level of the debt-to-GDP ratio, but whether a country’s plan for paying down the debt is credible. Since there is no threshold past which a debt crisis is automatically triggered, crises tend to happen suddenly, when a government stops being credible. As Cochrane points out, all it takes (as Greece’s euro crisis experience shows) is an accounting scandal. Moreover, once policymakers believe the budget constraint is not binding, the temptation to simply shovel money at problems is irresistible, further undermining credibility and increasing the chances of a sudden crisis. This is particularly the case, as [Jesús Fernández-Villaverde](#) points out, in the current context of political polarisation. Debt repayment will be less credible in countries with deep and growing ideological divisions. On the other hand, the pandemic might have created incentives for new forms of work that could enable for the extension of people’s working lives, easing the pressure on national budgets.

<sup>1</sup> Of our guests, Lucrezia Reichlin and Agnès Bénassy-Quéré, as well as myself, were amongst the early economists who argued on VoxEU for the establishment of a new ESM covid line, as well as a European Recovery Initiative (Bénassy-Quéré et al. 2020a, 2020b, Garicano 2020). Also on VoxEU, Francesco Giavazzi and Guido Tabellini first proposed the idea of using perpetual bonds to finance an ambitious recovery package in late March 2020 (Giavazzi and Tabellini 2020), and a few days later Guy Verhofstadt and I proposed how it could be implemented within the Union budget and financed by new own resources (Garicano and Verhofstadt 2020). A few weeks later, we were seconded by George Soros (2020) and the Spanish government (Government of Spain 2020).

Unlike during the heyday of globalisation, credibility now cannot come from letting decisions be taken by large technocratic entities. As [Lucrezia Reichlin](#) argues, the empowerment of the central banks to undertake quantitative easing comes at the expense of democratic legitimacy. Maintaining such legitimacy requires that fiscal policy, under political control, must take the lead over ‘helicopter money’ or other forms of aggressive quantitative easing.

In sum, both monetary and fiscal policy must be credible, as [Agnes Bénassy-Quéré](#) points out. For an optimal economic policy, we need rules that will make the behaviour of both fiscal and monetary authorities predictable.

## A CRITICAL JUNCTURE

Beyond the immediate problem of debt sustainability, the pandemic gives us a chance to rethink public policy. Our societies can benefit from the past year of collective reflection to solve the imbalances that have accumulated over the last decades. The pandemic can (and must) serve as a moment to reset our economies. In the words of [Daron Acemoglu](#), the pandemic has created a ‘critical juncture’ – a moment in which large changes are possible.

He points out that the virus has deepened the existing inequalities in the distribution of wealth and income. While knowledge workers have worked from home and been able to enjoy a certain degree of health and job security, those whose jobs necessarily involve physical contact – from supermarket workers to waiters – have either been highly exposed to the virus or have lost their jobs with the shutdown of hotels, restaurants and the entire travel industry.

Moreover, high levels of inequality are at the root of global trade and political conflicts. [Atif Mian](#) explains how increasing inequality has driven the dangerous increases in public and private debt in Western societies and how the pandemic has exacerbated the structural challenges hampering growth and threatening financial instability. Further, [Michael Pettis](#) argues that inequality within countries is central to understand long-term trade relationships and the strain that trade is placing on domestic policies. In his view, increases in inequality explain the long-standing American trade deficit, Germany’s surpluses and China’s economic outlook.

It is easy to conclude from these increasing tensions that globalisation is at risk. ‘Deglobalisation’ has become a buzzword, and many economists and politicians worry about the resilience of supply chains. Contrary to those worries, [Pol Antràs](#) argues that we are not experiencing deglobalisation. He points out that studying trade at the firm level not only serves to appreciate the resilience of supply chains during the pandemic, but also reveals that the top 100 companies on the planet continue to account for a large proportion of trade flows.

If wealth and economic activity is increasingly concentrated among fewer individuals, it is also becoming concentrated in fewer geographical locations and firms; we have seen the growth of superstar firms and of superstar cities. [Esteban Rossi-Hansberg](#) has studied both. Concerning superstar firms, he finds that that information technology is the key reason for concentration, contrary to those who believe that the enormous increase in the size of large firms is due to the lax enforcement of antitrust laws over the last decades. Similarly, the growth of superstar cities is related to the increasing importance of talent, and the need for talent to be concentrated to be creative and generate ideas. Addressing the problems posed by both superstar firms and cities is also (potentially) possible in the aftermath of the pandemic.

Solving these problems cannot come at the cost of growing the leviathan of a remote state. Several economists pointed out that governments very rarely cut back in size after they grow to respond to a given emergency. Indeed, it is unlikely that, after the pandemic, the state will retreat and give up the size it has gained. But, as [Acemoğlu](#) and [Wendy Carlin](#) argue, democratic institutions will have to be reinforced in parallel to the growth of the state. We will also need to improve how a newly reinvigorated public sector is run, as [Carol Propper](#) and [Rafaella Sadun](#) emphasise.

Finally, we have a unique opportunity to decisively tackle climate change. Like fighting the pandemic, where our protection against a new virus is as strong as the weakest link, stopping climate change is a pure global public good. No country or group of countries can succeed on its own; all inevitably benefit from the efforts of the others. The pandemic shows us the cost of acting late and in an uncoordinated manner.

All the above challenges are complex, but I believe there is now an opportunity for our societies to rethink our responses and to be much bolder. During the interviews, our guests gave us plenty of ideas on how to tackle all of these challenges.

## TACKLING INEQUALITY

[Atif Mian](#) argues that to reduce inequality policies must focus, first, on achieving more equitable growth through a significant increase in public investment, and second, on addressing some of the legacies of the imbalances, particularly through an increase in the progressivity of taxation, without necessarily increasing the total tax collected. In this respect, the research on optimal taxation that [Stefanie Stantcheva](#) discusses is an important tool to design better taxation for human and physical capital and innovation. She argues for a system that maximises investment in people and thus allows individuals to continue studying and learning through their lives. As to the risks that international competition poses to progressive taxation through the migration of innovators and individuals with high human capital, [Stantcheva](#) points to a key countervailing factor: the impact of local amenities. Inventors and firms become less sensitive to taxes when they have good amenities locally. Thus, progressive taxation requires providing the right infrastructure and amenities in order to reduce the migration responses to taxes.

Reducing inequality does not mean we should leave aside our traditional focus on fighting poverty. [Oriana Bandiera](#) highlights a significant shift in our understanding of poverty. While, traditionally, social assistance programmes were designed to subsidise consumption, her research and others' suggests that they should be geared towards investment. Poverty is essentially a limit on the set of opportunities, and large investments are needed to overcome those barriers – whether these be investments in housing (think of the 'Housing First' programmes against homelessness in Finland and elsewhere) or in capital stock, as Bandiera's own research finds.

Beyond public investment, taxation and investing in fighting poverty, our societies must ensure that opportunity is broadly dispersed using all possible tools to achieve this. [Dani Rodrik](#) argues in favour of reinforcing skills programmes but adds a new twist: governments should intervene to redirect technological progress so that new technologies complement labour as opposed to substituting it. At the same time, [John Van Reenen](#) proposes that we identify at early stages those children with high potential in low opportunity areas, and give them necessary extra support, resources, and encouragement. For example, for children even to conceive of themselves as inventors (and presumably, as members of any other high human capital profession), it is essential to expose them to role models in those professions early on.

### A MORE BALANCED GLOBALISATION

According to the logic outlined by [Atif Mian](#) and [Michael Pettis](#), if we address inequality within countries, we will also automatically address the corresponding savings gluts and international (trade and financial) imbalances, since they are the result of internal demand imbalances. Further, Pettis proposes that the world engage in a new Bretton Woods-like agreement, in which both surplus and deficit countries would agree to adjust under a new global trade and capital flow regime. A key objective would be to increase the consumption share of income in surplus countries such as Germany and China through wage growth.

[Pol Antràs](#) explains that outsourcing generally increases intermediate input production, since increases in productivity generally tend to increase scale. Thus, a broadly positive view of globalisation is still warranted. For him, a better globalisation requires dealing better with inequality. And this in turn is a question of better domestic policies that truly compensate those who lose from outsourcing and automation – an eternal desideratum of economists but an area of policies that we seem to have been particularly bad at implementing over the last few decades.

The imbalances in our current globalisation model do not only concern inequality. [Dani Rodrik](#) was one of the first economists to draw attention to the shortcomings of the current wave of globalisation two decades ago. In his view, globalisation (what he terms 'corporate globalisation') has gone too far in areas that benefited large corporations – financial globalisation and free capital mobility, trade in services, intellectual property

– while it has not gone far enough in other areas such as climate, migration and other challenges that would benefit from greater global cooperation. To know where global rules are beneficial, he argues we must apply two criteria: Is there a global public good at stake, as with climate change or pandemics? And is there a risk of ‘beggar-thy-neighbour’ policies, as with tax competition? Absent one of those reasons, local policies should rule unimpeded.

Will this critical moment also be a good opportunity to address the concentration of economic activity around big cities? It would appear so, as teleworking could allow for a larger dispersion of economic activity in space, reducing the risk for workers of being stranded in ‘left behind’ places (with the extremely negative consequences for our political systems that this has, as we have found recently).

But according to [Esteban Rossi-Hansberg](#), amenities are essential in driving individuals’ choices of where to live. Cities have grown larger and more concentrated because people are willing to pay to participate in their ecosystem and leverage their amenities. Thus, it is unclear whether the Zoom revolution will upend this. In fact, it is also unclear, according to Rossi-Hansberg, whether it is desirable as, absent the coordination in big cities, we might lose the externalities, in terms of generating new ideas, that arise from having workers come together in the office.

## CONTAINING THE NEW LEVIATHAN

After the unprecedented policy response to the pandemic, we expect governments to grow larger, leading to an increase in interventionism and, potentially, crony capitalism. That is why we need stronger democratic institutions, as [Daron Acemoglu](#) argues.

Moreover, in a world where the state is destined for a stronger role, we need to improve the way public organisations are managed. [Carol Propper](#) emphasises designing incentives carefully in public sector organisations, by introducing private sector practices such as competition or targeting, which prevent discretion and cronyism. [Raffaella Sadun](#) agrees on the need for public sector entities to incorporate management practices from the private sector, but emphasises the importance of being able to leverage and deploy talent. While Propper highlights the importance of institutional aspects of public (healthcare) systems, like their excess capacity or their degree of regionalisation (to ensure agility), Sadun emphasises the importance of good managers.

We also need stronger, more resilient societies to counter this larger role for the state. As [Wendy Carlin](#) puts it, we must build communities by strengthening the ‘Third Pole’ where humans act beyond compliance with state authority and beyond the search for material incentives. The big lesson of populism is the importance of motivations such as identity, reciprocity, and so on. And policies must build on this lesson – they must be

designed to avoid crowding out communities. For instance, [Philippe Aghion](#), building on Carlin's work, notes a trade-off between regulation and trust: the growth in regulation leads to a growth in distrust which, in turn, generates more demand for regulation.

## PROMOTING INNOVATION AND CURBING THE POWER OF DIGITAL GIANTS

[Fiona Scott Morton](#) lays out the main ways in which Big Tech's market power hurts consumers and stifles investment. She argues that the right analogy for social media is the telephone network, and that the solution to curb the power of big social network companies like Facebook is, as we did with the phone network, to impose mandatory interoperability, allowing people to communicate between networks. This would differentiate them from each other, for example by providing different default settings on privacy or content. More broadly, the whole technology sector, including Google and others, is ripe for a wave of new antitrust intervention, as Scott Morton explains.

Beyond Big Tech, the key necessary condition for growth in advanced economies is the continuous generation of new ideas. But the productivity of research is in long-term decline, as [John Van Reenen](#) argues. We have been increasing the number of researchers, but the rate of generation of ideas, and of economic and productivity growth, has not increased. We need to dramatically improve our innovation policy. This requires investing in generating innovators – [Van Reenen](#) finds enormous numbers of 'missing Einsteins' among women and minorities who need the support of our educational systems and a new emphasis on opportunity. Tax changes are also required, as [Stefanie Stantcheva](#) argues. There is also an increasing consensus that, especially in certain industries, the government has a larger role to play through universities, mission-oriented agencies and ambitious subsidies. [Philippe Aghion](#) argues that these kinds of sectoral government interventions must not hurt competition or globalisation, and that they must focus on three areas: digital, health and climate change.

## COMBATING GLOBAL WARMING

We talked to two world class experts on the economics of climate change: [Nick Stern](#) and [Michael Greenstone](#). Of course, both agreed on the need to step up dramatically the fight against global warming. However, they had two different approaches to climate policy. They disagreed on the extent to which there is a trade-off between green investment and investment for recovery. Stern pointed out that green investments in areas like mobility or energy efficiency are exactly the kind that Keynes' preferred – fast, labour-intensive and with strong and clear benefits. He has an optimistic view of a green society, where green investments allow us to attain other economic and social objectives and spur a new wave of innovation without major trade-offs.

In contrast, Michael Greenstone was concerned about the extent to which politicians are always on the lookout for the ‘free lunch’ – implementing policies that feel good and are politically easy, but that may not be the most efficient to fight climate change. A particularly insightful example was energy efficiency. He explained how the costs of these policies exceed the potential climate benefits. His warning, overall, is not to focus on policies that attain objectives that seem reasonable, like insulating houses, but to focus on the actual goal of the policy – that is, reducing carbon emissions. In this sense, he leaves us with the age-old warning from economists to politicians: in the fight against global warming, as in so many other areas, there is no such a thing as a free lunch.

Indeed, fighting climate change may be the most important challenge of the century. Nevertheless, we will have to tackle it while also addressing inequality within our societies, improving democratic institutions and the state, restarting productivity growth, and managing a multipolar world. Economists like those interviewed in this book, and many others, are working to provide answers to these challenges. I hope this book encourages them and many others to continue this fascinating work.

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# DEBT SUSTAINABILITY



# Markus Brunnermeier: Let's compare the central bank to a race car

Markus Brunnermeier received his PhD from LSE in 1999, and since then he has been a Professor at Princeton University, where he is also the director of the Bendheim Center for Finance. He is the Chair of the German Bundesbank's Research Council.



His research straddles the intersection between financial markets and macroeconomics, with a special emphasis on inflation, financial stability, asset bubbles and liquidity crises.

He was one of the first economists to pay attention to the sovereign-bank nexus as a central source of financial instability in Europe (the 'doom loop'). Along with a group of other economists (of which I was a member), he proposed that Europe establish a safe asset without joint liability (ESBies) (Brunnermeier et al. 2011, 2016a). The proposal was taken up by the European Systemic Risk Board and the European Commission, and was voted by the European Parliament in April of 2019.

Markus is a prolific researcher, but I particularly appreciate his ability to incorporate a historical perspective into his rigorous, theoretically grounded approach to economics. From his work on the history of asset bubbles (Brunnermeier and Schnabel 2016) to his definitive account of the last financial crisis, *The Euro and the Battle of Ideas* (Brunnermeier et al. 2016b).

I interviewed Markus on 14 June 2020; you can watch our conversation [here](#) and listen to it [here](#).

## THE DEBT OVERHANG

*We have seen an unprecedented fiscal expansion to respond to the pandemic, and there are concerns about the debt overhang that countries will come out of the crisis with. Is this debt overhang going to hamper growth in Europe, particularly by making it (through high taxes and low growth) less attractive to young, productive people? As you point out in your book, "migration is like a private default on government debt" (Brunnermeier et al. 2016b).*

One should be worried. High debt levels are a problem for growth. We see it in Japan and in other countries – they have huge debt levels and they don't get out of a low-growth environment. On the other hand, as long as the interest rate burden is low and there's confidence in the various countries, I think we are relatively safe.

However, there's of course always a good and a bad equilibrium. You might switch to the bad equilibrium: a high interest rate and a high probability of a default. If you jump to the panic room, then the dangers are very high. Whereas at low debt levels, you never have this danger of jumping into the bad equilibrium if people panic.

*To avoid that bad equilibrium, people like John Cochrane, and myself during the crisis (Garicano 2020), have argued that countries should be going into extremely long-dated debt (even perpetual) to lock in these low interest rates, to get that insurance. Others have been arguing the opposite, that we should roll over very short-dated debt and secure the lowest possible rate. What's your view?*

It makes sense to issue more long-term to the extent you can place it on the private market; it is a form of insurance. The question is how costly this insurance will be. Right now, it's not so expensive, so countries may want to buy this insurance. It would be a stabilising force and would take uncertainty out of the system. It would allow private companies to plan and invest more, and that might actually increase growth. Private companies worrying about a potential default in their sovereign's debt creates a lot of uncertainty about whether the country may jump to the bad equilibrium.

*Have we done enough in Europe to prevent the 'doom loop' between banks and sovereigns from recurring?<sup>1</sup>*

We did quite a lot. The progress was significant. But I think there still are open issues and the doom loop is still dangerous. An example: now there's a tendency for a government to push losses onto the financial sector, because the financial sector now has to be bailed out at the European level. So, for example, if you have a mortgage moratorium, you push problems from the housing sector onto the banking sector, knowing that the problem will become European until the ECB or some European entity has to help out. In sum, there are incentives which make the resolution of banks more difficult because losses can be pushed across institutions. And once pushed on the banking sector, the doom loop kicks in again.

Of course, we have a better banking resolution framework at the moment compared to ten years ago. There's still a lot to be done, but the glass is more half full than half empty.

We also need more progress on the financial market side. We need more venture capital structures, more asset managers... We can't just rely purely on the banks. We must shift away from a bank-based model to capital-markets based model. Less progress has been made in this Capital Markets Union, compared to the Banking Union.

1 The doom loop is a term for what is also known as the 'diabolic loop' or the 'sovereign-bank nexus'. It consists of the vicious cycles of financial instability that result from a banking system being excessively exposed to its own government through sovereign debt holdings, and from the same government being excessively exposed to its banking system through deposit insurance and bailouts.

Finally, at the moment the system is still relying a lot on the ECB intervening. The fact that the fiscal authorities intervene helps a lot, but one major player is still the ECB. We need to take the ECB out of the forefront.

## FISCAL DOMINANCE AND FINANCIAL DOMINANCE

*You have written about financial dominance (Brunnermeier 2015), arguing that banks have incentives to become “strategically weak” since, when things go bad, they can be relatively certain that they will be bailed out. What should we do to make sure that the interest of the citizens come first?*

There is a literature about fiscal dominance versus monetary dominance, which is about who is in the driver’s seat – the central bank (the ECB), or is it the national governments? There’s always a ‘game of chicken’ going on between the two, but I argue there’s a third player, the financial sector, which might play a role in this game.

To some extent, the financial sector has an incentive to pay out dividends early because the government, if the financial sector is well capitalised, has an incentive to push losses onto it. The financial sector recognises this and may pay out dividends as quickly as possible. If banks are weak, the government won’t be able to push losses onto them. So, to prevent financial dominance the first measure to implement is to restrict dividend payments. This could also include bonus payments to make sure that the buffer stays strong. We must make sure that banks don’t strategically weaken themselves, so that we don’t run out of buffers and then the taxpayers have to help them out.

*The financial system is used to living with extremely low rates. When interest rates are zero, any move, even if marginal, is going to drastically change the prices of long-dated securities (potentially threatening financial stability). How will this particular kind of financial dominance play out?*

Indeed, the big problem is that everything is way more sensitive at a low interest rate. And on top of that, once interest rates are so low, you’re prone to having asset bubbles that make financial stability much harder to handle.

But there is also pressure from the fiscal side. Let’s suppose a central bank were to hike the interest rate. It would also have to pay a much higher interest on excess reserves. Now, we have built huge balance sheets and we don’t pay anything (the rate is even negative, banks have to pay a fee). Once you hike the interest rate, suddenly you have to pay interest to banks, and that can be costly for the central bank and ultimately for the taxpayer.

In the US, the central bank only pays interest on excess reserves, but I can imagine that what they call excess reserves and regular reserves will change at some point, in order not to have to pay interest. Another possible solution is financial repression through compulsory reserves for banks or forced savings for other agents. It helped the UK and the US to lower their debt levels after the Second World War. Very low interest rates,

perhaps even in real terms negative interest rates for the savers and banks, and having high inflation with negative real interest rates all helped to bring the debt burden down. To do this, one must limit what people can invest in, and essentially tax all the financial aspects of the economy.

## INFLATION RISK

*When we look at inflation over longer periods of time, we see that the fiscal side matters a lot. Few are worried about inflation now, and many of those who do acknowledge the risk are confident that central banks would be able to raise rates if necessary. However, there are two concerns about central banks' ability to raise interest rates. First, the financial system has become accustomed to these very low rates, so that the smallest policy changes can be destabilising. Second, governments have become accustomed to low interest rates too, having enjoyed practically no funding costs in the last few years. What's your view on whether there is risk of inflation or not?*

Indeed, in the short term, we have more disinflation risk or low inflation risk. But then later on we might have higher inflation risk; as I call it, we may have an 'inflationary whipsaw'. Let me compare the ECB with a race car. You need a car which has good acceleration, but also very good brakes. Right now, we can put the accelerator on, but you can only put the accelerator on because you know you have the brakes. One of these brakes is, of course, the independence of the central bank; one needs to protect it in order to put on the brakes. At this point independence is easy to secure given that the programmes are popular, but central banks become very unpopular when they put the brakes on.

We should prepare now for the possibility that down the road we will have inflationary pressures. As you said, we might not even have to raise interest rates a lot, but even doing so would already create a lot of problems. The fine tuning would be very delicate. You also have to have a monetary framework which takes all of these things into account, particularly the financial stability problems that sovereign debt risks may pose (especially with high interest rates).

What really matters is the real interest rate, not the nominal one. Governments would be able to handle a rise in inflation if the real interest rate were to stay low, because tax revenue would grow at a faster rate. However, you have the Taylor principle: in order to get inflation down, you have to bring the interest rate up more than inflation. That means the real interest rate would go up, and that would slow down the economy significantly.

We know from history that what you do down the road is very important. It is very instructive to compare the UK and Germany after the First World War. Both had high debt levels, but in the 1920s there was a big decision in the UK to go back to the gold standard. They brought inflation down even to deflationary levels, which Keynes criticised at the time. It was not wise to return to the old gold standard.

At the same time, in Germany, Minister Walther Rathenau couldn't implement a fiscal plan to reduce government debt, like the UK did. Instead, they gave up and essentially took the inflationary route. So political stability is crucial to bring the fiscal situation in order and to avoid inflationary territory. It all depends on what you think will happen in five years. It's a very long-run phenomenon, so you have to have good institutions that can implement measures even if unpopular.

*On central bank independence, it would seem that Europe is in a better place than the US or the UK. It's very difficult for any particular government or president to put pressure on the European Central Bank,*

The ECB's independence is guaranteed by a Treaty and that puts it in a very secure position. But I would emphasise that in order to bring inflation down, you have to implement fiscal measures as well. So that's when we come back to this game of chicken between fiscal dominance versus monetary dominance. The central bank alone cannot do it if the fiscal authorities or the governments don't react to it.

## REVERSAL RATE

*You have pointed out in your research that lowering interest rates, at some point, not only does not help but potentially hurts the economy. You have called the point at which that happens the 'reversal rate' (Brunnermeier and Koby 2019). How can we tell how far we are from that particular point?*

Normally when you cut interest rates, you stimulate the economy. But if you cut them too low, at some level it can become counterproductive. The main reason for that is that once you cut interest rates enough, banks lose money, yet you need the banks to channel through funds to the economy. If banks are not well capitalised and one decapitalises them further (through lower interest rates), at some point they will stop acting as credit intermediators, ultimately reducing the growth level.

The question is: where is this threshold? Is it -1%, is it -2% or -10%? Who knows? It is very hard to estimate it. The only way you can find out is to get there, because you have no data points; rates have never been so low. It's very hard to have a model which projects to a point where the economy has never been.

So, the policy recommendation is to just tiptoe – go closer and closer with experiments, tracking whether the credit volume goes up or not. You would never want to do a big interest rate cut, only tiny ones. And if I may say one more thing, the ECB made a smart move by offering to let banks borrow from them at -1% and then to park it with them at -0.75% conditional on them lending to the real economy. It's a smart way to recapitalise the banks, and a way to push the reversal rate down.



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# John Cochrane: Throwing money down ratholes

John Cochrane received his PhD from the University of California at Berkeley in 1986 and has spent most of his academic career as a Professor at the University of Chicago, first in the economics department and then at the Booth School of Business. Since 2015, he is a Senior Fellow at the Hoover Institution at Stanford University. He is also an adjunct scholar at the Cato Institute, among other affiliations.



John's research lies at the intersection of macroeconomics and finance, mostly focusing on asset prices and monetary policy. He has written several books, including the prominent textbook on asset pricing, *Asset Pricing* (2005). He has also done extensive work on the relationship between fiscal policy and inflation, most recently summarised in a book draft on the *Fiscal Theory of the Price Level* (2021).

John is one of the key voices in American economic policy debates, regularly contributing to the *Wall Street Journal*. He was also one of the earliest to keep a regular economics blog, the *Grumpy Economist*, which is everything a great blog should be: funny, opinionated and well informed.

I interviewed John on 12 July 2020; you can watch our conversation [here](#) and listen to it [here](#).

## INSURANCE VERSUS INCENTIVES

*You taught me my first Chicago class of macroeconomics; it was not Keynesian, but it was a real business cycle-based class. Yet now we all talk about employment benefits, bailouts, and unlimited liquidity for firms. As Bob Lucas once said in 2008, are we all in Keynesians in the foxhole? Is this a moment where people like you, who have worked on the view that the economy is basically self-equilibrating, consider changing your minds? How do you read what's happening intellectually?*

All public policy balances this problem of help versus incentives. If you want to do effective public policy, you have to recognise that the more support you provide, the more incentive problems you have. Keynes didn't talk about bailouts, but our financial system is bailout central now. And Bob may be right – any one of us put in the Federal Reserve chairman's seat is going to throw money at a crisis like this one and worry about the moral hazard later. Yet nobody's worrying about the moral hazard, and the incentive problems are still there.

And then there is the economic recovery. You know a true Keynesian would say there is never a problem of supply; just generate enough demand by giving people enough money and supply will take care of itself. Yet we need to provide incentives for people to go back to work. Giving people money is not going to bring restaurants back if restaurants have to halve the number of tables they can have at a time. We have a supply problem.

We also have a looming financial problem if the recession continues and companies run out of money. This is a much more sophisticated question than borrowing money, giving it away and hoping that the demand brings about its magical supply. In sum, you haven't made me admit to Keynesianism yet.

*You're differentiating between an insurance function and the idea of aggregate demand management. Is that the right distinction to think about?*

That's a very important point. There's an insurance function of protecting people from going bankrupt in a pandemic; then there's the Keynesian view that the way to get growth again is simply aggregate demand. Either borrow or print money and give it to people. And that's all the government needs to do to worry about the economy. You don't have to worry about what's going on in the factories and labour markets and so forth. What we've just been talking about is the inefficiency of running a factory under social distancing, the need to get workers to go to new jobs, the need to get new companies started, the need to have greater competition. Those are non-Keynesian, supply things.

I'm quite sad, actually, that Keynesians won the marketing. The US bills are called 'stimulus bills'. Well, that's not the point. The point is hopefully to prevent people from going bankrupt, but not this idea that we just need to give people money and then the economy will take care of itself, because that's certainly not the case. We need to do a lot of getting out of the way of the supply.

*Unless you believe in Modern Monetary Theory. What is your view of it?*

Recently, I wrote a review (Cochrane 2020a) of Stephanie Kelton's book on Modern Monetary Theory (Kelton 2020). Modern Monetary Theory is the idea that we can borrow as much money as we want, throw it down ratholes if we feel like it, and never have to worry about paying it back. It is only the extreme end of much more respectable ideas taking over throughout economics. And as long as interest rates stay very low, there's some point to it.

Our politicians are certainly also not worrying about paying it back. Economists like Larry Summers and Olivier Blanchard, who are great thoughtful economists, paint a picture that one can borrow money and spend it wisely on needed infrastructure. Our politicians, however, when they get the idea that "you don't have to pay the money back", don't add that test. They are happy to just throw the money in whatever ratholes their constituents want.

So, the feeling that we don't have to pay it back is, I think, widespread both in academia and in public policy. I still think that money will have to be paid back sooner or later. And our government should be paying a little more attention to just how much debt they're racking up.

## PAYING BACK THE DEBT

*I interviewed Olivier and he did acknowledge the possibility that we print too much money and that inflation comes back. He has talked about three conditions: first, a very large increase in the debt-to-GDP ratio (which we can take to be fulfilled); second, a very large increase in the neutral rate of interest; third, and perhaps most importantly, fiscal dominance of monetary policy (Blanchard 2020). What is your view on these conditions?*

First, debt-to-GDP ratios are not a good guide. Inflation broke out in the 1970s despite quite low debt-to-GDP ratios. What was lost was the faith that the debt that was left would be paid back. At the end of WWII we had quite high debt-to-GDP ratios, but we had a good plan for paying it off. As a result, there was not much inflation after the war. It's about the debt versus the capacity to pay it off, just like any borrower, so there isn't a magic debt-to-GDP number past which inflation comes. The question is: is there faith among investors that the US has a plan for paying off the debt?

A good plan would be the post-WWII plan: strong supply-side growth for the tax base to grow plus fiscal prudence. We ran primary surpluses from 1947 to 1972. Fiscal probity and strong growth is a plan that convinces investors you're going to pay it back and you won't get inflation. Yet we've got neither of those right now.

It is true, the costs of borrowing are not particularly high. But the fear is that the rates that markets charge governments go up. There's a doom loop here that our Greek friends know something about: you can afford your debts at a low interest rate, but only at low rates. And if markets increase their risk premium to sovereign debts, then you can get stuck in a crisis quickly.

The danger we face is not easily foreseeable. There's no edge of the cliff, no debt-to-GDP threshold. It is more similar to the probability of an earthquake. It's likely to break out when the next piece of really bad news breaks out. And then investors say, "we just don't want any of this".

*How is credibility lost? How does such a change in expectations and in confidence happen?*

The US government is doing what our financial institutions do: we are rolling over short-term debt. If our government borrowed long-term – or even the way Queen Victoria used to do it, through perpetual bonds – then they lock in the financing. Otherwise, one can have a fiscal problem right away if interest rates go up. And an investor in short-term debt is not thinking about whether the US government can pay the promises that it's

made for 20 years from now. The bondholders are thinking about whether there will be somebody next year to finance the debt. That is the faith that gets lost. You can see the instability of it.

Similarly, if government debt holders rush to real assets, inflation starts coming, and the interest rates needed to keep people from doing so would be fiscally unsustainable. I think Greece is a good example. There was an accounting scandal. You need an event, a spark to get the crisis going.

The scenario is that we get to 200% debt-to-GDP ratios, don't really reform our economies, and grow slowly. Then, when the next crisis hits, our governments will be unable to roll it all over, and simultaneously borrow more trillions for bailouts and stimulus. Eventually, the bondholders start wanting assets like gold, stocks, real estate, Swiss francs. Then the problems start.

*You've written in the past (Cochrane 2020b) that the problem most likely won't come in the form of a default, but in the form of inflation. A government like the US will never really refuse to pay.*

Large governments (Europe, the US) in a debt crisis have the choice: print money to pay off debts or officially default on them. They tend to do the first one. Greece didn't have that option because it was a member of the euro area, but the US does not have a Germany to pay the bills. So, if that happens to Europe as a whole or to the US, it can end up as sharp inflation. Lately, though, I've started to think an explicit default or restructuring is possible. In a crisis, will the US Congress really prioritise paying interest to 'the rich', Wall Street or the central bank of China rather than send stimulus cheques to voters?

*Let's dig a little bit deeper into the fiscal theory of the price level – after all, you have just written a book about it (Cochrane 2021). What is the basic mechanism you propose to account for inflation? How is it better than alternative theories?*

We are at a crux in monetary theory; the standard theories really are wrong. For example, they failed miserably at understanding the zero-bound episode. Standard Keynesians warned of a deflation spiral, while monetarists warned about runaway inflation. Our modern financial system is, by and large, interest-paying electronic money. That is the same as debt, so there is no distinction between money and bonds. It is as if we were in a barter economy where we can wire bonds around, so the standard theories have fallen apart theoretically.

The fiscal theory is extremely simple. It starts with a longstanding puzzle in economics: Why do we work so hard for these pieces of paper, money?

The fiscal theory answers that we do so because the government requires you to pay taxes with them. In the end, money is valued because you need to pay for taxes with it. That's an insight that goes back to Adam Smith: "A prince, who should enact that a certain proportion of his taxes be paid in a paper money of a certain kind, might thereby give a certain value to this paper money" (Wealth of Nations, Volume I).

*I was impressed you found the required Adam Smith quote.*

Ross Starr from UC San Diego found it about 30 years ago, and I appreciate him finding that. Now, the standard monetary theories ignore this fact. For them, money is either an intrinsically worthless thing that we've all just agreed to use, or its value is mysteriously brought about by the mechanics of the IS-LM diagram. So the theory is simple, the work is in bringing that to modern economic models and making it usable for our friends who do simulations at central banks.

How could something so simple and obvious not be true? What stops inflation is a government's willingness to soak up extra money with taxes minus spending. And even the modern monetary theorists agree.

*When we see a tsunami of liquidity going to every financial market from central banks, in this theory, is the expectation of consumers that somehow at the end of the of day debts will be repaid? Is that the basic mechanism?*

That is the basic mechanism. And if people start worrying that the debt will not be repaid, then they will try to get rid of that debt and try to buy other stuff, driving up the prices of the other stuff. It feels like good old classic aggregate demand. But fiscal theory says that all government debts are the same. Central banks take away your green debt and give you yellow debt instead; they take away your overnight interest-bearing reserves and give you one month Treasury debt instead. So fiscal theorists would argue that to first order, that change in the composition of government debt doesn't matter, and that it's the overall quantity of debt relative to the government's ability to repay that matters for inflation.

Our central banks were unable to get inflation going when they wanted to. We got lucky there. But that means the central banks will be hard pressed to stop inflation when it comes, if the mechanism is that people want less of all government debt. And when people want less government debt, what can the government do? Well, if it has the ability to raise taxes or cut spending to soak up the extra debt that people don't want, then you don't get inflation. But if the government has lost the ability or the will to do that, then you inexorably get inflation. That's fiscal theory. Real simple.

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# Jesús Fernández-Villaverde: Economists and the pandemic

Jesús Fernández-Villaverde received his PhD from the University of Minnesota in 2001 and since then he has spent the bulk of his career as a Professor at the University of Pennsylvania. At Penn, he is the Director of the Economics Department's graduate programme. His research agenda is in macroeconomics and econometrics, with a focus on the computation and estimation of dynamic stochastic general equilibrium (DSGE) models, the standard tool of modern quantitative macroeconomics.



Despite being one of the world's leading quantitative macroeconomists, Jesús has extremely broad interests, having also worked on monetary economics, economic history, and political economy. Just in the last few years he has written on topics as diverse as safe assets (Barro et al. 2017) and the impact that land productivity had on the political unification or fragmentation of Europe and China throughout history (Fernández-Villaverde et al. 2020).

Jesús is also active in Spanish policy debates. Being a regular contributor at *El Confidencial*, Jesús was also one of the economists with whom, more than a decade ago, I founded *Nada es Gratis*, a policy blog quite similar to VoxEU and one of the few places in Spain dedicated to meaningful policy debates.

I interviewed Jesús on 19 July 2020; you can watch our conversation [here](#) and listen to it [here](#).

## MODELS, METHODS AND MEASUREMENT: WHAT HAVE WE LEARNED?

*You've always been very much a statistician and, like many other economists, as a result of the pandemic you have had to teach yourself all the methods of epidemiologists. What have you learned about how their methods are different from those of economists?*

The main difference between what they do and what we do is equilibrium responses.

Take the benchmark model in epidemiology, the susceptible-infected-recovered (SIR) model. This model explains very well the dynamics of how a virus will spread in a population of animals that are not responding endogenously to the spread of the disease. It also works quite well if, instead of studying Covid, you are just thinking about the common cold. The common cold does not pose a serious health risk, so no one is really going to do much to avoid it. But of course, as soon as you need to consider that the virus



being modelled has real consequences, like Covid-19, you have to account for the fact that people are going to adapt to it. These models then break down because they do not take into account the equilibrium responses.

Some of the more advanced people in epidemiology already knew about this, and if you read the literature, they have thought about ways to account for it. But of course, this is the type of behaviour that economists have been thinking about for decades, so in that sense, we had a little bit of a jump start.

With respect to economists, I think the reason why many economists missed what was going on in late February and early March was that they were not very used to this idea that when you have this type of exponential behaviour, things can dramatically change in a couple of weeks. That would be my main lesson.

*What many people have done, including you, is to try and draw on these models but enriching them with these behaviour responses and making them less mechanical. How well has this worked?*

It is amazingly important, and we have learned a lot. If you look at the forecasts that people from Imperial College gave in late February and early March, some of the scenarios were doomsday scenarios. Of course, there have been some policy ‘non-pharmaceutical interventions’ that have had an impact, but we have discovered that even in those places where those interventions didn’t happen (or happened only very lightly), the spread of the illness has been very different. That is a consequence of the way people react.

Economists have also contributed to two other aspects that unfortunately people in public policy and in health policy still don’t fully appreciate.

One of them is what I’m going to call the ‘identification problem’. Our models in economics have different parameter values that control how the model behaves. In the medical and biological sciences, those parameter values tend to have a tight natural interpretation. When we are calibrating a basic model of the universe, there are things like the gravitational constant and the speed of light, and the speed of light is what the speed of light is, and there is no point in arguing that it can be anything different.

However, when we are thinking about social models, the parameters do not have this independent existence in the same way. This implies that different combinations of parameter values can fit the data in similar ways, yet they could have very different implications for policy. That’s what I meant by ‘identification problem’. I don’t think that those outside of social sciences, in particular outside of economics, have thought a lot about this; of course, they just haven’t done so because it’s not very relevant for them.

The second issue where economists have some insights is the idea that parameters cannot be structural. A lot of papers in epidemiology have studied the case-fatality ratio of the pandemic. However, one of the things I try to point out in my papers is that this parameter doesn’t make any sense because, first of all, it is dependent on demographics

(Fernández-Villaverde and Jones 2020). The only type of parameter that makes sense is the fatality ratio conditional on being 70 or 75 years old. But further, these parameters also depend crucially on things like the quality of the healthcare system and on comorbidity. The parameter depends on so many things that trying to estimate the ‘fatality ratio’ just doesn’t make a lot of sense to me. In economics, because we tend to be more aware that these things are ‘reduced-form parameters’, we were quite quick in realising that chasing these numbers may not make a lot of sense.

*How well have we measured the impact of the pandemic on economic activity?*

The current national income account system is not well-designed to understand what has been happening during the pandemic. A very simple example is the following. How does the teaching done by all the teachers in Spain or in other European countries show up in GDP? It shows up exactly the same as it showed up last year, because the way we account for the education sector in GDP is just by the money that we pay the teachers and the depreciation of physical capital in buildings. The first one is the same. Teachers in Spain got paid the same in April of 2020 as in April of 2019. And the depreciation of capital is just an accounting rule, which is absolutely the same. So funnily enough, even if teachers stay at home for two months and they don’t do a single Zoom class or any distance teaching, GDP shows up in exactly the same way.

In that sense, we need to be careful when we read data to understand that the statisticians never designed our statistics for the current situation. It is not a criticism of statisticians, they did their job to think about a very particular economy in the 1930s.

We need to be extremely careful about what unemployment means, what inflation means. For instance, data on inflation seems to be very subdued. And if you think about inflation as some measure of slack in the economy, yes, there’s a lot of slack in the economy and inflation should be subdued. But what is the price of having a nice meal in Madrid without worrying about Covid? Well, that has gone to infinity. In some dimension, inflation is extremely high.

*How far would you extend these statistical difficulties? Is the true number for the GDP drop much larger than expected?*

I think so, because it’s hard for me to see areas where we have done much more than before. The only one I could think is home production. Every two days, I cook a big tank of gazpacho at home, which I will never do in normal circumstances. So there has been more home production. Professional firms are super happy apparently because they sent the consultants home and now they are producing 24 hours a day. But I think the bias is probably on the downside.

It is not only the public sector. It is also, for instance, the non-profit sector. My own university, the University of Pennsylvania is private, but the way we compute GDP is exactly the same as the public sector, funnily enough. What will happen with GDP if the

University of Chicago lowers its tuition next year? Because the GDP of the University of Chicago is the payment to professors at Chicago, what happens is that the difference between payments to professors (and administrative staff) and what the students pay in tuition is the consumption imputed to the University of Chicago. So, if the University of Chicago lowers its tuition, this shows up as an increase in the consumption of the University of Chicago. Because it's a non-profit!

*And there is another set of biases. People often talk about the value of going for a coffee in the office. You and I waste an enormous amount of time in airports, and now we're doing everything by Zoom. It's very hard to figure out how much is being lost in terms of output.*

That's true. Let me give you the positive and the negative. In my view, the positive is that this is opening up, for instance, seminars to people that are 'out of the circuit'. The top people in the profession are hard to attract to your seminar series if you are a relatively small university – often because they don't have the money. Over the last few weeks, however, I have given my paper on Covid in a lot of South American universities. The average South American university may not have the budget to bring someone from the US and put them in a hotel. And I will not have the time. So suddenly it's easier for them to do a conference. On the other hand, Zoom is not a great substitute for person-to-person. So, if the host is the London School of Economics, the department of economics there is getting less now from its seminars than it did on a personal basis. There are winners and there are losers.

And the second thing that is important is the difference between maintaining existing relations and creating new relations. We can spend a year on Zoom because we already know each other. We have some dynamics, we can interact. But what is going to happen with the new assistant professors and the new graduate students trying to get into the circuit through zoom? It is going to be much harder. Zoom gives a premium to eloquence that maybe in a person-to-person relationship is not so strong.

You worked at Chicago with Sherwin Rosen. Rosen wrote the famous paper on the economics of superstars (Rosen, 1981) and his example was, of course, music. Why are you going to go and listen to a good opera singer when, thanks to a DVD, you can listen to an amazingly extraordinary opera singer? This may happen with economics. Why are you going to go to a seminar by a good professor of economics when you can listen to the seminar by Ivan Werning?

## **LONG-TERM FISCAL SUSTAINABILITY**

*Given the strong policy response, the big growth in expenditure and the drop in revenues, most countries are facing an enormous increase in debt after the pandemic. How worried are you about these debt levels? You mentioned before that inflation was difficult to measure now, but are you worried that the debt overhang might affect growth or inflation?*

Two ideas. The first one is that for the time being we face a horizon of very low real interest rates, and in that sense, a 150% debt-over-GDP will be the same as a 75% debt-over-GDP 20 years ago, when we had higher interest rates. Having said that, I think that the situation is also going to be very heterogeneous across countries. There are going to be some political systems where investors are going to be relatively confident that even if you go to 100–150% of GDP, you are going to be able to service that debt. At the same time, there are going to be countries where the political dynamics are going to make servicing that debt a bit harder. More than the weight of the debt per se, it is the political economy within each of these countries that should be a concern.

If I were an investor, would I be terribly worried about the US or the UK servicing 100% debt-over-GDP or 150%? I don't think I would be very worried. And I think that the experience of Japan for the last 20 to 25 years is that that's something you can service. Now, countries where a lot of the population is ageing and where there are deep ideological divisions about where the country needs to go in the long run will be in a tougher spot.

When you are in a position where you must decide whether to default or to restructure your debt, you are in a situation where you're forced to do stuff, and that can be a highly non-linear process. Things can change very quickly. We don't know where the threshold is – you could be at 120% and be perfectly fine, but at 125% you could start losing it. Again, it will tie down closely with the political economy of each country, but certainly as we accumulate more debt, the probability of an event where things go bad increases.

Maybe nothing happens for ten years. But this is like when you are continuously buying a lottery ticket. Sooner or later that lottery ticket may pay. Ageing of the population really concerns me. A silver lining of the current epidemic is that if we move to telecommuting, it may be relatively easier to convince people to extend their working life spans. If they don't really need to go out to work, maybe you can ask people to work a few more years.

The second idea, if I may be more speculative, is on how we organise societies in the long run. One thing that I find disappointing for societies is that either you work eight hours a day or you work zero. Some societies, especially in the north of Europe, have made progress in terms of solutions, but it's something we should push very hard. For instance, let's think about fertility. One of the reasons why fertility is so low these days is because having a kid and trying to keep a full-time job is very difficult. That usually has a gender component because women usually assume most of the cost of it, and that generates many tensions and unhappiness in society that I fully understand. So, imagine we are in a society where we have more flexible forms of work. Thanks to Zoom, I can go from being expected to work eight hours a day, to being expected to work six hours and half hours, to say a random number. Then, it's much easier to reconcile work with family.

In the old world where you had a factory, that's difficult to accomplish. Governments here should have a leading role. A lot of what we do is about coordination. I want to be in the office at 9:00 because someone else is going to be at there at that time. You just need to have a focal point, and governments can help to coordinate us in good focal points. I can

imagine many people who are aged 65 or 66 and are reluctant to work eight hours a day, but at the same time they are not very happy working zero hours a day. If we could get to a society where you can flexibly work four or five hours a day, maybe we could extend the working life of many people, contributing to GDP and helping us a lot to transition. It will also have positive health benefits. We have actually quite a bit of evidence that when people suddenly retire, they start an exponential decay, and especially if they are men they tend to drink and gain weight. So, I think that these solutions will help society a lot. Thanks to telecommuting and Zoom, we may be able to do that much better than in the past.

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# Agnès Bénassy-Quéré: How to design a recovery plan

Agnès Bénassy-Quéré received her PhD from the University of Paris-Dauphine in 1992. She has taught at the University of Cergy-Pontoise, at Lille II, at Paris-West Nanterre and at the Ecole Polytechnique. She is now a Professor (on leave) at Panthéon-Sorbonne and at the Paris School of Economics.



Her research has focused on monetary systems, exchange rates and European integration. She has been a prominent voice in the debate on European policy after the last crisis, participating, for instance, in the '7+7' Franco-German proposals on the euro area architecture after the crisis (Bénassy-Quéré et al. 2018).

She has been the head of the French Council of Economic Advisors and the general board of the Banque de France. She is currently the chief economist at the French Treasury and has contributed substantially to *France Relance*, France's economic reconstruction plan.

I interviewed Agnès on 22 November 2020; you can watch our conversation [here](#) and listen to it [here](#).

## RECOVERY PLAN

*Have you strictly followed the priorities that Europe has set for its recovery plan in terms of digitalisation and climate? Or have you included a broader set of industrial policies?*

The strategy of the recovery plan is to have different buckets of money and to reallocate the buckets in case one doesn't work, while staying within the template of a green and digital plan, consistent with the EU strategy. This is why the money and budgets are not delegated to ministries; they are managed from the centre, which collaborates with the local administrations but not through specialised ministries like housing, energy transition and so on. This allows for the reallocation of the budget in case they don't deliver.

There are many chapters, but we have three basic objectives. The first one is about short-term recovery; the faster we come back to normal, the less cost to the economy. The second is to lift the GDP level and growth – the GDP level because it is key for employment and for tax revenues, and growth because we want to tackle the secular slowdown of productivity growth that we have seen. The third objective is to pursue a different kind of growth, so in this way about a third of the plan consists in 'greening' the economy.

To construct this plan, we focused on a pre-existing diagnosis of the French economy before the pandemic. It is always good to be in good health before one gets sick, so fortunately this diagnosis was fundamentally positive. In France before the crisis, unemployment was declining at a steady rate. However, there was a persistent trade deficit and, as in all advanced economies, there was a productivity slowdown. More specific to France was the low digitalisation of SMEs and a skill mismatch, with many firms being unable to find the labour they needed. Further, we had insufficient performance in innovation.

In terms of the labour market, two systemic reforms – one to apprenticeships and one to adult training – had been enacted before the crisis. Given that in my view we'll need a reallocation of labour, these will be helpful. Purchasing power had been increased through different measures. Personal income and housing taxes were cut, and after the 'yellow vests', social transfers were increased. Finally, the green agenda needed a new momentum, as the new increase in the carbon tax encountered strong opposition.

Then came the crisis, and our diagnosis: you need to increase aggregate demand in the short term. Aggregate demand is, first of all, household consumption. Over 2020, the gross disposable income of households is going to slightly increase compared to 2019. There are some inequalities which need to be sorted out, but on aggregate, there is no problem of disposable income. So our view is that consumption is mostly constrained by uncertainties. Unfortunately, we cannot eliminate uncertainties on the health front, but we can tackle uncertainty in the labour market. We know that the savings rate is closely related to the unemployment rate, hence the insistence of the recovery plan on the labour market.

When we saw the Germans cut VAT for a limited amount of time, we thought about it, but decided against it for three reasons. First the experience of France with VAT cuts is not good, having low pass-through rates. Second, it's very costly. And third, it's a bit awkward to announce it as a temporary measure, to end for example in December, when you have a crisis without a clear end point. What would happen in January? You would have a hole in consumption without the crisis being over.

So we didn't go in that direction. France is also different from Germany in that Germany had a lack of aggregate demand already before the crisis, whereas in France you never had it. It's also interesting to compare the two countries in terms of public investment. In France, we know how to spend money, whereas in Germany they often hesitate and don't know how to do it. Today this is a strength.

The second problem is private investment. Private investment, of course, is constrained by uncertainty. But we expect that the government support in 2021 will help recover on aggregate the pre-crisis markups and trigger investment, especially if there are some equity or equity-like injections.<sup>1</sup>

1 This interview took place on 22 November 2020; on 4 March 2021, France announced its plan to recapitalise small and medium-sized enterprises.

Our view of private investment is that the pre-crisis drags are still there, in the areas of competitiveness, skills, innovation, and production taxes. As a result, we cut production taxes and put forward an ambitious plan in terms of skills. We also have investment by households, where there are new subsidies for housing renovations. Finally, we have public investment. Seventy percent of public investment is carried out at the local level, but unfortunately 2020 was an election year at the local level. And we know that just after an election you have drops in investment. As a result, we have directed a lot of money to these local administrations, so that they have money for projects such as school renovations.

The package is really investment-driven, and directed towards physical capital, human capital and the green transformation. The idea was also to use this opportunity to kickstart dynamics for the green economy. One hundred billion is much too small to make a huge dent in reducing carbon emissions, but we hope that it will be enough to trigger some skills building and to organise the supply of these services. Hopefully, later on at the European level we will have a very ambitious policy, especially in terms of carbon pricing, to complement the push of the European recovery plan towards green investments.

*I would like to focus on skill mismatches, and on digital skills in particular. We know that in Spain, France, and Italy, this has always been a problem. How will your recovery plan tackle this?*

For the youth, before the crisis there was a reform in apprenticeships, and the idea was to create a market for apprenticeships where the grant is attached to the student, not to the school. The student can go with a grant to a school, and the school's funding depends on how many students they can attract. It's a way to reallocate the supply side more smoothly because it's very rigid otherwise. We were worried about the take up in September, and it seems that the numbers are about the same as last year. Last year was a good year. This is good news because it was not easy. There has been heavy subsidisation, which was boosted in 2020, so that it is almost free for a firm to hire an apprentice for the first year.

The second reform was in the training of adults, and it is much more difficult. The reform was to disintermediate the training system. If you want to change jobs – to no longer be a professor of economics and be, instead, a nurse – you can use an app on your smartphone. You say you think you want to be a nurse and they will propose some training. You can go directly, have information and also get bonuses, so you accumulate an account in euros that you can spend freely on training. If you want to learn German, you can buy training in German. And for some programmes you get a bonus from the region or from a professional organisation. The reform was enacted before the crisis, but it was not really deployed. They are presently finalising these reforms so that they could be instrumental in the reallocation of labour.



The challenge is to get these schemes known, because most people have no idea about them. And it's difficult to disseminate information. So we really need to work hard to have the system simplified and disseminated.

*Understood. On equity injections, there are at least two difficulties. The first is that most companies are small and opening up their capital does not make sense, not to mention public shareholding. The second difficulty is the governance of equity injections – how to ensure that the policy will maximise social welfare rather than particular stakes.*

The way we're tackling this problem is the following. For very small firms, we don't think that equity injections are an issue because you don't see an equity injection into a small restaurant – it doesn't make sense. So it will still be grants. Very small firms already get grants, through both general and sector-specific programmes. For midcaps, there's already a system for the restructuring: for those firms with more than 400 employees, they can ask to a specific public body, which represents all the public creditors of the firm. And this public creditor will liaise with the private creditors and organise the restructuring. For smaller, but still relatively large firms, there's an equivalent at the local level. So there are already some organised restructuring schemes for firms of a certain size.

And then comes the quasi-equity injection programme.<sup>2</sup> The government is clearly not going to become a shareholder in two million firms. Like Spain, France is a country where most of the SME funding goes through the banks, so we are going to rely on this network of banks. They have already distributed the state-guaranteed loans (these have a grace period and the reimbursements can be spread over a longer period, but eventually they will be repaid), so the idea is to distribute quasi-equity, which are junior loans, that will be repaid only after the senior loans are repaid. The cost for the firm is a bit higher, but it's much more flexible. The banks will distribute this quasi-equity or junior loans and will keep 10% of the risk on their balance sheet so as to give them an incentive to make good selections. They will also use a rating of SMEs by the Banque de France. Then the rest will be transferred to one or several investment funds, with private investors, and with a partial guarantee from the government.

These products will be limited to relatively well-rated companies prior to the crisis. We want to support viable firms because you still need to have some renewal of the corporate sector. You need to have a product that is not too costly for the firms, otherwise they will not take it. Or even worse, there could be some adverse selection. The bank needs to have an incentive to distribute this product. The private investors need to come, so there needs to be some return. And the government needs to not take too much risk and to comply with European rules in terms of state aid.

<sup>2</sup> On 4 March 2021, the French government announced the creation of a quasi-equity debt scheme to support firms that was quite similar to what Agnès described in the interview, where banks will originate quasi-equity participatory loans and sell them, through investment funds partially guaranteed by the government, to private investors. See the European Commission's State aid approval of the scheme for details (European Commission 2021).

## THE ECONOMIC AND MONETARY UNION AFTER THE PANDEMIC

*I wanted to move to the European level. Do you think that the recovery plan and the rest of the approved measures are going to be sufficient? Are we going to have to put in place a second or third European package?*

The response to this question is difficult at this stage, because it's a very general question. Today the borrowing costs of the different European countries are very close to each other, and close to what the Commission will have to pay to finance Next Generation EU. It's much more a question of whether you want more national debt or more European debt. My previous work suggests that it is a weakness in Europe to have so much national debt and too little European debt; this makes the EU area different from the US. But even if we changed this, if the European debt is repaid through national contributions, not much would change in practice. So the key question are own resources. If we manage to find a new own resource to service this common debt, then it's a game changer, because the service of this debt will not be at the expense of the service of the national debt.

*Everyone agrees that the European fiscal rules are too complex, with many pushing for their reform and simplification. What is your view on this?*

Already before the crisis, there was a lot of debate going on, with some convergence between academic papers and across institutions (the European Fiscal Board, the IMF, the OECD). They recommended a simplification of the SGP through something like a spending rule. Recently Olivier Blanchard and co-authors have come up with more disruptive proposals to replace the rules altogether with a stochastic analysis of the vulnerability of each country (Blanchard et al. 2020). I recently finished a paper with Elga Bartsch, Giancarlo Corsetti, and Xavier Debrun on the policy mix (Bartsch et al. 2020). The report argues that today we need to fully exploit the complementarity between fiscal and monetary policy, and that, in order to do so, you need each instrument to remain credible and to be anchored to something. The idea of merging the two is not a solution – the two instruments should remain independent, but coordinated and credible.

In that spirit, I would say that fiscal rules are useful as a way of anchoring the expectation to have fiscal policy, and to ensure it is predictable for monetary policy. As for monetary policy, and keeping in mind there is a review going on at the ECB, we have to come up with maybe forward guidance coupled with something that will make monetary policy predictable for governments. If each kind of policy can credibly anticipate what the other one is going to do three years ahead, then it will be easier to have a stimulation of both monetary and fiscal policy, but where we also see, credibly, that this is temporary.

I would not throw away the fiscal rules, even though they probably need to be revised and some work needs to be done with a new context. I would also put forward the often-forgotten Macroeconomic Imbalance Procedure (MIP), because what we want is aggregate demand, and whether it comes from the private or the public sector in a sense

doesn't matter for the macroeconomy. So I would streamline the MIP and maybe, as I've written for the European Parliament (Bénassy-Quéré 2015, Bénassy-Quéré and Wolff 2020), put it at the same level as the Stability and Growth Pact, which is a big difficulty.

*Indeed, the difficulty is more political than economic, with very divergent views between different countries on how this process should be. Could you expand a bit on the expenditure rules around which you mentioned there is a growing consensus?*

Well, in the report written by seven German and seven French economists (Bénassy-Quéré et al. 2018) we argued in favour of the expenditure rule. Now, there needs to be specific thinking about the debt level that we want. I have not seen convincing research so far on what the optimal level of debt is, given the fact that at the global level, the neutral real interest rate is negative. If all countries could coordinate their debts to stay stable at a higher level, maybe this could be good for monetary policy to recover some leeway to react to the cycle. But then the problem with a high level of debt is that of vulnerability. If you make a mistake with a low level of debt, it's benign, whereas if you make a mistake with a high level of debt, it's dramatic. With a high level you need to look at the variants and at the central path at the same time, whereas if you have a low level of debt the expectation is enough.

So I like the idea of vulnerability analyses. I'm most sceptical about stochastic analysis, because if you are in a world where we don't know the probability laws of the economy, we are in an economy with bifurcations, where some extreme events can happen. Then maybe it's better to do some standard stress testing with scenarios, allowing for some contingency planning.

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# TACKLING INEQUALITY



# Oriana Bandiera: Overcoming poverty barriers

Oriana Bandiera received her PhD from Boston College and since then she has been at LSE, becoming a Professor in 2009. At LSE, she is the Director of the Suntory and Toyota Centre for Economics and Related Disciplines (STICERD). She is also Director of the State Capabilities research programme at the International Growth Centre.



Oriana is one of the world's leading developing economists. She has done extensive work in the field, conducting ground-breaking randomised control trials (some of which we touch on in the interview). More broadly, her research focuses on how monetary incentives and social relationships interact to shape individual choices within organisations, how these in turn shape labour markets, the allocation of talent and, ultimately, living standards.

Having worked on issues as diverse as the impact of financial liberalisation on savings rates (Bandiera et al. 2000), the origins of organised crime (Bandiera 2003), technology adoption in Mozambique (Bandiera and Rasul 2006), and the impact of managerial compensation systems (Bandiera et al. 2007), Oriana is today one of the most creative researchers in Europe.

I interviewed Oriana on 4 October 2020; you can watch our conversation [here](#) and listen to it [here](#).

## GENDER AND PANDEMICS IN DEVELOPING COUNTRIES

*In 2019 you published a paper on the effects of the lockdown due to the Ebola pandemic in Sierra Leone (Bandiera et al. 2019).<sup>1</sup> What does it suggest about the impact of the virus on developing countries?*

The Ebola study was an evaluation of a program run by the NGO BRAC, first in Uganda and then exported to Sierra Leone. The programme provided clubs for adolescent girls to learn livelihood skills and basic job skills. Their idea is for them to protect themselves from unwanted attentions, let's put it this way.

<sup>1</sup> As a result of the Ebola outbreak, the Sierra Leone government decreed, among other measures, village lockdowns, travel bans and the closure of primary and secondary schools.



We ran the baseline of that programme and then Ebola struck. So, we were able to compare the effect of Ebola on villages where the girls had been offered the programme and in villages where they hadn't. There are big differences between the two, in particular pregnancy rates skyrocket in villages where there was no programme because, with schools closed, girls did not have much to do other than spend time with men. Whereas in villages where the programme was operating, the girls had a safe space for them to spend time and learn skills to resist unwanted advances.

Further, the difference in pregnancy rates had important dynamic consequences because Sierra Leone's government prohibited pregnant girls from going back to school. As a result, the girls in the control villages dropped out of school for good, whereas the girls in treatment villages, having resisted pregnancy, managed to return to school.

*Do you expect to see a differential impact across men and women as a result of the coronavirus, similar to what you observed with Ebola?*

I fear that with this pandemic the mechanism at play is quite similar because what was key during the Ebola crisis was that schools were closed and so girls had nowhere to go. They were more easily preyed on by men who were also not at work. It was basically a perfect storm. In sum, I don't think it's the type of illness, but the consequence of the lockdown.

### **WHAT IS THE POINT OF LOCKDOWNS?**

*You have also studied the economic effects of the current lockdowns in detail. Specifically, you undertook a large survey in Bangladesh. What were the results?*

That work is a part of a bigger project studying the link between jobs and poverty in Bangladesh. Our goal was to see how the lockdown affected people's livelihoods, depending on the type of job that they had before the crisis. We found important differences. For example, salaried workers survived better, and people who had a business were most affected because they had to close down.

What we were not expecting, and what we found very strong evidence of, was that people were changing jobs after the lockdown. We found that only 60% of business owners kept their business. The rest transitioned into casual day labour. We also see people transitioning back and forth from casual labour into salaried labour.

This has two consequences: it increases inequality, but it also leads to misallocations because the firms of the poorer workers that shut down were more profitable than the businesses of the richer workers that managed to survive. The shock has more permanent consequences on labour markets than we previously realised.

*How is the impact of the pandemic, and of the lockdowns associated with it, different in the developing world? How are the policy interventions required different?*

It depends on the aim of the lockdown. If the aim of the lockdown is to slow down the transition of people into hospitals and to make sure that there is space for everybody, then there is a reason for it. But in many of these countries there are no hospitals and no ventilators, so slowing down the access to something that hardly exists in the first place does not seem like a goal worth pursuing. On the other hand, a certain consequence of the lockdown is that some people will not have anything to eat. Further, from related work in Bangladesh (Parekh and Bandiera 2020) we found that social assistance only manages to reach those who have salaried jobs, who as I mentioned tend to be the wealthiest.

In sum, we have all the same costs that we have in richer countries, but none of the benefits in terms of the health care staggering.

### **FIGHTING POVERTY WITH DIRECT RESOURCE TRANSFERS**

*You have done a lot of work on tackling poverty around the world (Parekh and Bandiera 2020). Do you find that what you have learned can be useful for tackling poverty in places like the UK, Italy or Spain?*

Absolutely, the nature of poverty is the same everywhere. Poverty is essentially a limit on the set of opportunities that you have. Unfortunately, we are seeing that poverty is not correlated with the talent that you have.

A few years ago, we evaluated a 15-year long programme, also carried out by BRAC, in Bangladesh that gave cows to the poorest women in the poorest villages of Bangladesh (Bandiera et al. 2017). Cow breeding is what the richer women in these villages do.

If we believed that the women were poor because they didn't know how to do cow breeding, we would have expected them to waste the cow and return to poverty. But most of the women who received a cow did very well with it. Their children were better nourished, taller, and more likely to go to school. Further, 15 years later, we can see that their children have better jobs. There is an intergenerational transmission of poverty which gets interrupted by breaking the poverty of the mother.

*I find this work fascinating. Can we try to interpret it more broadly? If poverty results from people having barriers to certain resources, we should just give them the resources directly. It is sometimes sufficient to eliminate those traps. This would run counter to what many economists would have expected.*

I would say so. Most of the programmes targeted for the poor are meant to assist consumption, so they involve small transfers. But a small transfer does very little when people have next to nothing. For example, in microfinance the standard microfinance loan will give you the equivalent a hundred dollars. In contrast, the value of the programme

we evaluated was a thousand dollars. It's a difference of a factor of 10. The programme was the equivalent of one year's worth of income for these people, while a microfinance loan is about one month's. It's no surprise that microfinance, which was intended to drive production, often ends up just being a consumption subsidy. Unfortunately, we haven't seen as much evidence of the effects of these larger programmes as we should have because most programmes are not quite as generous as needed.

*This is quite promising. Your work fits within a broader literature evaluating randomised control trials. Many of the papers in this literature find small and not persistent results, whereas you here have found large and persistent results, and across generations too! Does it basically show that size matters? Or is there something else?*

Fundamentally, yes, because if the nature of the technology is such that you need a big investment to overcome the barriers, making a tiny investment does not make much of a difference. If you need a cow in order to escape poverty, giving you one tenth of the value of the cow does not help because you cannot buy a leg of a cow, and then save a bit, and then the next year buy another leg. You must be able to buy the whole animal.

*What would the equivalent investments be in advanced economies?*

It depends on the age of the people that you want to target. If you're thinking about youth, definitely focus on providing training (through vocational programmes) or education (through programmes like university fellowships), depending on talent. If you're thinking about older people, then maybe focus on skill retraining or funds to start a small business.

*In the case of Bangladesh, the programme didn't give funds to buy a cow, but gave them a cow. Is that important?*

I don't think that in itself makes much of a difference. We did a similar experiment in Pakistan where we offered a choice between a menu of assets that included cash. Everybody chose the cash option. What did they do with it? They bought a cow.

*Many of us are worried about the differential impacts of the pandemic on educational outcomes, not just today but also in the long term. Raj Chetty, for example, has found that the pandemic disruption may be exacerbating achievement gaps between rich and poor students. How worried are you about this? What should we be doing?*

I'm afraid that I share your pessimism, especially because investment in education is cumulative. Once you fall behind, you're going to stay behind. It's a bit like the girls in Sierra Leone – once they got pregnant, they couldn't go back to school. So, it's going to be a grand waste of talent. We fail to recognise how important this is for the welfare of our nations. We always think of it in terms of equity, and we often disagree about the extent to which the state should provide for people who have less. But one thing that we

can all agree on is that we should do our best to make the best use of the scarce resources we have. For all we know, the scientist that could find the vaccine for Covid is now out of school.

*Do you think tutoring programmes or extra schooling programmes could, according to what we know about attainment, be helpful to level the playing field? Or is education hard to recover once it is lost?*

I think it's very simple, we just lack the will to put up the money for it. In the UK, most public schools gave materials for the parents to teach their children. Parents with high educational levels are more likely to be better teachers, so that in itself created a massive gap. Additionally, parents with a high level of education are more likely to be able to work from home, and more likely to be able to afford spending time with their children. If you offered a tutor to everybody for free, we would all be in the same situation. So, I don't think it's so difficult.

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# Stefanie Stantcheva: Taxes and social economics

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Stefanie Stantcheva received her PhD from MIT in 2014, and since then she has been teaching at Harvard, becoming a Professor in 2016. Stefanie is the youngest economist that we interviewed, and one of the most promising - just before our interview, she received the Elaine Bennett Prize given by the American Economic Association.



Her research focuses on the long-run effects of taxes on innovation, education, and wealth. More recently, her work has studied the determinants of social preferences for economic policies. As a part of this work, she has pioneered the use of social surveys in economics, and at Harvard she founded the Social Economics Lab.

Since 2020, Stefanie is an editor of the *Quarterly Journal of Economics*. Since 2018, she has also been a member of the French Council of Economic Advisers, the non-partisan advisory body to the French prime minister.

I interviewed Stefanie on 20 December 2020; you can watch our conversation [here](#) and listen to it [here](#).

## DESIGNING GOOD TAXES

*Much of your research has focused on tax design in many areas, from labour, to human capital, to innovation. Could you tell us a bit about that work? Perhaps we could start with human capital.*

The aim of this research has been to try to understand the longer-run effects of taxes on decisions which at first take a while to make but have long-lasting consequences. For example, the decision whether to acquire education, to innovate, or to save and build capital.

Focusing on education, the decision to acquire it is difficult in many countries, particularly in the US, because of the huge cost and resulting debt that people incur when they do so. So the question is how we can design a system so that we allow people to invest in education – and perhaps not just once in a lifetime, but rather recurrently if needed – and then allow them to repay in a way that doesn't impose huge debt burdens on them; and all of this without draining public finances.

The key ingredient that I have found in my work (Stantcheva 2017) is acknowledging that people face shocks throughout their life: health shocks, trade shocks, recessions, technology-driven displacement. So you cannot know exactly what your income will be

in the future. Given this, the right system will let people take out loans for education that they can repay in an income-contingent way: the higher the income, the higher the share of your income that you repay to the government. If you do poorly, then you repay a much lower share. This strikes the right balance between allowing the government to finance these loans while also buffering the shocks that individuals may face throughout their working life. Some version of this already exists in many countries, such as the US and Australia, where loans can be forgiven if people do particularly poorly. However, this only covers the downside and misses the other aspect where, if you do better, you have to repay more into the common pool.

*How do you account for the possibility that people may choose to work less or to educate themselves less if they are going to face these higher taxes?*

Indeed, when we try to insure people against a risk they face, there is a danger that the cost of that insurance could destroy some of the incentives to work. We can also destroy some incentives to invest in education to start with, if you already foresee that part of this return will be taxed away later on. However, the right system can balance these effects, taking into account these incentive costs and weighing them against the benefits from helping you acquire education and insuring you. The resulting solution will not be perfect, it will be 'second best'. It is the perennial trade-off in economics, particularly in taxation, between equity and insurance on one side and efficiency on the other.

*How do you evaluate the existing systems?*

They're definitely a step in the right direction. But they have two aspects which could be improved. The first is what I mentioned before, that typically we just ensure the downside while people should also be paying more the better they do throughout life. The second aspect is that existing programmes typically only cover an initial college education, while, as life expectancy and working lives increase, there's a larger range of shocks that can happen to people. So it's strange to think that a one-off education could take care of all of this. In my framework, people should be allowed to go back to school or acquire job training (from vocational to very specialised) throughout their working lives to adapt to shocks and to continue building their human capital in a suitable way for the labour market.

*We are all worried that we are not seeing enough innovation. How should we organise our tax system so as to encourage innovation?*

To me, this question has two parts. One is to study the consequences of income taxes, both on corporations and on individuals, on innovation. Bearing in mind that these taxes are typically designed with completely different goals in mind, such as raising revenue or redistributing income, they can also have detrimental consequences on innovation.

But how can we measure these costs? The second step is to push this question further and to think about whether we can implement specific policies like R&D tax credits or subsidies, or corporate tax schedules with the explicit intention of promoting innovation.

On the first point, the major challenge here is data. My co-authors and I had to do a lot of work going back in time to collect all of the US patent and inventor data, as well as state-level corporate and personal income tax data (Akcigit et al. 2016). Combining these, we find that inventors and firms definitely respond negatively to higher taxes, particularly inventors that work for companies that are more driven by profit or that are better financially incentivised by their employers. These responses happen on many possible margins: how much innovation they do, whether they innovate in the first place, or which city they choose to locate in.

However, one of the important conclusions is that taxes are not the whole picture. One key countervailing factor is the impact of local amenities. Inventors and firms become less sensitive to taxes when they have good local amenities. You can measure those with an agglomeration measure, by looking at how many people work in the same field in that area, or how many patents there are there already. The conclusion need not be that we should not have progressive taxation, but instead could be that we should provide the proper infrastructure and amenities that can actually reduce the response to taxes.

*You could also think about it inversely, with the countries that are unable to provide those amenities having to be more aggressive with tax policy to attract innovation. Would it be fair to put it that way?*

Indeed, that would be the immediate conclusion, but we know that this would only be a partial solution. Every individual country has an incentive to lower taxes and attract people, but if you zoom out of this, it is not a great equilibrium for society as a whole. So it's very important to not have beggar-thy-neighbour policies. That is why, especially when we have the tools to coordinate taxes – and there are many efforts in that direction, whether within the EU or the broader level through the OECD – that's really the right way to go.

*Focusing on mobility, could you walk us through your work on the effect of taxes on migration?*

My co-authors and I recently had a literature review to try to take stock of what we know on this (Kleven et al. 2020). There are a lot of anecdotes in the media about superstars moving to a country in order to take advantage of lower taxes, but it's not clear to what extent this is actually a widespread phenomenon. There are very few data sets that allow us to track people across countries, so we have to be a bit creative.



Some have worked on football players (Kleven et al. 2013), since you can look up on the internet where they play and hence where they live. My co-authors and I have looked at inventors, because you can track where inventors live over decades because they have to report their residential address when they patent.

When we take stock of the literature, we find that people can also be mobile; it is not just capital that moves across countries in response to taxes. There are high-income workers with little location-specific human capital which may be quite responsive to taxes in their decision to locate. This is especially the case if they work for multinational companies, but on the other hand being very specialised does tie them to a place. So again, in our view, the policy conclusion is not to eliminate or reduce taxes, but rather to have more international coordination and better local amenities that will actually make it attractive for these people to stay in a given place.

### PEOPLE'S VIEWS ON ECONOMIC POLICY

*Beyond the long-term effects of taxation, you have done a lot of work on how people perceive taxes and, more broadly, economic policy debates. The usual economics view is "I don't care what people understand, I just care what they do". The Milton Friedman analogy of billiards players comes to mind. The players don't know any physics but can calculate angles and the conservation of momentum quite well. Why this interest in people's perceptions?*

I have given it the name 'social economics' because it is about how people think about economic phenomena and policies while taking into account the society and social issues around them. I started to think about this by working on taxes and different progressive policies; it quickly became clear that what we model is not always in line with how people reason about these issues. It's enough to open a newspaper or look at social media to see that there are many different concerns about what's fair or how things could be done differently. And there is also a lack of understanding of some of the policies and their consequences.

What I have done is to conduct social economic surveys and experiments, often done online with large samples and in several countries. I try to design them in an interactive, intuitive, carefully calibrated way, and I run them either on representative samples or specifically targeting some groups, for instance, minorities or younger people. Such surveys are really a key tool because they allow us to see what's essentially invisible in other data – things like perceptions, beliefs, attitudes, knowledge, views.

Milton Friedman's point that we only care about what people do may be the final step, absolutely, but we have to know how we get there. This is very difficult to do with our typical economic approach of revealed preferences, where we infer people's thinking from observed behaviour. This has many great advantages, but it can hit its limits when it comes to people's views on things like policies and fairness. It's difficult because views

on these questions depend on higher order beliefs, that is, they depend on what people think others will do if something happens. These beliefs cannot easily be inferred from observed behaviour, so social economic surveys and experiments are sometimes the more direct way. I view them as a key complement to our existing toolbox as economists.

*You uncovered three types of intangibles which are particularly determinant in this response by people to, for example, tax policies. What are these intangibles and can you tell us a little bit about how they interact and how they actually work?*

The first is people's perceptions of how things are. The second is people's concerns with fairness and equity. We typically have very simple social welfare functions that allow us to aggregate the gains and losses of different people, but in fact, people have quite complex fairness considerations and these also depend very much on the context. For example, a policy that otherwise may be considered fair may suddenly be deemed quite unfair if it follows another series of policies.

The third is people's own economic circumstances. Non-survey data can tell us a lot about things like people's incomes, government transfers, or labour supply. But in real time, it's very hard to actually get that data. Sometimes surveys are the better way to go ahead: ask people how they're affected by a given policy, how they are responding to it, what they think they can do to adjust. This can actually be a key policy tool, to explore opportunities for reform, study their impact as it happens, and be able to troubleshoot and get feedback from people on what's going on.

*You have done much of this work in the area of social mobility, finding that, while in the US people are more optimistic than they should be about their mobility prospects, in Europe people are actually too pessimistic (Alesina et al. 2018). However, one of your results that I find interesting is that when you show people information about the reality of social mobility, their views change. That's somewhat reassuring because much of the literature on polarisation shows that giving people more information doesn't help them, because it either confirms their prior beliefs or they simply ignore it.*

I may disappoint you here, but our results were different for those on different sides of the political spectrum. Those on the right were more optimistic about mobility than those on the left, but when we showed them information showing that mobility was lower than perceived, while those on the left tended to want more of these government policies, those on the right actually wanted less government intervention. Those on the right do acknowledge that equality of opportunity is more of a problem, so in that sense, information works and is absorbed, yet their perceived solution is not more government. Since they tend to perceive the government as being more part of the problem than the solution, they ask for liberalising the economy and cutting taxes and government intervention more generally.

There are also some issues which are more politically entrenched than others, where people's reasoning has become very consistent with one political affiliation or another. Taxes tend to be in that area; views on tax policies have been quite stable historically between left and right. But on other policies, for instance trade, political lines have been shifting a bit: traditionally pro-trade parties are now becoming more protectionist and vice versa. We saw with mobility, for instance, that people can clearly change their views when given information. With immigration it's not the case at all; simple facts about immigration don't really have any effect on people's perceptions. So all this is just to say that plenty of work remains to be done, I think, with these social economic surveys and experiments, including as tools for policymakers to understand better what their citizens are thinking.

*Do you think that the policy debate is getting more polarised, and that people behave more as if they're football hooligans on one team or the other? Has there been a trend here and is there a way to correct this?*

It's very hard to make that statement rigorously. It's true that many things appear very polarised today. And to your point about sometimes not adjusting to information, it's very difficult to know what information to trust these days. When we read things in other fields, it is difficult to know what is the source or how it is done, so it's completely understandable that it's very difficult to trust a given source of information or to know where to get your news from. That being said, people have done work about changes in polarisation in the US, and according to many metrics, it seems to have been increasing. But it's also the case that we don't have very long-run data. And while we can go back a few decades, we can't take a very long-run view.

But what is true is that today is that there is polarisation on many issues, even on reality, on things you can go and check on Google, like the top tax rates, the share of immigrants in a country or the share of income that goes to the top. I've done work that's actually called "The polarization of reality" (Alesina et al. 2020). People on the left and on the right simply don't perceive the same values for those key parameters and facts that are out there. And it goes in the direction that you may expect. People who are on the left tend to think that taxes are lower and less progressive, and that inequality is higher and has increased more than people on the right. And what's important to note is that there's not one group that's actually systematically more correct than the other. Sometimes both groups are exaggerating reality. Sometimes both groups underestimate it. Sometimes the groups bracket reality. So there's not a systematic relation between accuracy and political affiliation, but there's clearly a strong gap between the two sides.

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# Esteban Rossi-Hansberg: Will working from home kill cities?

Esteban Rossi-Hansberg received his PhD from UChicago in 2002. He has been a Professor at Stanford and at Princeton. He has recently accepted an appointment at Chicago's Economics Department, where he will move to in the autumn of 2021.



His research focuses on macroeconomics, international trade, and urban and regional economics. He is a leading researcher in two areas: the geographic distribution of economic activity; and the interrelation between firm organisation and the economy as whole, studying issues such as wage inequality and the impact of offshoring on home and foreign labour markets.

Recently, he has been focusing on the urban and trade implications of the pandemic and on the geography of climate change.

I interviewed Esteban on 29 November 2020; you can watch our conversation [here](#) and listen to it [here](#).

## DOES LOCATION MATTER LESS?

*When we started thinking of the Internet in the late 90s, we all thought that it would make location matter less and less. We expected people would work from wherever they wanted, yet before the pandemic it seemed to have made local interactions matter more and more. Why do you think that's the case?*

There are still very large migration and trade costs. Even though the technologies are there – we can trade with the whole world and we can take a plane to wherever we want –we just don't use them that much on average. Why is this? Because, I think, in practice it is actually quite costly. It takes a lot of time to move. It takes a lot of time to find out about new places and interact with people and firms in them.

With these new technologies we have seen our interactions reach further, but not that much further. Yes, there are more interactions across locations, but those are still the minority of the interactions that we have. We go to the local restaurant, buy in the local store, work in the local firms. Most of what globalisation and new technologies have done is that they have brought those big global firms close to everyone's home. We're interacting with local stores, but the same local store happens to be present all around the world.

To some extent, access to these technologies has improved the fortunes of some of the intermediate cities. However, we have seen mostly increasing concentration of economic activity in large cities. Part of this phenomenon has been the result of skills becoming more important, and that the interactions between skilled people have become more relevant. Agglomeration forces and the implied externalities have grown, and that has segregated people. People have gone to the bigger cities partly because of amenities, but partly because that's where they can earn the highest wages since that's where they can interact with others. Those agglomeration effects are very large for individuals in cognitive non-routine occupations.

The second aspect of this is that we've seen firms move from technologies that had high variable costs and relatively low fixed costs to technologies that have low variable costs and high fixed costs. This has resulted in the geographic replications of these firms, as I mentioned before. Now, where are those fixed costs produced? Where are the designs being made? Where are the distribution networks managed? All of that is happening in the big cities where this talent is. In sum, technology emphasises the increasing returns in those big cities and the externalities that those imply. Thus, yes, we can reach further, but at the same time, we are more intensive in skills and we are more intensive in fixed costs, both of which have a big urban bias.

*Covid has pushed all these new technologies and now we're doing all of this remote working through Zoom, we're doing more interactions online, thus accelerating digitalisation. Will this mitigate the trends that you are describing? Or are big cities here to stay?*

This is highly speculative, of course, but I think the evidence from urban economics and from all the studies of cities is that systems of cities tend to be very resilient to shocks.

Cities tend to come back after shocks, and the distribution of cities doesn't tend to change that much. For example, if you look at the evolution over time of the size distribution of cities in the United States, or in many countries in Europe (certainly in France), it looks very similar today to what it did 50 years ago. The overall size of the cities has changed, but the distribution itself – how much bigger the biggest city is than the second and so on – is very similar.

So cities have proven very resilient to shocks. The question is: is this time different? I do think there's a potential for it to be different, in particular because of telecommuting technologies. These are not new, and we've seen them improve over time. Telecommuting was already growing before the pandemic, but it was at very low levels (around 5%). But it's rising, as you would expect from the technology getting better over time, or a lot better over time. That's the standard evolution and it is perhaps not going to change cities in a dramatic way, at least in the nearby future.

With Covid of course, a lot of us were sent or chose to go home. In a world in which there's multiple equilibria, can this change the equilibrium?

Let me be a little bit more explicit. How much we get out of going to the office depends on how many of our colleagues go to the office. If we all go to the office and we all interact in the office, we get more out of the office. We learn from our co-workers and there's externalities, knowledge spillovers. That's why there's offices. Of course, these spillovers also operate across firms. And that's why it costs so much money to rent an office in the middle of Palo Alto or in the middle of Manhattan. It pays to be there. This creates a coordination problem. Going to the office works if everyone else goes to the office too. But if no one goes to the office, it's not so good because you have to pay all of the commuting costs and there will be no one there.

Now, suppose the vaccine comes and the whole pandemic goes away. Are we going to go back to the office? Well, if we're coordinating in the equilibrium of not going to the office, we're going to stay there. Why? Because no one wants to be the first mover and go to the office.

Can we solve that coordination problem and make everyone go to the office? It's not going to be that easy. There are individual advantages of staying at home. Most people are saving an hour on average a day not having to go to work and back, and that hour is valuable. Unless firms and governments are proactive in moving us back to an equilibrium where we all go to the office, we're going to stay home.

Now is this new equilibrium bad? Maybe it is a great advantage of the modern world. Maybe it is great to telecommute. But all the evidence that we have is that the interactions we would be missing are valuable. Hence, if the economy doesn't get all those interactions and to the extent that telecommuting doesn't exploit and encourage those interactions, the economy is going to suffer because productivity is going to suffer in the long run. Furthermore, cities are going de-agglomerate as a result of this.

*So, some of these externalities are external, not just to the worker, but even to the firms – externalities that firms aren't capturing. The firm is saving itself some money by not paying the rent. But the city and the productivity of the whole economy could suffer.*

It can happen at different levels. At the firm level, a firm may internalise the benefits and may say: "we as a firm are more productive if everyone comes to the office. We are going to give bonuses for coming to the office and share some of the rents that we get out of the firm being more productive from everyone going to the office." That may be enough to incentivise workers to go to the office.

Then there's another level: interactions across firms. If everyone goes to the office and interacts, they are going to create cross-firm spillovers, and we would need the city government to act. These interactions are very rich, so it is hard to internalise all of them. We were in a good equilibrium in which we were paying a lot of commuting cost. But at that cost we were getting a big benefit, which was all these productivity enhancements from all of us being there. It's a quantitative question to what extent the benefits from not



commuting and all the potentially large environmental benefits of having fewer people driving and so on are going to compensate for the productivity losses that we're going to see from people not going to the office.

Now, if we're in the equilibrium where we don't go to the office, that may also encourage biased technological change to improve those interactions online. It is a possibility. But it is something that we still don't know. We don't know how good these technologies can be.

## MARKET CONCENTRATION

*Industries have been getting more concentrated – fewer larger firms dominate many markets, most notably firms like Amazon, Google, and in many other fields. Many have been concerned about this resulting in anti-competitive practices, increasing margins, and increasing monopoly power. You have disagreed with that interpretation. Why?*

One key fact is that, in the sectors where we've seen large firms grow, we have also seen increasing employment. This tells us that there are other reasons for their growth, unrelated to industrial organisation. There's no real evidence that a few firms are making a sector small by constraining how big the whole sector is. We see exactly the opposite, sectors with increasing concentration are sectors that have been growing (Rossi-Hansberg et al. 2020). For me, that is a big red flag for the view that monopoly power is restricting the growth of a particular sector. It is, in contrast, consistent with the view that technology improvements are the reason for industrial expansion and concentration.

The other fact that is important is that in many sectors – high-tech being the main exception – firms have expanded by replicating geographically. Measured by employment, in the lion's share of sectors there have been local monopolists. Now we are seeing top firms growing and entering all these markets. Of course, nationally, these top firms are grabbing a big chunk of the market. But at the end of the day, even though their national share is large, the local share of the biggest firms has been falling. There used to be one guy selling hardware in each town, and now there's three because two top firms have entered.

We still don't know what this implies for prices. It is very hard to study markups at the local level. So we really don't know what the local effect is in terms of markups, but it is a fact that we see more establishments and lower concentration in local markets. The way these firms have expanded limits the way they can exploit their size, because at the end of the day they're competing in all these local or regional fragmented markets.

## INVESTING IN SIBERIAN REAL ESTATE

*You recently published a fascinating paper on the impact of climate change on the planet-wide geographic distribution of economic activity (Conte et al. 2020). What did you find?*

We have been thinking about the impact of global warming on the distribution of economic activity. At the end of the day, if you want to assess the impact of temperature rises over one or two hundred years, you need a framework that accounts for agents being able to react, where firms and individuals understand the risks of climate change and have options. If you live in an area where floods are more likely, you can move away. A framework where moving is costly, but you can do it. We need to incorporate adaptation. In our model, people move to different locations, and that makes them produce locally in different sectors that are more or less subject to temperature changes. They can also invest in different parts of the world.

What we were after is to what extent locations are going to change their specialisation between, let's say, agriculture and non-agricultural work, and whether that's an effective adaptation mechanism for them or not. If you are in sub-Saharan Africa, your share of employment in agriculture is relatively large compared to other parts of the world. What can you do when temperatures are rising, which might affect agriculture negatively?

One option, of course, is to say: "well, let's stop producing agriculture and let's do some manufacturing". Of course, the obvious objection is that those regions are simply not that good at manufacturing. The other issue is that you still need food, so you're going to have to trade with others in order to get the food that you need. So the key is to model those trade-offs and try to think about whether changes in specialisation across sectors is an effective adaptation mechanism to climate change. Or what role trade costs play in facilitating this type of adaptation.

What we find is that climate change is going to change the regional specialisation of the world quite dramatically.

Agriculture is going to move north quite a bit – there is going to be much more activity in Asia rather than South America, which will specialise more in manufacturing. We see also how populations are going to move. We're going to see an exodus away from Africa, away from parts of Latin America and away from parts of Australia as a result of global warming. The idea is to try to track those things and evaluate what the consequences will be.

How do you do it? We had a revolution in economics which was about creating micro-founded aggregate models where we model the behaviour of individual agents and the profit maximisation of firms, and aggregate those decisions. In the same way, we want to introduce an intermediate level where you do not go directly from agents to aggregate outcomes, but where you put them in a particular location in space. We have the tools to do it; to incorporate this source of heterogeneity. Big computers have helped a lot, and we can quantify these models at a detailed level and account for many local characteristics like amenities and trade costs. We're also starting to make these models dynamic. So once you have these spatial models, that are dynamic and where people can move, trade, and invest, you're in business.

Then you can evaluate climate change. That's the project: to use these models as climate assessment models and bring modern economics to this issue.

*Do you incorporate the same coordination we discussed before? It is probably much easier for someone to move north if their family and friends go with them.*

That's a tricky point. I'm not sure that the models that we have so far deal with it in the way it deserves. I agree that there are coordinated moves. But the way these models work is essentially by having shocks, say climate, that imply some changes in productivity that are direct. This triggers migration, which affects market size across locations. This, in turn, changes the investment that firms do at the local level. There's no actual coordination. But there is something that looks like coordination in the sense that if we all move to Siberia, eventually, not immediately, but eventually we'll make Siberia a nice place to live and produce. We'll invest there and we'll create cities, so that's going to create agglomeration in those places. The fact that we introduce agglomeration effects into these places creates these nonlinearities that essentially work and look like coordination.

*I guess our readers can use your paper to decide which plots of land in Siberia to buy*

Please don't come to me for financial advice... I don't want to insure anyone for those investments.

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## Atif Mian: The savings glut of the rich

Atif Mian received his PhD from MIT in 2001. He has been a Professor at the University of Chicago Booth School of Business and at UC Berkeley, and at Princeton University. At Princeton, he is also the Director of the Julis-Rabinowitz Center for Public Policy and Finance.



His research lies at the intersection of financial markets and macroeconomics, focusing on the political drivers of credit cycles and on the global economy's addiction to debt. I especially appreciate his ability to apply microeconomic techniques to answer important questions at the intersection of finance and macroeconomics.

He is the author of *House of Debt* (2014), in which he and Amir Sufi argue that the increase in household debt was the main cause of the last financial crisis and that, in their response, policymakers focused excessively on bailing out the banking system. The book has helped put the spotlight on the importance of household balance sheets for financial stability. Since the book, Atif has continued to work on household debt but from the perspective of economic inequality.

In 2018, Atif was appointed to the Economic Advisory Council to the Prime Minister of Pakistan. However, after facing public criticism due to his religious beliefs, he was removed from the Council, with several other members resigning in protest.

I interviewed Atif on 15 November 2020; you can watch our conversation [here](#) and listen to it [here](#).

*When the financial crisis happened, you wrote a book called *The House of Debt* on what caused the Great Recession and how to prevent future recurrences. Can you explain to us your hypothesis and what is the evidence that supports it?*

Let me take a step back somewhat from the great financial crisis, partly because I want to tie in the financial crisis of 2008 to the events today, which I'm sure we'll be talking about. I think the story starts in the 1980s. We know now, with the benefit of hindsight, that there was a significant structural shift in the US economy certainly, but to some extent globally as well: the rise in extreme inequality. The concentration of income and wealth at the top grew substantially.

Given that our financial system is primarily based on debt, the natural consequence of this growth in inequality is that, as the very top accumulate more and more assets, they tend to disproportionately do so in the form of debt and fixed-income instruments. Correspondingly, from 1980 onwards, there's another trend that arises along with the rise in extreme inequality: a rise in the ratio of total credit to GDP. Further, this rise in credit

is disproportionately concentrated in the private sector, and specifically in households. You can see this rise in household credit to GDP not just in the US but in many other advanced economies of the world (Spain being a very well-known case),

Another important aspect that we had looked at in our earlier work (Mian and Sufi 2009) was that the rise in household credit was not concentrated at the top one percent. If it had been, one could have argued that since the rich are becoming richer (with higher lifetime incomes), they could pay for it and that there wasn't much to worry about. But this was not the case. The rise in household credit was skewed towards the segments of the population whose income per capita was not growing as fast. So their real burden of debt was rising even faster than what aggregate statistics like credit to GDP might suggest.

But if those who were borrowing were not seeing their incomes rise as fast as the incomes of those at the top, why would they be able to borrow? Why was the financial sector not intervening and telling them to stop borrowing? The basic answer is that they were able to borrow because interest rates kept falling.

So, I see three variables to keep in mind: rising inequality, rising credit or the 'financialisation' of the economy, and the fall in interest rates. The fall in interest rates is important for two reasons. The first is that for the same level of income, a lower interest rate allows one to borrow more. But the second response, which is very important, is that lower interest rates raise asset prices, and in particular housing values. And so the people below the top one percent were able to borrow because the main collateral they had, housing, kept rising in value and they were essentially borrowing against it, either directly or indirectly.

This is the situation that kept building up until the eve of 2008, when the housing market started to collapse. We can get into the reasons for that, but I don't think they are that important for the question at hand. Once the housing market collapsed, the dynamic loop of taking credit against housing slowed down and then reversed. Households could not borrow more and, since this led them to cut their spending, this caused the recession. In sum, the sudden deficiency in aggregate demand happened in 2008 because the credit process that was financing it since 1980s collapsed.

*Many of the accounts of the Great Recession pay a lot of attention to institutional aspects such as the US government subsidising the mortgage market or rating agencies failing to adequately evaluate collateralised debt obligations. Your account to some extent claims that those are just details and that what matters are these much longer trends. Is this the right interpretation?*

That is absolutely correct. In my view, one key piece of evidence in favour of that argument is that we had this crisis in Europe as well, where the institutional details are not necessarily the same as the US. There are no government-sponsored enterprises guaranteeing mortgages in Europe, and yet there was a crisis there too.

A more recent example of this is China. Since 2008 China has relied a lot more on household credit for generating domestic demand. China has seen an unprecedented rise in household credit, a pace of growth in credit that exceeds even what the US experienced before 2008.

The deeper question is: why is the global economy seemingly addicted to debt? When American households stopped borrowing at the pace they were prior to 2008, the US current account deficit with China had to shrink sharply. As a result, all of a sudden China had to find new ways of generating demand for its output, and it started relying much more on domestic credit for demand.

In sum, there is a more important structural issue that we must bring our focus back to: our global macroeconomic system is not in balance, and this is forcing the hand of the credit markets, including the government sector, because when the private sector is unable to generate credit to boost demand, there is a demand deficiency. And the pressure rises on the public sector to run deficits in order to boost demand. But whether you are talking about household credit or, more recently, public deficits, all of this is a reflection and a symptom of a deeper problem, of a deeper malaise, which is structural in nature. That structural imbalance is the rise in inequality that I started off with.

*Traditionally in economics we think that it is not bad for there to be all of these people wanting to save. If we have low interest rates and cheap sources of investment, we should be able to make productive investments to grow our economy. Why is this basic mechanism of the economy broken?*

This is an excellent question that we try to address in recent work of ours (Mian et al. 2020). Indeed, from the traditional lens we always think that savings and lower interest rates are excellent things. But there is a remarkable fact that should make us adjust our thinking. The cost of capital has never been as low as it is today, yet investment has not gone up at all since the 1980s.

So, we have (1) this downward trajectory of real interest rates all the way to negative territory, and (2) more savings in the gross sense of the word. People sometimes call this the global savings glut. However, we point out in recent work (Mian et al. 2020) that there is an equivalent savings glut of the rich. If you focus on the one percent which, as I mentioned, has been accumulating more and more wealth, they tend to save more of their lifetime income relative to the rest of the population. This has been very well known from the time of Hobson and others.

I don't have a full answer to the question. But taking these two trends as an empirical fact, we have a problem of imbalance: savings is not equal to investment, and the excess savings are persistently showing up as additional credit. This tells us that we need to rebalance the economy in some other way.

*Is the solution to regulate household credit? What should we be doing?*

Yes and no. The traditional macroprudential framework concerns itself with the ‘too big to fail’ regulation question. All sensible stuff, of course, but those regulations are thinking cyclically. They try to avoid unnecessary fluctuations driven by excess financial leverage. That’s the ‘yes’ part of my answer.

But the ‘no’ part is that these cyclically oriented regulations are not going to address the structural, secular problem we face. Suppose today we stepped in and banned all credit. It would be quite draconian, but one problem it would have from a macro view is that it would lead to insufficient demand. You partly need people to borrow to generate demand if you do not address the structural issue of inequality and you continue to have the savings glut of the rich. If in such a situation, we made it more difficult for people lower down in the distribution to borrow, we would fall into a demand-deficient liquidity trap which would lead the economy into a recession. We would be faced with more problems than we were trying to address in the first place. That’s the ‘no’ part. It’s not going to really address the structural issue: the imbalances derived from extreme inequality. And that’s where we really need to focus on in the medium to long run.

*Inspired by Keynes, economists tend to see these demand imbalances as cyclical issues. But what you’re talking about is completely different view – it is not about the business cycle, but a structural issue. What are the precedents for this view?*

Well, first of all, I should acknowledge my co-authors Ludwig Straub at Harvard and Amir Sufi at Chicago. We feel that this view is not represented sufficiently, which is why we wrote the papers to make people aware of the importance of these slow-moving but persistent forces.

Indeed, we are deviating from the standard Keynesian business cycle view. But we are not the first ones. As you know, one is always standing on the shoulders of giants. You go back to the work of Hobson, for example, and many others, and they pointed out these imbalances that arise with extreme inequality. What we are trying to do is formalise those ideas in the modern economic framework, and trying to make clearer the implications for monetary, fiscal, and tax policy

Take monetary policy as an example. One implication of our view is that, as the natural rate of interest continues to fall (because of the imbalance between savings and investment), central banks, which do not have that much control over long-term interest rates, are going to be forced in the direction of lower interest rates.

Another implication is the notion of limited ammunition. Monetary policy partly works through creation of new credit: you lower the interest rate to allow people to borrow and drive up spending. I don’t claim that’s the wrong thing to do, but when one does this, it raises the level of debt for those who are worse off from the rising inequality. And subsequently the only way for these individuals to pay back what they owe is for interest

rates to fall even lower. This is the process that we refer to as ‘indebted demand’ (Mian et al. 2021) – you can lower interest rates now and boost credit, but a consequence of that is that you will be forced to keep interest rates lower for longer. So, this notion of the normalisation of interest rates going back to some long-term fixed point never happens.

*The alternative explanation of the excess savings is that, on one hand you have people getting older and wanting to put more money away for their retirement, and on the other hand the current digital economy doesn't need a lot of investment because it doesn't need that much physical capital. So the low interest rates are because people want to save a lot but we don't have much use for it. What's the main argument against this view?*

I don't want to deny that this is a force that goes in the same direction of pushing interest rates down. However, this force is empirically not sufficient to explain what we see.

You can take the differences across US states as an example, which is what we do in the “Savings Glut of the Rich”. You actually have a lot of variation across states in rising top income inequality. However, the demographics are roughly similar and when you do the experiment, what is interesting is that the states that have seen a much stronger rise in home income inequality also tend to be states that have accumulated a lot more in financial assets, primarily fixed income assets (government and household debt), precisely as in the story I was suggesting. We can also quantify that the magnitude is large enough to explain the trends that we observe.

So when you look at this question empirically, the rise of savings driven by income inequality is a very important piece of the savings glut. I'm not denying the demographic shift, that's real as well, but it's not as important as the rise in inequality.

*One consequence of this cycle that you're highlighting is that as debt accumulates, interest rates go down and we see stock market prices soar, which in turn increases inequality even more.*

That's a fascinating question and speaks to why I love economics. Economics forces us to think of the economy as a system and everything has to add up collectively. And when you go through that thinking, it gives you insights that quick thinking would easily ignore, such as the one you just pointed to.

The interest rate does not fall from the sky, it is one of the most important prices because it equilibrates whatever else is going on in the economy. And as we talked about, the savings glut leads the interest rate to fall so as to generate more credit to balance the economy. However, although that process is needed to balance the economy from day to day or year to year, it has a deeper, longer-term implication: that asset prices rise.

This part always reminds me of Henry George. Anyone who hasn't read Henry George, should really read up on him. He focused on the assets that are in inelastic supply. Think of real estate in Manhattan – that piece of rock that God created. We cannot create more



of those rocks for whatever reason. Since these assets are in inelastic supply, their value will increase more than normal assets with a decline in the interest rate. So, what ends up happening is that, as you lower interest rates further and further, the forces of natural adjustment are very unfair, because they actually benefit those who already own assets.

So that leads to an interesting political dynamic, where those who are left out feel even more left out as interest rates fall. At the beginning they were able save for five years to buy an apartment in Manhattan, but all of a sudden, that calculus has shifted to 15 years, because the prices in Manhattan have just risen that much. This starts to build social and political resentment and polarisation.

We wrote these papers because we want to convey this sense of urgency that we need to think differently. We are not facing the standard cyclical problem. While I completely agree on the need to run deficits, deficits are not the answer because the structural problem is the unbalanced economy. To address it, we will need to be bolder in what we are willing to suggest and implement.

*Do you believe that the pandemic has exacerbated the savings glut of the rich?*

The most important attribute of the pandemic, which makes it a lot more dangerous than the 2008 crisis, is how unequal it is in its impact. It's really remarkable if you look at, for example, the loss of earnings in the US for the top one percent or ten percent versus the rest.

People like you and I can continue to do our work over Zoom and are relatively unaffected. But people who depend on personal contact, which tend to be in relatively lower earning occupations, have been brutally decimated. Go back thirty or forty years and look at the source of our structural problems, which is this inequitable growth and this build-up of inequality, and now add to it this big crisis which has further separated the 'haves' from the 'have nots'. So the urgency of addressing these issues is even greater than before.

*What policies should we be thinking about to deal with the crisis?*

It's very important to be clear about the target of these policies. To me these are (1) achieving a more equitable growth, and (2) addressing some of the legacy issues of the imbalances we have seen.

The first aspect we should address is the fall in investment that we discussed. In the US, public investment as a share of GDP or as a share of overall government spending has dropped to around 40 or even 30 percent of what it used to be in the 60s, and government spending has shifted towards transfers. The composition of government spending needs to be addressed, but given that transfers are important, you have to run deficits to do it. Further, the nature of that public investment has to be such that the gains from it go disproportionately towards the bottom 90 percent.

The second aspect should be about redistribution. This can be achieved through tax reform. The US tax incidence is not progressive enough because of things like payroll taxes, so we need to lower the tax burden for the bottom 90 percent of the population and combine it with tax increases at the very top. But let me emphasise that I am not making any net revenue statement here. I am not saying that is not an issue, but we need to think of fiscal policy as addressing the imbalances. We also need to seriously think about adding a Warren-style wealth tax.

And the last thing is promoting competition. A lot of people have talked about this, and you know this work very well Luis, but the rise of big monopolies has restricted investment.

So it's a combination of these three policies: public investment, redistributive taxation, and ensuring a level playing field. There are of course many others, but in my view those are the three main ingredients we need.

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# **A MORE BALANCED GLOBALISATION**



# Dani Rodrik: Globalisation after the Washington Consensus

Dani Rodrik received his PhD from Princeton in 1985. Since then, he has been a Professor at Harvard University, with spells as a Professor at Columbia and at Princeton's Institute for Advanced Study. Dani is also the co-Director of the Economics for Inclusive Prosperity Network and is the President-Elect of the International Economic Association.



His research has covered areas from international economics, development economics, and political economy, with his current work focusing on how to create more inclusive economies in developed and developing societies.

Dani is perhaps best known for the 'Rodrik Trilemma,' which posits that countries cannot simultaneously have democracy, national determination, and hyper-globalisation (or deep economic integration) (Rodrik, 2000). Pursuing two of these objectives means giving up on the third.

Dani has written several books, including *The Paradox of Globalization* (2011) and, more recently, *Straight Talk on Trade: Ideas for a Sane World Economy* (2017). Dani is a regular contributor to *Project Syndicate*.

I interviewed Dani on 11 October 2020; you can watch our conversation [here](#) and listen to it [here](#).

## A BETTER GLOBALISATION

*You are one of the foremost experts on globalisation, and have argued that the pandemic exposed the limits of global cooperation, particularly in health. What went wrong?*

The pandemic highlights the possibilities of an alternative globalisation. It exposed us to an area of our global community (if you can call it that), public health, where we have not done nearly enough in terms of institution building and global governance. We have a World Health Organization that proved quite inadequate to the task.

I wonder whether we might have had a healthier globalisation if we had spent a little bit less time opening up our borders to trade and investment and doing the bidding of multinational corporations and banks, and instead had invested our political capital in areas of global public goods, like pandemic prevention or climate change. It's a question of imbalance. Think about the role of the IMF, the WTO and the OECD. Those are the institutions that we think about when we think about globalisation. We don't think about the WHO, UNESCO, UNICEF or the ILO.

There are many elements of what I've called hyper-globalisation (Rodrik 2011), which is very much a corporate-led globalisation, where we've pushed into domains where the overall gains from trade are limited, but the gains are very concentrated and the losses are significant. We have gone a little bit too far beyond what sensible economics would justify in many of the new areas in which the World Trade Organization has moved into, such as intellectual property rights, subsidies, agriculture, and many areas of services. Furthermore, those are all areas where there have been significant demonstrable gains for international corporations, such as pharmaceutical companies or high-tech firms, while the overall gains have not been large and have sometimes been negative for different parts of society. Finance is another area with very few demonstrable gains and significant costs in terms of crises and volatility. By making the free flow of short-term capital the norm rather than the exception, we've created more instability in the world economy, and the promises of increased savings, increased investment in low-income countries, more consumption smoothing, and a better allocation of capital have not been realised. And what we have got are the financial crises that comes with more free flowing capital.

*Another problem is taxation. Maintaining any level of tax fairness in the world right has proved hard to do because some small countries benefit hugely from these free capital flows and low (or no) taxes. How do we solve this problem?*

That's clearly another area where globalisation has led to a downward arbitrage of tax rates, and that's very visible. It's a good thing that people are now realising that, and there has been some international cooperation through the Base Erosion and Profit Shifting (BEPS) initiative and other agreements for more tax information sharing. The burden of taxation has shifted too much towards labour and away from capital because of capitals' threat to leave to lower tax jurisdictions.

This is a good example of the fundamental trade-off that we face when thinking about globalisation between the gains from trade that we get by lowering barriers and the loss in regulatory diversity that must follow as a result. If you make capital mobility too free and too easy, it's going to be very difficult for countries that want to tax capital at a higher rate to maintain those higher tax rates. The balance has gone too far in the direction of trying to reap the gains from trade, and we have not valued the benefits of regulatory diversity enough – the idea that different countries may want to have different regulations or standards.

It's also the case with the issue of carbon border taxes. If some countries want to have serious decarbonisation policies and want to impose carbon taxes, how will their domestic firms compete against imports from jurisdictions where there are no such policies? As a result, we are coming to appreciate carbon border taxes as a way to ensure that imports don't undermine domestic decarbonisation policies.

You might say the same about how our domestic labour and social standards are affected when we trade with countries with very weak standards, where collective bargaining is not recognised, and where labour rights are repressed. Essentially, we are telling our workers to compete on the same terms as the workers that don't have the same bargaining and social rights that they have. To this day, we think that's perfectly normal, while I would argue that the logic is exactly analogous to that of carbon border taxes or essentially throwing some sand in the wheels of international finance so that countries can maintain different tax regimes. We also need to think about what one might call anti-social dumping, that if you want to maintain your labour standards or social rights there will be times when you may want to restrict trade.

It just goes back to recognising this fundamental trade-off. As economists, we know you cannot have everything at once. You cannot maximise the gains from trade because that means you're giving up too much of the benefits of regulatory diversity. Different nations want different types of public goods, so you want an intermediate point.

*How do we know which are the areas where globalisation can go further and which are areas where we have gone too far? What are the key criteria that we should use to tell them apart?*

I think there are two sets of circumstances when the argument for global governance is very strong.

The first are global public goods. Fighting pandemics and, of course, fighting climate change are clear examples. What is critical about global public goods is that they can only be provided through collaboration because the interest of each individual nation is to free ride on the investments of the rest of countries. You want every other country to decarbonise, but you do not want to impose any cost on your own industries.

Now, the world economy is not a global public good in the sense that the benefits of pursuing open trade policies, of having good financial regulations, of having appropriate macroeconomic stability are primarily domestic. Unlike what many people believe, the argument of the global commons does not apply in many areas of economics. And there we're better off leaving much greater leeway for countries to do what they want.

The second set of circumstances are where we want to prevent beggar-thy-neighbour policies, where the whole point is to derive some national benefits at the expense of other countries, like exercising monopoly power or harmful tax competition. So, there are some economic areas where there are good arguments for global regulation, but most of the things that we negotiate in international trade agreements or international finance actually don't have that nature.



*Without a global hegemon, for instance if the US became one more purely self-interested actor who doesn't care for the world order, it's very difficult to enforce outcomes in which some country loses even a little bit.*

In many economic areas this is not an issue because it's in a nation's own interest to pursue policies that are, by and large, to the benefit of everybody else. If you are an economy that can address its domestic social and distributional problems, then you do want to remain fairly open to the rest of the world – it's in your own interest. We teach comparative advantage and the gains from trade as the reason why countries should keep borders open to goods and services.

Now, you run into problems when you try to sign endless trade agreements, and you don't do what's required to take care of the domestic economy. That becomes an unsustainable bargain, because ultimately you get this backlash: "They've been telling us that globalisation was a tide that would lift all boats, but we see a lot of people getting very wealthy and rich out of globalisation, whereas we are being squeezed here." The middle class has been squeezed in a lot of countries because of the consequences of globalisation.

So, I think there are areas where you don't need a hegemon. And you are absolutely right, there are areas where, without a hegemon, the only way you can maintain cooperation is by slowly building trust and reputation and insisting that in the long run this is in everybody's interest.

But I think it's a false dilemma for many economic areas. That is the lesson of the Bretton Woods era, for example, where international discipline was very weak. Consider GATT – the agreement was not worth the paper it was written on in terms of its enforcement power, yet we got huge amounts of trade liberalisation. Why? Because countries were doing the right thing domestically. They were growing with inclusion and equity. And when the growth of trade threatened domestic social bargains, countries would typically raise import barriers (as happened with restrictions on garment imports during the 1970s and voluntary export restraints in the 1980s). When countries are doing well, they're much more likely to condone opening up to the rest of the world, so the best thing we can actually do for the world economy and for globalisation is allow countries to solve their domestic problems.

*But in some of those other areas you mentioned, cooperation is important (climate, pandemics, tax havens). It does seem like, at any particular time, cooperation is going to break down because there's always going to be somebody who is interested and powerful enough so that they can, at least in their own interest, not follow the common rules. Even in the European Union, where we have strong institutions, we can't really ensure that certain countries don't free ride without some sort of coercive power.*

That is the central dilemma of international relations; as you said, there is no enforcer. But I think the biggest problem we face is not lack of global cooperation with the absence of global governance, the biggest problem we have now is lousy domestic governance. I'm

willing to bet anything that where we will see the climate action that really matters is at the domestic level, even though economically it makes no sense. Why should the EU or California have decarbonisation policies? You have political mobilisation and political capacity at the level of much smaller jurisdictions, so that's where you're going to get the action. So, really our challenge is to fix local and national governance.

## POLICY AFTER THE WASHINGTON CONSENSUS

*One of our traditional responses to people losing jobs was training and skills programmes. However, you're not very convinced that these investments are a good way to respond to this shrinkage of middle-class jobs. What's your fear here?*

I would make two points. The first is that if we leave the technology, investment, and employment decisions to firms, and just emphasise skills, training, and education, this is going to be a losing battle because skills will never catch up with the demands of technology. More investment in education is the generic solution every time. I have nothing against education and investment in skills, but the point of a well-functioning economy is to create jobs for the people it does have, not the people that it hopes it's going to train in the future.

The second point is that it's fine to invest in people's education, but if firms are not increasing their demand for workers, these investments are not going to do much. There are secular trends that are inherently polarising labour markets and leading to the disappearance of jobs in the middle of the skills distribution – the kinds of jobs that are the backbone of the middle class. If jobs aren't being produced, it's no good to keep on investing in skills. Jobs simply won't be there, so we need complementary strategies that will ensure that there is an increase in the supply of jobs in the middle of the skills distribution, and that means going beyond simply education and training.

*So, what is the new, dare I call it, 'Boston consensus'?*

Well, first, I hope we never get another consensus in policy. We need a lot of experimentation and diversity in policy, but I do think that there is a common and universal problem that these experimental policies have to target: creating good jobs. We won't be able to tackle the problems that our societies face simply by redistributing income. In that aspect many societies have reached a limit, and people want to live satisfying lives with meaningful jobs.

What is this going to require? For example, it means making training and educational programmes much more connected to employers. We find that the training programmes that work best are those where the trainers and the public employment services work together. The idea is both to ensure that employers' needs are met, but also that employers focus on developing human capital while taking into account the needs of the local community.

We also need new types of industrial policies that are much less focus on subsidising capital investment, and much more focused on providing a portfolio of services to small and medium-sized enterprises with a quid pro quo that, in return for those productivity-enhancing services, they will generate employment. We also need to rethink our innovation and technology policies. Today when we think about the direction of technological change, we completely leave aside how this relates to the creation of good jobs. We understand that we can redirect innovation where green technologies are concerned, but there is a completely analogous externality when it comes to the failure to create good jobs because that has tremendously negative effects on local communities. So, we need to think about how to redirect new technologies in ways where, to the extent possible, they also complement labour as opposed to replace it. In the European context, for example, the European Green Deal is an opportunity to think about what type of green investments are much more likely to be friendly to labour.

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# Pol Antràs: Is globalisation slowing down?

Pol Antràs received his PhD from MIT in 2003, and since then he has been a Professor at Harvard.



Pol is one of the leading economists in the field of international economic and applied theory. He has been one of the leading proponents of the 'new' trade theory, which emphasises the importance of firms, rather than sectors or countries, in thinking about trade and globalisation. His most recent work focuses on the emergence of global value chains and on the interplay between trade, inequality and costly redistribution.

Pol has been an editor of the *Quarterly Journal of Economics*. He has also published a book summarising his academic work: *Global Production: Firms, Contracts and Trade Structure* (2015).

I interviewed Pol on 6 December 2020; you can watch our conversation [here](#) and listen to it [here](#).

## SLOWBALISATION?

*The first thing I want to talk about is deglobalisation. It seems we have entered a new phase where trade is no longer growing, and that the trend towards globalisation is reversing. What does the data tell us?*

The case for what *The Economist* has called the “slowbalisation process” (*The Economist* 2019) I think is very clear. If you look at various measures of globalisation, they grew incredibly fast in the 80s, 90s and early 2000s, yet stagnated after the Great Recession. Capital flows are down relative to their peak in the Great Recession; trade flows as a percentage of world GDP went down dramatically during the Great Recession, quickly recovered, and have been pretty much stagnant since then. But there’s some exceptions, with migration being at an all-time high.

So, yes, if you’re a commentator and you have an agenda of claiming that there’s deglobalisation, you’re going to be able to pick one or two indicators that are going to show that. However, my sense is that, when you put all the things together, even if there might be some indications that we are entering a phase of deglobalisation, we certainly have not at this point. There’s the risk of it happening, but I don’t see very clear signs that it has already happened.

*You have classified the drivers of globalisation into three: technology, policy and politics. Could you explain how they first drove globalisation and how potentially they are no longer doing so?<sup>1</sup>*

Indeed, if you want to understand deglobalisation, the way to go is to understand the drivers of why we got here:

1. On the technology side you have the ICT Revolution. As you well know from your own work on the topic, the ICT Revolution was a very dramatic shock for the organisation of production, not only in terms of how firms organise production and hierarchies, like your pathbreaking work showed, but also from the point of view of international economics, where it allowed firms to organise production much more efficiently at long distances. The firms that initially had their whole production process in, for example, Spain, Germany or the UK realised that: “Hey, there’s some workers far away that get paid much lower wages and that are quite efficient. Now we can actually communicate with them and tell them what we want them to do.” That’s the technological driver, driving the increases in demand for foreign labour. And it is driven by computerisation, increased power of computers, increased speed of communication through fibreoptic cables and so forth. Remember, all this is happening largely in the 80s and 90s. Yes, of course, computers came up earlier and so on, but the moment they start being used in businesses and have an impact on the economy is really the 80s and 90s
2. On the policy side, at the multilateral level most of it happened earlier, but during that same period we saw a very marked trade liberalisation, especially at the regional level. For example, Spain, Portugal and Greece only entered the EU in 1986. There’s an expansion to Eastern European countries in the 90s. This was a huge fragmentation of production in Europe. In the US, NAFTA is signed in 1994, MERCOSUR is signed in 1991. The Asian AFTA is signed in 1992. And, starting in the 90s, but especially 2001, China enters the WTO and the world trading system.
3. And then the last point is politics. The fall of communism in Eastern Europe, Deng Xiaoping’s opening of the Chinese economy in 1979 and India’s liberalisation in the 90s – all of these are political shocks that massively increased the amount of labour that was available for this process of globalisation.

You have both supply and demand shocks working together to generate this very marked increase in globalisation. Obviously, there are other things that were happening around that period. Some may attribute more importance to one aspect or another, but I think these are the key things to understand how we got to 2008 with a significantly larger amount of openness than in the early 70s.

1 See Antràs (2020).

*And then from that moment onwards, some of those forces, or even several of those forces, stopped pushing in the same direction? What changed with the last crisis?*

On the technology front, a lot of these technologies started reaching diminishing returns. You might say Moore's Law for semiconductors is still going strong, but we know from work by Bloom and co-authors (Bloom et al. 2020) that that's happening at an increasingly high cost. So it's becoming harder and harder to innovate. However, there are other new technologies that are giving globalisation a second or a third wind. The digital platforms are an offspring of the ICT Revolution and have been quite important in enhancing trade.

There is a business side to it, it is not just about platforms like Amazon. They're used by firms that need to find suppliers and these Amazon-like rating systems have actually helped a lot of companies as well. Digital platforms have also supported service provision in less developed economies that have suffered from bad infrastructure that has limited their ability to participate in global value chains. Now they find that as long as they have the digital infrastructure, they can get a foot in certain value chains. There may be a lot of overhype and we may not know a lot, but there is a sense that blockchain, by facilitating payments, may be leading to better enforcement of contracts. This might reduce transaction costs, particularly for transactions where more formal contracting is lacking, which is typical in international transactions.

There's a general sentiment that automation, through technologies like industrial robots or 3D printing, are likely to fuel deglobalisation. The argument appears to make a lot of sense. In the past, companies went to China because wages were lower, but if they now start using robots, they might as well stay in California. There's no reason to have production in China.

My view on this is different. On the conceptual front it is not that obvious. There's certainly a substitution effect, but robots tend to increase firm productivity big time. Once you automate, you can scale up much more easily. To the extent that many parts of production are going to use labour, and to the extent that there is still a competitive advantage for some of those things that are made abroad, you have this productivity effect, which basically tells you that as firms become more productive, they might increase the demand for foreign inputs. Empirically this productivity effect can be quite large.

We knew that in other settings. In my own work, for instance, I've looked at offshoring. In our own joint work as well (Antràs et al. 2008). For example, in a recent paper with Teresa Fort and Felix Tintel we can see that many of the firms that offshored to China tended to increase their intermediate input purchases from local US, Mexican, or German suppliers (Antràs et al. 2017). And you might have thought that those US firms that offshore, they basically took some jobs or some input purchases that were done locally in the US and started buying from China. But in the data, what you actually see is that firms that offshored to China tended to increase their intermediate input purchases

from local US suppliers, from Mexican suppliers, from German suppliers. That is, if you offshore to China to increase your productivity, you increase your optimal scale, and then you basically demand more inputs from everywhere.

Acemoglu and co-authors are absolutely right. Local and unskilled labour and employment more generally go down, but when you look at the purchases of intermediate inputs, these go up after processes of automation. Yes, automation is going to readjust things and is going to reorganise production, but I don't see why it's necessarily going to lead to deglobalisation, because of these efficiency increases. And to the extent that we still need parts and materials from abroad, the demand for those things might actually go up rather than down. Every single study<sup>2</sup> that I've seen on automation and trade shows complementarity between them: they both go up together. Although conceptually it could go either way, I do think actually that technology is going to continue to foster globalisation.

*So the technology picture is clear. What about policy?*

It's undeniable that there are growing concerns about a protectionist turn in policy. The Doha round of the WTO has been going on for over a decade with very little progress. The WTO has basically stopped making progress, but there's been a lot of erosion of the architecture on which it was based. Even at the regional level, you've also witnessed Brexit. In the US, the USMCA is the new NAFTA with a small change, but if anything, it's a step back. There is also the US-China trade war, which has brought higher levels of tariffs that we have seen in decades.

There was growing disillusionment and discontent over globalisation. Trade increased aggregate income, but it also increased inequality a lot. Even if I'm right about robots, even though they might increase globalisation, they're almost certainly going to continue to increase inequality. This is skill-biased technological change. It's somewhat different. But if anything, it's even worse for unskilled workers. So unless we find ways to better compensate the losers to reduce that alienation, we're going to be in trouble.

## HOW FRAGILE ARE GLOBAL VALUE CHAINS?

*In the past when economists talked about trade, they thought about it in the Ricardian sense of countries selling goods to each other – we sell wine, we buy textiles. Much of your research has focused on how trade has changed lately. How is trade today different?*

David Ricardo's work continues to permeate the trade field. But over the last couple of decades, the field has had a big focus on firm-level approaches to trade. Firms are deciding not just to produce using inputs from local suppliers, but they go to China, they

<sup>2</sup> See, for example, Stapleton and Webb (2020) with Spanish data, or the work of the World Bank, including Artuc et al. (2018).

go to Bulgaria and try to find suppliers. What the field has been arguing and showing is that when you start at the micro level and have models of firm-level decisions and aggregate up to the economy, you actually get a lot of insights

This is not just the way to think about firm-level trade, but it actually turns out to be the right way to think about country-level trade

But further, a very large percentage of world trade is accounted for by very large multinational companies that not only produce domestically and export, but that also have plants in several countries where they assemble goods, and buy parts and components from other countries. For example, when we try to explain US exports and imports, we may want to think about the fact that one of the largest importers and exporters in the US might be a firm like Toyota, which is not a US-based company and whose decisions in the US are clearly interdependent with their decisions in Japan and their decisions in Europe. Even if you do not care about aggregates, even if you see what the 50 largest companies in the world do, you're going to have to pay attention because it explains a large share of trade flows.

For instance, the China shock created a very dramatic negative impact on US manufacturing. Yes, that's part of the story. But it is also true that a lot of what was imported from China was not final goods, but parts and components. That basically allowed some US companies to grow and expand. And their expansion actually had a positive effect on US manufacturing. These more subtle and complex effects tell us that the effects of certain policies might be different than otherwise thought. If you have a trade war with China, you're not only protecting your steel industry in the US, but you're also making steel more expensive for automakers in the US, and that has a negative impact on them.

*After the pandemic we are seeing a renaissance of industrial policy. People are valuing the independence of our supply chains and our strategic sovereignty. What is your view about the fragility of global value chains?*

This concern needs to be taken into account. I always give the example that if we push the globalisation argument to its limits, we might conclude for instance that, if Spain wants to have the best possible army, it should just offshore it to the Chinese. That is silly, but it gets at the issue of national security. So I'm very sympathetic to this notion. And I do believe there is a line to be drawn.

Now, the issue is where you draw that line. And that I get very uneasy about. Because we've had problems with respirators and other medical supplies, we question the reliability of all supply chains. Yet, during the height of the pandemic in March and April, the only two products that were in short supply were toilet paper and meat. Well, it turns out that 90% of US consumption of these two goods is local. So if the argument is really about assuring



provisions in times of crisis, I'm not entirely sure that moving them closer is necessarily going to deal with it, and anytime you open the door for this type of government action the issue is where you draw the line. And it's hard to know exactly where.

*One reassuring thing is that, contrary to expectations, trade flows and international exchanges have recovered.*

A big chunk of world trade is associated with a few hundred companies that are large and that have complex global value chains. When the crisis came and things came to a halt, they didn't reorganise things massively. For example, they didn't start changing suppliers very dramatically, so that when things went back to normal, they could scale up again easily. We saw that from previous studies that looked at the Great Recession or previous studies that looked at the Asian financial crisis. These are large shocks. But even when those very large shocks happen, very often we don't see international links being broken up. It's very complex to set up value chains, so people tend to stick together and try to ride it out. The current crisis may have led companies to reassess what they should be doing – maybe they should move out of China and set up plants in their own country – but when they crunch the numbers, they may realise that it's very expensive to build new plants, new equipment. There are such economies of scale that it's very costly to move things around.

I must confess, you might remember back in 2008 and 2009 when the crisis was starting, you and I were in Oviedo for a ceremony where you gave a very nice speech...

*...for your prize for the “best economist under 40”.*

That was probably the first time I was talking to the press. I was all sure of myself, and was warning that the recession would lead to depressed trade flows for the next five to ten years. Because it's so hard to create those links, if the crisis breaks them up you can't expect things to reappear quickly. But six months later, I was looking like a fool because things picked up very quickly.

I had missed that firms are not dumb. Firms realise that resetting value chains is very costly, so they hold together. If the supplier was in trouble, they would extend the line of credit just to keep things alive so that when things go back to normal, they can scale up. When, a couple of years later, people started looking at the microdata, what we call the extensive margin, the trade links did not move much. It was all an intensive margin – shut down and then back up. For the current covid crisis it's a bit early to tell, but Asier Minondo (2020), a Spanish economist, has looked at Spanish data and found that things have recovered very quickly because the adjustment has been 95% of the intensive margin.

So I do think that it takes very large and persistent shocks to lead to a reorganisation of production, not even a Great Recession is enough. Policy shocks that are likely to persist are going to lead to this. But Covid to me, and especially at this point, looks like something that in a year we're out of it.

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# Michael Pettis: Trade wars are class wars

Michael Pettis is a Professor of Finance at the Pekin University Guanghua School of Management and a Senior Fellow at the Carnegie Endowment for International Peace. He has previously been a Professor at the Columbia Graduate School of Business and has had an extensive career in finance, working at Manufacturers Hanover (now JPMorgan), Bear Stearns, and at Credit Suisse as the head of its emerging markets trading desk. His current research focuses on China's economy and financial markets.



He has published several books, including *The Great Rebalancing: Trade, Conflict, and the Perilous Road Ahead for the World Economy* (2013) and, most recently, *Trade Wars are Class Wars: How Rising Inequality Distorts the Global Economy and Threatens International Peace* (2020), written with Matthew C. Klein.

Michael has been an advisor to several governments on banking system and sovereign debt reforms, including for the Mexican government on the privatisation of its banking system, the Republic of Macedonia on the restructuring of its international bank debt, and the South Korean Ministry of Finance on the restructuring of the country's commercial bank debt.

Michael has also founded Maybe Mars, the leading independent record label in China, and has been called China's underground music philanthropist.

I interviewed Michael on 26 July 2020; you can watch our conversation [here](#) and listen to it [here](#).

## TRADE WARS ARE CLASS WARS

*Let's start from the key thesis of your recent book, which has to do with the relationship between inequality and trade wars. What do underconsumption and increasing inequality have to do with trade?*

The first thing I should say is that my co-author, Matt Klein, and I didn't really invent this argument. What we are really doing is reviving an argument that is more than 100 years old by the British economist John Hobson and his American contemporary, Charles Arthur Conant. The idea is that when you have significant income inequality, the total amount that a country produces exceeds the total amount that it can consume. The

reason for this is that rich people don't consume a significant portion of their income. As a result, economies need to either adjust domestically or, in an open economy, export the excess savings and run the corresponding current account surplus.

So, our argument is that the great trade and capital flow imbalances that we see around the world have nothing to do with some countries being more or less efficient than others; they have to do with the distribution of income. When you gain competitiveness by reducing wages and by suppressing wage growth, that reduces global demand, but it increases your share of whatever is left. It's a classic 'beggar-thy-neighbour' dynamic. We argue that when you look at the trade conflicts between nations, it's very important to understand that it is the same groups in the deficit nation and in the surplus nation that pay for the cost of the adjustment. And the same groups within the surplus and deficit nations benefit from the suppression of wages. That's why we gave the rather provocative title of "Trade wars are class wars". We wanted to argue that trade wars are not really conflicts between countries; they are conflicts between economic sectors that express themselves as imbalances between countries.

*What are the key pieces of evidence in favour of your argument that the cause for the trade imbalances is the enormous growth in inequality that we have seen since the early '90s?*

The easiest case to point to is Europe. Before 2003 Germany was running trade deficits and had problems with employment so, between 2003 and 2005, Germany implemented the so-called Hartz reforms. Their effect was to slow the growth of wages relative to GDP growth, but GDP growth didn't pick up. If anything, it slowed a bit, but wage growth dropped to about a third of what it had been before the reforms. So, if wages grow more slowly than GDP and if wages represent the bulk of household income, the household share of GDP should contract. This is just arithmetic, and it is exactly what happened.

Further, German savings soared during that period. You might remember all the articles explaining that German savings were high because Germans were natural, prudent savers, unlike the Spanish who take siestas and spend all their money. But of course, that's not what happened. What happened is that as you slowed the growth of wages relative to GDP, there was a transfer of wealth from ordinary Germans to businesses. The household share of GDP went down, and business profits exploded. The problem is that, because most consumption is household consumption and business profits are 100% savings (since businesses don't consume any of their income), automatically the savings rate goes up. It is not because people decide to save more but simply a result of that transfer of wealth.

Now, the classic supply-side theory says that rising savings are a good thing because savings are equal to investment, and if savings go up, investment goes up. And that's how you generate growth. That's true under certain conditions, for example in developing countries or in the United States during the 19th century, where there is a huge need for additional savings because there are huge investment needs that are constrained by the

lack of savings. But in advanced economies today there's no savings constraint – interest rates are zero. American and European companies are sitting on huge piles of cash that they don't know what to do with. An increase in the savings rate doesn't necessarily lead to an increase in investment. In fact, in Germany, the investment share of GDP went down as the savings rate went up.

So Germany went from a position where savings were less than investment to a position where investment went down a bit and savings soared. As a result, and by definition, it ran a huge current account surplus. Now, what happened with these exports of savings? They were poured into the countries of Southern Europe. Crucially, all these receiving countries changed their behaviour exactly at the same time, so the idea that there are cultural reasons that explain the shift makes no sense. If they had been developing countries with huge savings constraints on their investment, productive investment would have gone up. But they're not. There was no savings constraint and so, by definition, savings had to go down, and so you saw this collapse in savings in all of those countries.

In sum, none of this was a coincidence. We saw a policy in Germany that reduced wages in order to make it more competitive, and the immediate impact was on Germany's trade partners, which, because of the euro, had no way of defending themselves. Immediately in all of those countries you saw, as a result of the collapse in domestic savings, huge trade deficits and current capital account surpluses.

*Today, many economists would explain the decline in real rates over the last few decades by pointing to trends like our societies ageing (which increases savings) or to investment needs not being large (because today's technology-driven economy doesn't need a lot of physical capital). Thus, there is low investment demand but a high savings supply, and so we get interest rates dropping over a long period of time. How do you differentiate the impact of these secular trends that also result in huge excess savings throughout the Western world?*

I think one of the problems with that story is that it confuses the behaviour of individuals with the behaviour of the economy. You and I can save more for our retirement, but our countries cannot save more. They can only save more if there is more investment. If you look at the behaviour of individuals, the surge in savings had nothing to do with the savings of ordinary individuals. Their savings rates didn't change. Instead, the increase in the savings rate was a result of the transfer of income from consuming entities to non-consuming entities. In the case of Germany, it was almost entirely explained by the increase in business profits. Additionally, if Germany was the only ageing country in Europe, I would still disagree but could see the logic. But of course, Spain and Italy are also ageing.

*What is the policy solution? Is it trade barriers?*

There are three solutions, but unfortunately the best ones are the least likely.

The first solution is that we all get together and adjust the trade imbalances. Remember, during Bretton Woods one of the big conflicts between Harry D. White and John M. Keynes was that Keynes understood, based on British experience in the 1920s, that trade imbalances were not caused by the lack of discipline in deficit countries. It was just as likely, perhaps even more likely, to be caused by lack of discipline in the surplus countries. His solution was a trade agreement in which both surplus and deficit countries would be forced to adjust, so one of the things we could do is have an international conference to get together and basically agree on Keynes's proposal for the global trade and capital flow regime. Now, that's the best solution, but it would be extremely difficult.

The second solution would be for the US and a few other countries in a similar condition to agree, among themselves, to new rules of the game, and then gradually have other countries join. There are enough countries in Latin America, the Anglo-Saxon economies, and perhaps a few Asian economies that could get together and make this kind of commitment. This option would be far more possible than the first one, but it could get complicated very quickly as you think about the role that Europe, India, or Japan would play.

The third possibility I call 'the bombshell'. You might remember that the 1933 London conference was basically torpedoed by FDR's refusal to commit to holding onto gold, and that basically broke up the global trading system. I would say that there is a possibility that the US does something like that again. The US holds the key to the whole system because it runs current account deficits that absorb roughly half of all the current account surpluses of the world. Why? Because of its high-quality financial markets, great governance, etc. So one thing the US can do is unilaterally refuse to play this role. Not through tariffs, that's a total waste of time, but by imposing capital controls, which they had until 1983. In this way, the US would unilaterally force the surplus countries into adjusting, but it would be quite destructive, particularly for surplus countries like Germany, Japan, China, or South Korea.

I'm not very optimistic. I think ultimately we will go down the way of unilateral adjustment

*Why don't you think raising tariffs is a possible solution?*

The accounting identity tells us that if you run a current account deficit, you must run a capital account surplus. We typically think of this relationship as the trade side driving the capital side, but we argue that's an obsolete idea of trade. In the past, the capital account would indeed adjust to imbalances in the trade account. For example, 150-

200 years ago England ran a surplus with respect to France because it was efficient at producing textiles, and this imbalance was financed by English banks and French gold transfers.

But that's not the world we live in today. Back then, 90% of all international capital transactions were trade finance. Today, trade finance is a fraction of the international capital flows, with capital flowing due to several other reasons such as reserve accumulation, speculation, currency arbitrage or capital flight. A fund manager today doesn't decide to export capital to the US to help fund its trade deficit, he exports capital based on the perceived risks and rewards, and basically half of the money ends up in the US. That means that the US has to run a current account deficit.

Now, how will tariffs affect the balance? Imagine that China exports one hundred dollars of savings to the United States, and that consequently China must run a one hundred dollar current account surplus, and the US must run a hundred dollar current account deficit. Now, let's say you put tariffs on Chinese goods. The Chinese surplus with the US will drop and the American deficit with China will drop. But the US still has to run a hundred dollar deficit and China still has to run a one hundred dollar surplus, so what will happen is that the bilateral imbalances will shift. This is what happened after the Trump tariffs on China. The US deficit with China did indeed contract, but the US deficit with the rest of the world expanded, exactly as it should. So if what's driving the imbalance is the capital flow, then there's no point trying to interrupt it through tariffs. It's much more efficient and much less damaging to force the adjustment on the capital side, for example prohibiting the export of unlimited amounts of unwanted capital into the US.

## CHANGING THE CHINESE DEVELOPMENT MODEL

*In the book you argue how initially Deng Xiaoping's challenge was to focus on liberalising the economy, but Post-Tiananmen the focus turned to increasing taxes to workers to ensure that investment needs were met. Is it possible for China to now reverse this and to move towards a consumption-driven development model?*

Again, all I'm doing is reviving an earlier and smarter economist. Albert Hirschman used to ask that question a lot. The important point he made is that there's no such thing as a good model or a bad model, there are only models that work under certain specific conditions. He pointed that whenever a development model stops working, countries must shift to a new one. However, they never do because the constituencies that benefited disproportionately from the original model become extremely powerful and they prevent the shift.

The Chinese model repressed the household share of GDP. It was more than 70% in the '80s and then it dropped to the point where today China has one of the lowest overall consumption shares of GDP in history. Now, is this a bad idea? Well, it depends. In



the 1980s China was unusually underinvested for its level of development; it had four airports in the entire country. So by constraining consumption (and the household share of GDP) the savings rate was forced up. Because it's a closed economy, all of those savings were forced into the banking system and poured into investment. In those days, China needed investments so badly that you didn't need a sophisticated process of identifying investment, so this growth model was exactly what it needed. And with such high levels of investment, the highest in history, China grew so rapidly that even with the suppression of consumption, household income grew quite quickly. China grew at 10%, while household income grew at 7%, which is great.

However, the model stops being useful when you've caught up to the level of investment that is appropriate for your level of development. The solution is really quite simple: increase the household income share. But that's really tough to do. The problem is that if this share were to increase, the share going to local elites and governments would decrease, and they're very powerful. In China, they came to this realisation around 2006–07. Premier Wen Jiabao gave a famous speech in 2007 pointing to China's huge imbalance problem and announcing that they would balance income within the economy. However, nothing was done to address it, and over the following five years the imbalances got worse.

To me, what's interesting is that around six months to a year after that famous speech, for the first time we started to see the phrase 'vested interests' in the Chinese press. Before that, there was no conflict between the elite and Beijing. But as soon as Beijing talked about rebalancing, we saw this huge conflict emerge. And they've had real trouble rebalancing.

*If this is all ultimately unsustainable, could it all suddenly come to a stop? Could we expect a sharp correction?*

I don't think we are going to have a crisis in China. The reason I say that is because a sudden stop or a crisis is really a balance sheet problem. You have mismatches between assets and liabilities. You have a tightening of your liabilities. You cannot liquidate your assets to serve your liabilities, and the whole thing collapses.

Now, if you look at the balance sheets in China, they are terribly mismatched. However, I've always argued that this won't cause a crisis because as long as the banking system is closed, which it is, and as long as the regulators are all-powerful and credible, which they are, they can restructure liabilities at will. The government can always step in to force a restructuring of the liabilities.

This doesn't mean they won't have a problem though. In my opinion, the problem of too much debt is that it always results in slower growth. Japan never really had a debt crisis, but instead had several decades of zero growth where it went from representing 17% of world GDP to 6%. The Soviet Union never had a debt crisis, and went from representing

15% to around 5%. Ultimately, I would argue that not having a crisis is better in the short term, but in the long term it may be worse economically (not politically). But China is more likely to follow the Japanese route than what happened, for example, to Brazil.

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# **CONTAINING THE NEW LEVIATHAN**



# Daron Acemođlu: The Great Divergence

Daron Acemođlu received his PhD from LSE in 1992, and since then he has been a Professor at the Massachusetts Institute of Technology. His research covers a wide range of topics, from political economy, to the sources of economic growth, to the roles of institutions in economic performance, to human capital, technology, and wage inequality.



His best-known book, *Why Nations Fail* (2012), co-written with James Robinson, builds on his academic work to argue that the success of a nation depends on the quality of its economic and political institutions. He has written four other books, the most recent of which is *The Narrow Corridor: States, Societies, and the Fate of Liberty* (2019), also written with James Robinson.

In an interview, James Robinson commented on Daron: “Most economists can be defined by their specialty or research focus, but not Daron. There is no category for him - he does everything, and he has a model for just about everything too. I don’t know where he finds the energy for all his fields of interest. He is relentless” (Willson 2010).

I interviewed Daron on 17 May 2020; you can watch our conversation [here](#) and listen to it [here](#).

## FAULT LINES

*A lot of your research has focused on how government performance and institutions affect the economy. As a researcher this must be an interesting moment for you. What have you learned?*

Well, this has been a distressing time for everybody, but it’s also been a time of soul searching for me. Just in September 2019, James Robinson and I published a new book, *The Narrow Corridor*, where we looked at why democratic governance, liberty, and societal involvement in politics are hard things to maintain. We also discussed some of the issues of state capacity, but now I realise that the situation is much worse than even the most negative reading of the book would suggest.

To put it bluntly, when historians and scholars talk about this era in thirty years, they will emphasise the colossal policy and institutional failures that both created the environment where the pandemic could do most damage, and also laid the ground for institutions in much of the world being completely unable to deal with the pandemic.

In sum, the fault lines that we tried to look at in *The Narrow Corridor* (a) were much worse than we thought, and (b) were hit by a shock that exploited them. I have in mind two fault lines in particular.

The first is inequality. I have always thought inequality creates social problems, but I had not seen how inequalities in access to public health could be so badly exploited by a shock of this sort. High death rates are strongly correlated with people of worse socioeconomic backgrounds, and quite a bit of the differences between, for example, Germany or Denmark and the US or the UK can be explained by differences in health inequalities.

Even more ominous, in my opinion, is that the pandemic hit the fault line created by the erosion of state capacity. The most jarring aspect of this is the Centers for Disease Control and Prevention, which is the first, second, and third line of defence in the US against pandemics and infectious diseases. This is an institution with an illustrious past, which regularly got full marks for how quickly it dealt with problems. It was at the head of public health measures even as recently as the Ebola crisis. This time it's been an unmitigated, colossal failure. This comes from the incompetence of the Trump administration combined with the erosion of state capacity and the demoralisation and disempowerment of institutions.

### **A CRITICAL JUNCTURE: THE GREAT INSTITUTIONAL DIVERGENCE?**

*Do you think populism really will emerge successful from this test in which they have done so badly?*

My thinking is, again, very coloured by what I wrote in the past (even though I recognise parts of it need to be changed). In *Why Nations Fail* we introduced the notion of a critical juncture: a big shock which enables institutional change. We argued that the specific direction of this change is determined by the coalitions that emerge from pre-existing balances, institutions, constraints, and luck. We are very much at a critical juncture, but I don't think we will see the same movement in every country, but instead divergent changes in institutions, human welfare, inequality, state power and so on. I see essentially four futures that are available to us.

1. One is to double down on what we have – ignore the problem and continue the erosion of institutions. There will be countries that go down that way. This path would just lay the scene for the next crisis, which will be an even more existential threat to democracy. We would probably see things that we never thought we would see in our lifetimes or in our children's lifetimes in terms of the collapse of institutions and a complete change in the trajectory of the West.
2. The second possibility is that we learn the wrong lessons and we emulate China – a 'China-light' strategy. In my view, authoritarianism is where China's failures originated from, but we could learn the wrong lesson and believe that it was at the heart of its success and accept that all we need is a more authoritarian government. However, if we try to emulate China by weakening civil society, democratic institutions, and liberty, we'll get something much worse than China, because China's success actually came from the competence of its bureaucracy embedded

- in the authoritarian structure, and not the authoritarianism itself. China's bureaucracy has a history of 2,500 years and parts of it, despite their subservience to the Communist Party, could have built quite a lot of expertise. But we're not going to do that, we'll just get the authoritarianism and will continue failing to understand the value of state capacity, expertise, and technical knowledge. The result would be more similar to what James and I called a 'paper Leviathan' in *The Narrow Corridor*.
3. The third is yet another dystopic outcome: corporations rise at the expense of the State. The state becomes so disqualified and in disrepute because of these failures that people turn to corporations. We give up our privacy and our protections and we subject ourselves to the dominance of a few companies. I think that is also not a future that many people would want, and that's why I think Europe has a very important leadership role there. Europe, despite its failures during the crisis, has been at the forefront of protecting privacy and antitrust policy. GDPR has failed, but it was a great idea as a reaffirmation of values.
  4. The fourth one is a future where we realise that we require a much better social safety net and expertise and that institutions have a lot of trust to earn. We need to increase the responsibilities of governments because we are dealing with globally complex problems, and the pandemic is not going to be the last one. But if this is going to work at all it will be by not only strengthening our state institutions, but by strengthening our democratic institutions at same time so they are on a par with these strengthened Leviathans. For example, before this crisis I was at the extreme of thinking privacy was important and that institutions like the NSA, CIA and the European equivalents should be reigned it. However, in the midst of this pandemic, I have no time for people who argue against tracing apps on the basis that it would be a privacy violation. That is exactly the wrong way to think about it; you must suspend all of these issues and deal with the pandemic. There is no other way, but you must do it together with a renewed and credible commitment to stronger institutional safeguards and stronger privacy rights once the crisis is over. And there is only way of doing that: by doubling down on democracy, strengthening society's commitment to get involved in politics, and keeping the next generation of politicians much more in check and on their tiptoes.

*This difference between your futures 2 and 4 is that in the latter the authoritarian Leviathan is one we can shrink back. This interests me a lot.*

It is not just about shrinking back. Some of it would be a shrink back and some of it would not. After the Great Depression and WWII we did not shrink the state; we controlled it and made sure that it used its powers (mostly) for things that we wanted, like a social safety net, social security, health care and so on.



## A STATE WHICH IS A SERVANT, NOT A MASTER

*I'm curious about this point you raise that, historically, when we've had crises the state has tended to grow. You wrote in *Why Nations Fail* that successful states are those that are accountable to their citizens and those that have limited powers. How do we grow the state and improve its effectiveness without having it interfere with private initiative?*

This exactly how we ended *The Narrow Corridor*, with a discussion of Hayek. Hayek was very concerned about the rise of the administrative state – the state that spends more, controls things, provides insurance, sets minimum wages... He was particularly worried about the *Beveridge Report* (Beveridge 1942), and a superficial reading of it might suggest that he was right; if you look at the rise of tax revenue relative to GDP after WWII and how it stayed flat in all countries, one may think so. But of course, Hayek was completely wrong. The welfare states that grew after WWII (a) did exactly what those populations wanted, and (b) underpin the most glorious period of economic growth in the West. We have never had anything like that in history, where about 30 countries grew for several decades at about 2–3% a year and with all parts of the income distribution benefitting from the growth.

These additional powers for the state were used for things that society wanted, and the growth took place because it all was accompanied with a deepening of democracy. Democratic politics got stronger, not weaker as a result. This is what we call the 'red queen effect' in the *Narrow Corridor*: the society runs as fast as the state so that it keeps up with it. That's what Hayek didn't see. The other mistake he made is that he was too wedded to a notion of liberty that only consisted in the state not interfering, ignoring the fact that liberty is hollow and meaningless when you're worried about losing your job or your children going hungry. The social safety net actually has a very important part in real effective liberty. We have to find a way of ensuring a greater responsibility for the state, while keeping it a servant to and not a master of society.

## MUSCULAR GLOBAL INSTITUTIONS

*There are reasons to doubt whether the old consensus of open markets, free capital movement and free movement of people will continue after the pandemic. Will we have as much freedom of movement? Should we start considering that production chains of 'strategic supplies' be localised?*

If globalisation is going to work, we need truly muscular, supranational institutions. At the same time, we have to take our hat off to the EU project because, given how badly WHO has done, it shows how difficult these things are. The fact that the EU has managed to do so many things together over the last several decades is an amazing achievement for humanity.

I think we have to rethink globalisation in other respects too. The global value chain – there is an argument to be made that it went for efficiency at the expense of everything else. But if you really factor in fragility, do you really want to create a global value chain, a supply chain that extends to tens of thousands of miles, just for a 2–3% cost savings? If one takes into account the fragility and all of the additional costs, including the carbon footprint, perhaps one may decide to trade off some cost savings in exchange for having a more unified supply chain. These are questions that we have to ask. Obviously, it doesn't mean an end to globalisation, but it means we have to apply a more holistic standard.

*What is that going to mean for developing countries, which have profited so much from globalisation?*

I think that era of very fast growth due to globalisation was already over because of automation. I don't think the classic path that South Korea and China pursued – starting at the very bottom of the value chain, exploiting your cheap labour for the production of labour-intensive products, and then graduating to higher levels – is feasible anymore. Automation has meant that parts of the value chain are done by specialised software, robots and other automation technologies, and these are never going to be outsourced to the same extent that they were in the '80s and the '90s. That was already going to change, so it's a good time to rethink this development model.

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# Wendy Carlin: The Third Pole

Wendy Carlin received her PhD from Oxford in 1987 and since then she has been a Professor at the University College of London. She is also an expert advisor at the UK's Office for Budget Responsibility.

Her research focuses on macroeconomics, the impact of institutions on economic performance, and the economics of transition in post-communist European countries. With David Soskice, she has co-authored three books on macroeconomics: *Macroeconomics and the Wage Bargain* (1990), *Macroeconomics: Imperfections, Institutions and Policies* (2006) and *Macroeconomics: Institutions, Instability and the Financial System* (2015).

In 2013, Wendy and a group of researchers from around the world founded Curriculum Open-access Resources in Economics (CORE), a not-for-profit organisation that creates and distributes open-access teaching materials on economics with the goal of reforming the way economics are taught. CORE publishes introductory textbooks that focus on the most pressing problems of our time, such as climate change, inequality, innovation, and the future of work. In 2017 the New Yorker wrote: "The members of the CORE team deserve credit for responding to the critics of economics without pandering to them". Wendy is currently the director of CORE, and in 2016 she was named a Commander of the British Empire (CBE) for her contributions to economics and public finance.

I interviewed Wendy on 7 June 2020; you can watch our conversation [here](#) and listen to it [here](#).



## ECONOMIC PARADIGMS

*You have written that economic “narratives” have changed in the past, and that they could change again (Carlin 2020). Could you explain how those narrative changes have happened and why you think we might be about to see one?*

There are precedents of major changes in the way people talk about how the economy works, how people relate the economy to their everyday life, and how they perceive their economic future. These things are what we mean by a narrative. Consider how Roosevelt talked about the disaster of the Great Depression. He said things like “heedless self-interest is bad economics” or the “freedom from want.” He was seeding a narrative connecting the way people behave and bad economics, and he was also introducing values: “the freedom from want.”

*You have used the term “paradigm” to refer to these narratives. Many people throw around the word paradigm but it’s often not clear what they mean. What’s the paradigm today?*

It is really important to try and put some flesh on the bones of this word that is indeed tossed around all the time. For example, people may point to a Keynesian social democratic paradigm, to a paradigm of classical liberalism or, more recently, to a neoliberal paradigm. But I think a helpful way of tying these to something concrete is to think in terms of four levels.

1. At the bottom, a paradigm has to rest on normative foundations and on **values**.
2. On top of that has to be some **economic theory**, that interacts with the values and reinforces them.
3. On top of that are the **policies**. That’s how the values are brought into the world with the help of economic theory.
4. Then there’s the **narrative**. How it is explained, how it is talked about, and how people come to understand it and connect it to their life.

Think of the classical liberal paradigm:

1. Starting at the bottom level, the **values** centre on things like equal dignity, anti-paternalistic liberty, and breaking away from the narrow parochialism and social hierarchies that had preceded that paradigm.
2. The **economic model** is the one that we always learn very well, the Smith-Mill model of comparative advantage, division of labour, specialisation...
3. The emblematic **policies** of the classical liberal paradigm are free trade, breaking up monopolies, repeal of the corn laws...
4. How do we talk about it? You can take it from Lewis Carroll’s *Alice’s Adventures in Wonderland*, in which Alice said to the queen: “it’s all done by everyone minding their own business”.

So you can move all the way from the underlying values to the vernacular of the everyday language.

*What about the Keynesian paradigm? What would the four levels be?*

1. At the normative foundations of the Keynesian paradigm, we have **values** of security and shared prosperity.

2. Those come together with an **economic model** that says countries don't achieve full employment naturally and that there's a role for an active government. This obviously matches Roosevelt's story earlier on.
3. The **policy** framework we know very well, but you couldn't have had the policy framework without the new theory of Keynes, with its new concept of aggregate demand.
4. And then it was talked about in terms of the need for the government to sustain aggregate demand in times of deep recession. Yet it's interesting that we've seen that very activity in spades all around the world in the last months. Because the Keynesian paradigm was displaced by the neoliberal one during the great stagflation [1973-82], the battle of ideas that has been taking place in the context of Covid has pushed the dial back towards Keynes.

*Is there an oscillation between these two paradigms? Is it A-B-A-B? Is the neoliberal paradigm similar to the classical paradigm, or were there substantial differences?*

It's not A-B-A-B, there are big differences.

1. The **values** underlying the neoliberal paradigm are, for example, the commitment to freedom from interference by the state.
2. These are complementary to an **economic model** different from the classical liberal one. Neoliberal models are centred on price-taking markets where everything relevant for economic interactions is covered by contracts, and where agents and governments are self-interested.
3. The emblematic **policies** of the neoliberal paradigm are things like school vouchers or negative income taxes.
4. The language is something like "a government that governs best, governs least".

That is the neoliberal story. You can see why, given the massively increased role of the state in the context of the pandemic, it is much under debate now.

*I don't see many economists arguing that during the crisis we should just let the market run its course. Is that what's new now? You've written in the past that it is not just about the dichotomy between states and markets (Bowles and Carlin 2020a).*

A lot of the discussion has been along the state–markets axis. There's a nice quote from *The Economist* that illustrates this: "Big government is needed to fight the pandemic. What matters is how it shrinks back again afterwards. [...] A pandemic government is not fit for everyday life" (*The Economist* 2020).

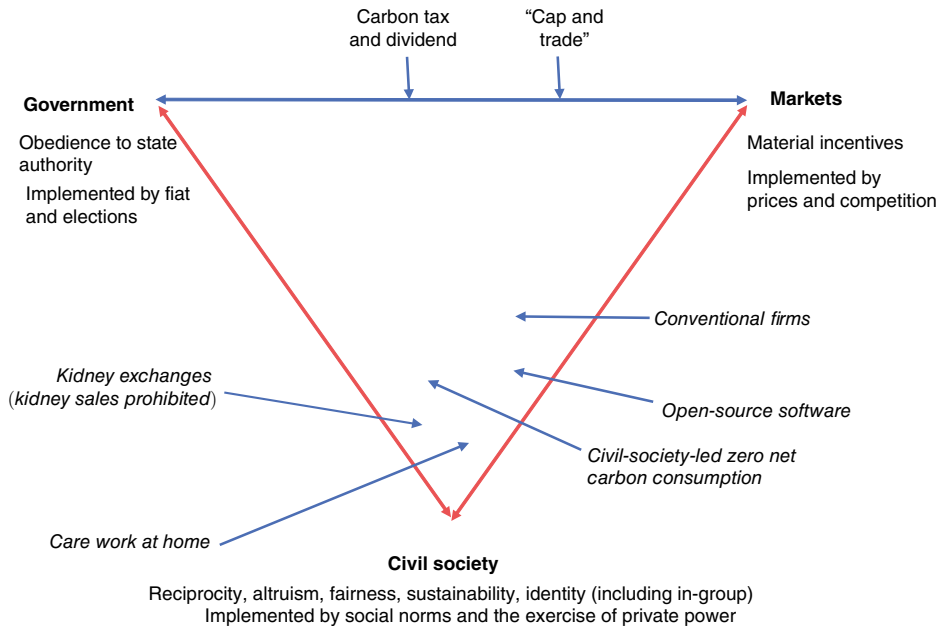
It's interesting to compare it to the *Financial Times* – they gave a different twist: “Radical reforms — reversing the prevailing policy direction of the last four decades — will need to be put on the table. Governments will have to accept a more active role in the economy. [...] Policies until recently considered eccentric, such as basic income and wealth taxes, will have to be in the mix” (*Financial Times* 2020).

Among those two organs of the economics establishment, there's a different sense of the balance between market and state, but they emphasise the state–market axis with only these two poles. However, this is not enough both for thinking about the pandemic, but also for thinking about the looming crisis of climate. These really push us to open up a richer space where we can insert a third pole.

### THE THIRD POLE

*The economists we have interviewed have two different explanations for the heterogeneity in response to the pandemic between different countries. Some attribute it to differences in state capabilities. Others say that society itself, the community, plays a key role. What is your view?*

With just two poles, a combination of compliance with government authority and well-designed market incentives is adequate to deal with a problem like a global pandemic or climate change. In work with Sam Bowles (Bowles and Carlin 2020b) we claim that that's not the case. The competence of the state and the excellent design for market mechanisms are insufficient – we need the third pole. We tend to prefer the term “civil society” rather than “community”, although people use both.



Source: Bowles and Carlin (2020b).

We argue that we have to invoke other motives for human action other than compliance with state authority and material incentives: reciprocity, altruism, fairness, sustainability, identity... Those motivations lie at this third pole. Actions around the third pole are implemented through social norms and through the exercise of private power, such as power within a firm for example. Those things are simply excluded from the market-government discussion. But, when we look across countries, and even within a country over time, we need to draw on these other motivations to understand how things are handled differently and the different outcomes during the pandemic.

Step outside Covid for a second and just think of the triangle. The triangle denotes a space where we place policies or institutions that are combinations of market, government and civil society. Consider for instance a kidney exchange. For moral reasons, you probably don't want to buy and sell kidneys, nor can you compel people to exchange them. So you're relying on motivations of altruism for them to happen, where someone who cares about a loved one who needs a kidney is prepared to give one of their kidneys to a stranger. It is a motivation based on caring for others and a willingness to make a contribution to a stock of kidneys available for transplant.

## RETHINKING ECONOMICS

*You make it now sound very fuzzy and warm, but all these motivations may also have a dark side, especially in terms of identity. We help those who are alike, but then potentially dislike those who are different. That makes us economists very uncomfortable; Akerlof and Kranton (2011) and others have been writing about this. We want to think of a world where people are reasonable and they are willing to trade. How do we reconcile these two views of community?*

This is a question probably for you in your role as a politician. As economists we need a framework that takes into account those questions and that enables us to incorporate these aspects of human behaviour into our modelling and our thinking. Unless we can take on those issues, there is no way that we can build a coherent new paradigm. A good Covid-related example is the mask question. In some countries there's a social norm to wear a mask whenever you have a cold or a cough because you want to protect others, but there are other countries where there's a notice on the outside of a shop saying, "if you're wearing a mask, you can't enter". That's identity.

*How does modern economics need to change to accommodate all these ideas you raise?*

I think modern economics has the goods, we just need to use them. By this I mean two recent breakthroughs in modern economics that are needed to create the new economic model that sits above the new values, and which could create a new paradigm. It's not there yet, but we should all be a part of this project.



The first element is information economics. As soon as you accept what was originally Hayek's (1945) point, which has been developed in the last few decades, that information is limited and local, then it must be the case that you cannot solve all problems through contracts. And as soon as you recognise that, you're going to have to use two tools: social norms and private power within organisations, so just like in your work, within companies.<sup>1</sup> You can't solve the problem between the owner and the manager with a contract, and you can't solve the problem between the manager and the worker with contracts. Those two aspects, which were expunged from economics during the height of Walrasian version of neoclassical economics, have been brought back by information economics.

The second is that we have had to step away from 'homo economicus'. It's a good model for shopping, but it's not a good model for many of the other problems that we need to analyse. This touches on the issue of identity we referred to before, which entails a much richer idea of what people are like. And this is where behavioural economics, obviously drawing a lot on psychology, has also given us many insights that allow us to help construct this new model.

*You have done a lot of thinking on how to reconceptualise the teaching of economics to include these new perspectives. Those of us who have been teaching for all our lives have endured the frustration of teaching an 18-year-old some calculus that's supposed to explain the world. Could you tell us a little bit about CORE and your experience trying to rethink the way economics is taught?*

To draw a thread back to the post-WWII and the post-Great Depression, that's another instance when we had a change in the way economics was taught. Take Paul Samuelson's very famous textbook (Samuelson 1948). He just changed the whole structure of his textbook, so that he sent supply and demand to the back of the book. It appears in Chapter 19 on page 447, and on page 457, he says: "well, that's all there is to supply and demand." He put all of the stuff focusing on addressing the big problem of the Great Depression, all of the theory that would mean it wouldn't happen again, at the front.

At CORE we have the same kind of thinking, where we try to focus on the big problems we confront now. For anyone who's teaching beginning students, an interesting exercise to do is to just ask them what they think are the big, most pressing problems that economists should be addressing. What do they say? Inequality, climate change, innovation, the future of work, financial instability, unemployment... These are the big topics. So what we've done in the project, with lots of researchers that have been involved, is to take these big questions – again, not shopping – as the subject of economics, and to teach economic models using information and behavioral economics from the outset as ways of gaining insight into these problems.

1 Interested readers can see Garicano and Rayo (2016) for a review of this literature.

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# Lucrezia Reichlin: Democratising economic policy

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Lucrezia Reichlin received her PhD from NYU in 1986, and since 2008 has been a Professor at the London Business School. Her research focuses on applied time series, business cycles and monetary policy. She pioneered 'now-casting', a set of econometric methods for making very short-term predictions. These methods are now widely used by central banks and by many in the private sector to make economic predictions.



Previously, she was Director of Research at the European Central Bank and held a number of academic positions, including Chair of the Scientific Council at the think tank Bruegel and Research Director of the Centre for Economic Policy Research. She writes a regular column for Italy's most read newspaper, *Il Corriere della Sera*, and is a regular contributor to *Project Syndicate*.

I interviewed Lucrezia on 8 May 2020; you can watch our conversation [here](#) and listen to it [here](#).

## THE ITALIAN CONUNDRUM

*You know the Italian economy extremely well. And you know that Italy has tried in some ways to be the “good child in this classroom”: Italy has had a better primary deficit compared to the Netherlands every year except for three in the last three decades. But the truth of the matter is that Italy hasn't grown. How worried should we be about Italy and its growth prospects?*

I've been worried about Italy for a long time, so if I was worried before the pandemic imagine now: debt is projected to be one hundred and sixty percent of GDP. Yet even if we meet optimistic scenarios and go back to the historical growth rate, this growth rate is still barely above zero.

Italy has done its homework in a sense that it has had to fight with its own demons. Since the early 90s Italy has lost competitiveness, but not for reasons related to the euro. It's a very complicated country which is very diverse and heterogeneous. Big sectors of the Italian economy never embraced globalisation, let alone Europe, but just the ability to compete in international markets. Companies are too small. We have strong, productive sectors in certain areas, but this is compensated by a very poor performance in others. We have a very weak and inefficient state, not just in terms of its judiciary, and this has been a tradition since the Italian unification. In sum, weak cohesion and weak social capital.

In a way, Europe had been appreciated as an external anchor to do reforms. Italy is not the only country to think this way, and it applies not just to doing reforms but also to achieving a European way of organising society; and when I say European, I mean northern European. But the external anchor has not been enough: integration does not necessarily favour convergence. It could do exactly the opposite.

If we have to rethink Europe, it is not just a matter of money, but a matter of thinking about the federal institutions we need to secure a process of convergence. For example, up to now the European construct has been based on the principle of subsidiarity, that we should only do the bare minimum together. I find the principle very limited, but these are the discussions that the Italians, at least the ones who are conscious of the importance of remaining in Europe, want to have. Unfortunately, the discussion is very chaotic now.

*If you are an Italian politician of our persuasion – liberal, pro-Europe, pro-globalisation – what is the promise you make to Italians right now?*

Well, what I've been writing in my regular column is that in a way, there is no way back. It is a terrible thing, but in a sense there is no way back.

We can focus on the euro, let's forget the EU. In today's global financial markets, I do not believe that having a flexible exchange rate is necessarily an advantage; the experience of emerging markets is very interesting from that point of view. Even countries with flexible exchange rates in the emerging world have not been protected from capital outflows linked to US monetary policy. Similarly, if Italy were a small and open economy on its own, it would not be insulated from German monetary policy, for example. It's a little bit of a fantasy to think that we can go back to the 80s where exchange rates were actually a tool for stabilisation.

The same applies to supply chains and the parts of globalisation which have to do more with trade. I don't see what Italy could be on its own, except perhaps becoming a colony of China, which seems to me very difficult geopolitically. Globalisation is in crisis, but this does not mean that it is in crisis regionally. In the moment in which we deglobalise, there is even more of a rationale for having a strong and cohesive regional power: Europe.

## HELICOPTER MONEY AND QUANTITATIVE EASING

*We are undertaking massive quantitative easing [QE] to avoid a deflationary trap, but what stops inflation expectations from becoming 'unanchored', as people start to believe that, eventually, money won't be worth anything? At some point you can't replace all the economic activity with money. A situation where everybody has the same nominal income that they used to have, but nothing gets produced, is not sustainable.*

In 2013, I had a piece on VoxEU summarising a conversation with Michael Woodford and Adair Turner exactly on this issue (Reichlin et al. 2019). It seems like the times were fantastic in 2013, but we were worrying about the same problems. They argued

for helicopter money on the basis that there was no inflation, and that it would be the most efficient way to avoid a deflationary trap, so the discussion was whether there is any distinction between helicopter money and quantitative easing if it remains semi-permanent (nobody believes that central bank balance sheets are going to decrease anytime soon).

The difference is that helicopter money is a permanent creation of money or a tax cut which is communicated to be permanent so that so-called Ricardian equivalence doesn't kick in. Consequently, you can design these programmes so that their effects are exactly equivalent: helicopter money would be some form of continued QE and you would have a fiscal policy which mimics what the central bank is doing.

So, the question is ultimately about institutions: who should do it? I believe that it is up to the fiscal authorities to ensure democratic legitimacy. Central banks have a very important role, especially during crises, as liquidity providers, lender of last resort, act as market makers... all the things that they have learned how to do in these last ten years. But I would hate a world which is governed by Lagarde, Draghi, Trichet, or Powell, or whoever, because I believe in democracy.

## **BALANCE BETWEEN THE STATE AND SOCIETY: A STATE THAT IS A FRIEND OF THE CITIZENS**

*Do you think that we are moving towards a world where the state will be more involved in economic activity? Are we going to see more efforts to combat inequality, more regulation, or more economic nationalism?*

I could give you a normative and positive answer. There are so many different forms of capitalism that maybe we should not call it 'capitalism'. The questions to me are whether our societies are going to become more or less unequal, how much social insurance they going to provide, or whether they will be able to cope with the big problems of our time.

I'm thinking of climate, for example, as one of the big problems. There are reasons to believe that the situation will become worse and not better, but I'm an optimist. I want to keep on thinking on the designs for avoiding the worst.

Globalisation, as it is, doesn't work. It has to be governed with new institutions. Our discussion in Europe is a microcosm of the discussion that should happen at the global level. For example, think of what's happening with poorer countries facing default. We need to be creative in the way in which we deal with those kinds of problems. Another example is the problem of refugees, which themselves are related to problems of local wars and climate. All of these questions require global answers, but cooperation won't work because the world does not have a single big brother like the US anymore; it is becoming multipolar.

I don't want to say banalities, but Europe has an incredible opportunity. It is the best place in the world. It is the only place in the world where people's rights are protected and where there is a reasonable welfare state. This is something that we need to protect. We cannot go back to what Europe was before, not only in terms of our federal institution, but also at the national level. Our societies have balkanised due to a sequence of bad shocks: 2008, 2011, and now this. We need to rethink social inclusion and it is inevitable that the state will have a bigger role as social insurer.

Coming from a country in which the state has not been always particularly efficient, I am worried about this leading to crony capitalism, so we have to think about how to do things together to ensure that Europe protects these values and has a project which involves all member states. We also have to think of best practices, and about how Europe can become a hub for rethinking about the state that is a friend of the citizens, if you wish. It is going to be a very difficult path, because we will be constrained by pre-existing divisions in our society. The biggest challenge of our time is climate, so maybe we could move the conversation forward and build the new consensus around this.

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# Carol Propper: Targets and terror

Carol Propper received her PhD from the University of York in 1988. She is currently Professor of Economics at Imperial College Business School and a co-director of the Centre for Social Exclusion at the LSE. Previously she was at the University of Bristol.



As one of the leading health economists in the world, her research has focused on how to improve the quality of healthcare and the link between economic circumstances and health, on the impact of incentives on the quality of health care delivery and health system productivity, on the design and consequences of incentives within the public sector, and on the boundary between the state and private markets.

In the past, Carol has been an advisor to the British government and its National Health Service on several occasions. Currently she is the President of the Royal Economic Society and is member of French President Emmanuel Macron's expert commission on major economic challenges. In 2020, she was named a Dame Commander of the British Empire (DBE) for her contributions to economic policy and public health.

I interviewed Carol on 10 January 2021; you can watch our conversation [here](#) and listen to it [here](#).

## THE LONG-TERM HEALTH CONSEQUENCES OF COVID

*We've been doing lots of interviews, but we haven't had a chance to talk to somebody focused on health systems. You have been very vocal about the health and human capital costs of lockdowns. What are their long-term health consequences?*

Our recent work essentially draws attention to the fact that when you have a lockdown, you have an economic shock, and that economic shock has an impact on longer-term health (Banks et al. 2020). There's a large literature on the impact of economic recessions on later health, and it shows that the impact of recessions can be quite big and long-lasting. Some work that colleagues and I did for the UK showed that recessions can lead to large increases in people with chronic and ongoing health issues, particularly in the area of mental health (Janke et al. 2020). But that isn't really factored in when people do the calculus of what the current impact of a lockdown is, it's all in the future.

But our work not only shows that the impact is in the future, it also shows that the impact is worse in places that already have bad health. So it has an additional impact on inequality – for example, because not working is associated with lower mental health. All of those costs have to be set against the current health gain. This health gain is treating people



who have Covid, and within that, protecting the health system from being overwhelmed. Initially, we had lockdowns in order to protect health systems from being overwhelmed. As the pandemic goes on and we learn more, we need to be more worried about what the impact of lockdowns on future health will be.

*Give us a sense of this magnitude. You studied the 2008 crisis. What's the kind of impact on health and how many people are affected?*

The 2008 recession was smaller than the Covid recession, and we estimated that it led to about half a million people more having chronic health conditions, particularly mental health conditions, but also other conditions like respiratory conditions and musculoskeletal conditions that are associated with not working and with being out of the labour market. But we think it's particularly going to affect mental health. We think the impact of the 2008 recession on mental health was quite big, and the Covid impact might be twice that size. So possibly up to a million more people in Britain suffering from mental health conditions.

*Indeed, we have seen a lot of anecdotal evidence about health issues, particularly mental health and children's health from being out of school. Can we start to get a sense of the magnitude of these effects?*

I think it's still too early to tell. It's clear that there are particularly vulnerable groups. And as you pointed out, one of them is young parents with young children. We know women have been very affected by this pandemic, ending up doing more childcare while trying to work from home. We also know that a lot of young women work in industries that have been particularly hit by the pandemic. So we think there's probably going to be a knock-on effect on both their health and the health of their children.

There are also some odd features of a pandemic. For example, normally when you have a recession, it affects some people and not others, whereas when everyone is under lockdown, it might be that some of the mental health problems are ameliorated by the fact that everyone is locked down.

One of my colleagues from Imperial, David Miles, has done a very crude back-of-the-envelope calculation of the Covid lives saved through lockdowns compared to the other costs, and his analysis suggests that the lockdowns will cause much bigger costs than the immediate cost of the lives that are lost due to Covid (Miles et al. 2020). It's quite an early analysis, and I don't think we'll know for another two or three years as the effects rumble through and we see whether people can shift to other sectors to get employment or whether there are some sectors that have just shed workers and those workers have trouble finding new jobs.

## HEALTHCARE SYSTEMS AFTER THE PANDEMIC

*What have we learned from the pandemic about the capabilities of health systems, and what should change over the medium term?*

Health systems have been affected differentially across the world, depending a bit on how those health systems are paid for. For example, in the case of the NHS, the government switched very quickly and stopped paying hospitals for activity, given that they were cancelling all kinds of activity. The government also poured money into buying PPE and other equipment. However, they didn't organise it very well, so there were large shortages of equipment at the beginning. That's probably because they were not very well prepared for this kind of pandemic. And for the NHS, that's partly because it runs very close to full capacity all of the time. When you have a pandemic, you can see this leads to real problems.

Any of the European healthcare systems that run close to full capacity, like the UK or Italy or Spain, have had problems. But there are other health systems that have done even worse. In the US, hospitals make their money out of non-emergency care. They cross-subsidise between emergency care, which is loss-making, and elective care. Covid has meant that they've cancelled all of that elective care like hip and knee replacements. So many hospitals in the US that were already in financial trouble are now just disappearing. And there are areas, particularly rural areas, that are going to lose their healthcare facilities completely. That at least has not happened in European systems.

*One obvious lesson that you point to is that we need to have excess capacity in our healthcare systems. What other key lessons should we take into account to avoid these dramatic changes in the allocation of services and attention that can hurt the people with non-immediate Covid-related needs, or pandemic-related needs?*

Indeed, the key point is that you need excess capacity, not just in terms of physical capacity but also in terms of staff. As the world becomes more globally integrated, we're going to get more of these pandemics. So I think in order to have resilient healthcare systems, first of all you need capacity.

Secondly, you need some way to ensure an effective local response. What the pandemic has shown is that places like Germany that have very strong local public health and a very strong federal and regional organisation have managed to mobilise resources much better and have managed to do things like track and trace much better. Centralised systems won't help you during a pandemic because the pandemic will affect different areas and populations quite differently. It's very hard for the centre to make all of these decisions. And I think England is a classic example of an overcentralised system. The Spanish system, for example, is much better because the provinces have more autonomy, and this ultimately builds in safety nets.

*A lot of your work has focused on competition. How does competition improve efficiency and how do we introduce competition in public health systems?*

The literature on competition and efficiency is really a literature about competition and quality. There's quite a lot of evidence now that suggests that when you have hospitals or doctors who compete with each other, it raises the quality of care, whether that be family doctors competing with each other or hospitals competing with each other. We've shown this quite extensively for the UK (Gaynor et al. 2013, Bloom et al. 2015), but there's also evidence on this from the US and from countries like Norway and Sweden. Introducing competition within public sector bodies is really about designing the financial mechanisms of your system so that you reward better performance. That's linked to the big drive to pay institutions in the public sector for the quality of the service they provide.

The other piece that you need for competition is for choice to be exercised by either patients or by buyers. If you are locked into a particular supplier, either as an insurer or as a patient, you can't exercise any choices that you need to in order for competition to work. The only issue that can arise is if you have a private health system like in the US, you might want more monopolised insurance in order to have more equal bargaining between them. But that doesn't tend to occur in systems other than the US, where there's been a big trend towards consolidation. But even in the US system, I think there's a general belief that allowing more competition and allowing more choice, particularly through financial mechanisms, is beneficial for the quality of healthcare.

*In your research you point out that one aspect through which competition intervenes is the effect of competition on the quality of management. How does this work in practice?*

That's a great question. We know that competition leads to better outcomes. We also know that better management leads to better outcomes, and that competition is associated with better management. What we don't know, partly because economists aren't perhaps the people to answer this question, is exactly how product market competition translates into better management. You can think about channels through which it does, but I don't think we fully understand that link yet. And it's obviously a fascinating link, particularly for the public sector, of exactly what you should do in terms of management to improve and respond to competition.

*My wife is a tertiary hospital physician, a paediatrician on rare illnesses, and she often complains that these incentives to compete and monitor everything prevent the time-intensive patients, who need a lot of care with lots of specialists, from actually receiving the care they need. This kind of argument would be the negative view of your point on competition. How can we prevent measurement and targeting from decreasing the quality of care? You have also done a lot of work on this, coining the fantastic term of "targets and terror" (Propper et al. 2008).*

Firstly, let me say that no professionals like being monitored. Secondly, many professionals are dedicated to improving the quality of care that they provide. Thirdly, many professional doctors are extremely competitive in terms of benchmarking their performance against other people. The trick here is to make sure that the outcomes that you're measuring are the outcomes they believe in, and not the outcomes that are imposed on them.

A quite nice example from the targets and terror work are waiting times. The British government was very keen to bring down waiting lists. Waiting lists are a feature of the British system because we don't pay for healthcare at the point of demand, and a lot of clinicians anecdotally said that waiting lists would make them take the less urgent patients who were waiting a long time before they took those who were more urgent. We actually studied that, and we found no evidence that people were inappropriately treating people who have minor illnesses faster than those with major illnesses.

It was also clear that having waiting time targets led to a big reduction in waiting times. We were able to do that by comparing England, which had waiting times, with Scotland, which did not. In Scotland, waiting times actually rose and the government ended up hiding the target by designating a new category of list. Eventually this got discovered and they stopped doing that, but it's all about designing those targets with professionals. We know that from the literature on pay-for-performance, and indeed on using targets. It's really important that professional deliverers of the service are involved and believe in that process.

*You argue for making these targets public, but I remember the study in New York where surgeons who were faced with report cards on survival rates chose to operate on the easier patients to boost their numbers (Burack et al. 1999). Designing these objectives in a proper way is a tricky thing to do.*

It's very tricky. But I think we have a long history now of being very aware that there can be some negative targets. The example you give is of a very early system in which outcomes were made public. Doctors who had bad outcomes either moved to another state where their outcomes were not monitored, or indeed they picked patients for whom it would be easier to achieve those outcomes. But we do know quite a lot about the technicalities of designing such systems and have learned to look out for bad behaviour that would harm patients.

The science of economics says there's no such thing as a free lunch. Make a change somewhere and you're going to have a change somewhere else. What you want to do is have a policy that net improves things, but there will always be some loss. That's what it means for there to be no such thing as a free lunch.

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# Raffaella Sadun: Management for the recovery

Raffaella Sadun received her PhD from LSE in 2008, and since then she has been a Professor at Harvard Business School.

Raffaella's research focuses on the economics of productivity, management and organisational structure in both the private and public sector. She is among the founders of the [World Management Survey](#), the first cross-country and cross-industry dataset measuring the quality of management practices, and the [Executive Time Use Study](#), an international data collection effort to analyse how corporate leaders organise their working time. She was the winner of the McKinsey Award for the best article in the *Harvard Business Review* in 2018.



During the pandemic, she was appointed a member of the Italian's government taskforce against the coronavirus.

I interviewed Raffaella on 27 December 2020; you can watch our conversation [here](#) and listen to it [here](#).

*You have studied what kind of companies are more resilient to the shock of the pandemic. How do management and management practices affect responses to the pandemic?*

This work is based on interviews with about 50 companies all based around the world (Sadun et al. 2020). When we were running this project around May and April of 2020, we saw that it was very important to delve systematically into the case studies of organisations that were at the frontier of the response to the pandemic. The large-scale data is being collected now, but these interviews gave us the insight that these top-performing organisations were able to reopen primarily through investments in intangible capital.

The first kind of such intangible capital was organisational agility. For example, many companies had to move quickly to e-commerce as a result of the lockdowns, and to do that they needed some intangible capabilities within the firm that would allow it to do things like redeploying workers or finding new information quickly and using it to their advantage.

Another type of intangible capital that we found striking was the ability to effectively communicate with the workforce. We all started working from home within a matter of days. So, it was interesting to see how they made the transition. For many of us, working from home meant managing multiple responsibilities at the same time, so one common narrative that emerged was firms' ability to show support and get close to the employee,

understanding that there was a process of adjustment and that employees were not going to be monitored 24 hours a day just because they were working on their computer. Organisation helped their employees adjust, and to learn new skills and adapt.

From a strategic standpoint, these are all the things that have to do with the organisation. But then, of course, there is also your ability to redefine who you are as a company. What's your value proposition and why should clients come to you? Understanding where you stand relative to your competitor and how you can keep your customers was something important.

As economists, we were able to catch things that we typically don't measure at scale, but the results were reassuring because they gave us some hope that there was some margin of adjustment even in the middle of this huge crisis.

*Do you think these shocks will be long-lasting? Or do you think, like your colleague Pol Antràs, that supply chains are quite robust and that we will see a fast recovery in the way businesses operate once this nightmare is over?*

Companies' responses have been very heterogeneous. The organisations that were at the frontier had something special about them even prior to the pandemic. My sense is that this pandemic might be a force that accelerates that dynamic of polarisation of outcomes across companies. Polarisation might be reflected in both the resilience of the supply chain and the productivity of the firms themselves. Chiara Criscuolo has shown that that the productivity of companies had started to diverge even before the pandemic (Andrews et al. 2016). Some companies were able to improve their productivity and continue doing so over time, while others lagged behind.

*This research that our colleague Chiara Criscuolo and others have been conducting was pretty shocking. Indeed, we have seen increasing performance differences between companies that, from the outside, don't look very different. Do we have an explanation for why this is happening?*

One story might be technology, because of the economies of scale in certain technological investments. It may be very hard for an organisation to catch up with the companies that have made these investments or have committed to a certain type of approach, for example towards e-commerce, early on. This might be true specifically in some sectors. Retail is one of the primary examples where these technological investments and economies of scale have played an important role.

Another piece is that learning accumulates. A company might start with learning how to use a technology, but then you might also learn how to codify new knowledge that is created inside the company and redeploy that knowledge in other aspects of the firm. And as you know, all of these complementary investments magnify an initial productivity differential.

One of the nicest examples of this is a study by Michela Giorcelli of early managerial training that was part of the Marshall Plan (Giorcelli 2018, Bianchi and Giorcelli 2021). She was able to study how companies performed after being exposed to pretty intense managerial training, and she showed that the productivity effects accumulate over time, and rather explosively to the point that when you see them the first time you have a hard time believing their magnitude.

But then you start understanding that improving in one side of the company, as I said with technology, you go to HR, you go to marketing, and then this virtual cycle starts to kick in.

*It would seem that the same way this programme was included in the Marshall Plan, this would be a very good way to spend the European recovery money.*

Absolutely. I don't understand why we're not doing it already. It may not be as fancy and shiny as building a new bridge, but all of the existing evidence shows that this productivity and managerial training is a low-cost way of unlocking productivity gains. It would also be particularly helpful for small and medium-sized enterprises. I teach at Harvard Business School, so I am biased here, but you don't need to send people to Harvard Business School. Put the entrepreneurs together, have some entrepreneurs figure it out and teach the other entrepreneurs. I think at the very least, we should try and evaluate what happens if you do that.

*A second aspect of management that you've been looking at has been public sector management, and you've focused a lot on healthcare systems. What are the lessons about healthcare management that have been important in handling the pandemic?*

We know what happens inside hospitals in terms of organisation. For example, for clinicians the ability to monitor what is happening, to pick up and discuss problems, and sort of use this Toyota-like continuous improvement approach, matters a lot. Hospitals that excel in that area, in that domain of processes, tend to have better clinical performance. We know that this is an association. I don't think that we have causal evidence at scale right now. We know of organisations like the Virginia Mason Hospital in the US, for example, that have completely been converted to lean and quality of care that outperform other hospitals.

In terms of the pandemic, we are collecting data. I think what we will know in the next year or so what type of practices have helped hospitals overcome this crisis. But if you look at the case studies that are emerging – for example, the Lodi Hospital in Italy, which was one of the areas that was hit by the pandemic early on with a tsunami of cases – you find that one of the key practices is the ability to reorganise your human capital. They realised that they were short-staffed so, briefed by the military, they created teams. They adopted lots of the techniques that the military deploys in emergency situations; they proactively sought out the military and brought them in.



*When there is so little competition, particularly when it's public sector, but even in private sector hospitals, we could expect heterogeneity to persist much more. If a hospital isn't doing very well, it can continue not doing well for decades and nobody might notice. What are the mechanisms that lead hospitals to become better and to learn? Is it just that some hospitals are lucky and get good managers?*

In the research that we did with John Van Reenen, Nick Bloom and Renata Lemos (2018), where we looked at this heterogeneity in management practices across hospitals, we found that human capital was a very important factor. When the hospitals had this combination of clinicians trained in managerial degrees, not necessarily MBAs, they tended to have better management practices and also better clinical outcomes. Managerial training may be an avenue to improve hospital quality and I personally tend to believe, on the basis of the research that I've done, that these middle layers might be more effective than the top layers.

*In the past you have looked at management practices in schools (Bloom et al. 2015). What are the basic principles that seem to matter there? Are they the same principles as in other organisations?*

We were surprised because when we did this analysis in schools, we found that similar principles that appear to be important in manufacturing and in healthcare also matter. This goes back to the ability to monitor, communicate, think about problems proactively and manage the workforce well. We found lots of variation in schools too, even within the same country. That tells you that schools, if you like, are not entirely determined by the type of institutional settings in which they operate. Second, where we could measure these value-added outcomes, which is the gold standard in education research, we again found an association between better management and better student outcomes.

But we don't underestimate how complicated it would be to really change the way in which schools are managed and organised. In fact, if you look at the evaluations and experimental evidence that is emerging in schools, they show that there is tremendous inertia. Recently there was an evaluation of a top-down intervention in India, for example, that tried to improve the way in which schools were assessed and monitored and found very little evidence of outcomes. And again, I think it's this idea that perhaps we underestimate how difficult it is for organisations to internalise and implement better management practices. You almost need a cult or some sort of religious belief that measuring what happens is really important for how well students fare or how well our clinicians fare.

*It's not just hanging the targets on the wall, right? You have to get people to internalise it. What other key principles would you want them to internalise? Measuring is important. What else?*

I think it's measuring and also making sure that measurement captures problems. Second, there has to be a mindset that tells you that if you are on the shop floor, for example, you can tell me what's working and what's not working. One issue is that hierarchical relationships impede this level of communication. In part, it's because there is a risk that if you suggest improvements that effectively lead to greater productivity, you may think about how your job is going to change as a consequence.

There is also a second type of consideration: the idea of hiring for merit or being able to recognise who is really a valuable worker, and using incentives – monetary and non-monetary incentives – appropriately. Removing people if needed. These are all things that complement a lot of the management practices on the operational side too. And they're really hard to do.

*One of the most fascinating things that has happened with the pandemic is that technological change seems to have accelerated. Based on what you have seen in companies, to what extent is this technological change here to stay?*

We have tried to measure this (DeFilippis et al. 2020). We worked with a large email provider and measured what happened to business communications in terms of emails and meetings before and after lockdowns. We used that dataset, which has three million data points. Obviously, we don't know what's in the data for confidentiality reasons. But at least you could see how communication varies once everybody has to communicate virtually. And what you see is a 20% increase in meetings. We are all obviously spending our time interacting virtually; that's obvious. The span of the working day has increased, by an hour in general. One obvious reason is that we are replacing these extemporaneous interactions virtually.

The implications are fascinating. For people who do their work by themselves and don't need to really coordinate or communicate with other individuals in the company or outside the company, this shift in communication probably means more flexibility, more ability to go for a jog or take care of whatever you have to take care of and then log in. But managers mostly coordinate information flows. And so to me, this increase that we've seen in these forms of communication imply that, having lost the physical locus of interactions – the office – we are trying to regain touch and coordination through these virtual means. The translation is probably not going to be one-to-one; there is a lot that gets lost and in fact, there is a lot of knowledge that is typically not codified. And companies are trying to shift their employees to codify as much as they can, so that they can have synchronous check-ins and so forth. My sense is that the risk is that all the parts that have to do with creativity and chatter (and interrupting each other) get lost.

*I'm thinking of a paper by Nick Bloom, where they hired consultants for the treatment group of companies and got some improvements, but over time a lot of these changes dissipated and didn't stay (Bloom et al. 2020). How do we integrate all of these ideas from your research on management practices? What is the right way to approach this organisational change? How do we make sure that it stays and sticks?*

Why is this so hard? It's hard because simultaneously you need strong guidance and some sort of top-level vision of where you want the organisation to go. There is a lot of B.S. being said about superstar CEOs and visionaries and all that, but at the end of the day, that matters, because you're asking people to change their routines. You can't fully control or compensate people for every action, so I think that is necessary. The issue and the trick, the art, comes when you go from this top-down vision to letting people find their own way. So it's this combination of having strong guidance and, instead of ordering people, letting them understand that it's in their best interest to follow your guidance and to change their practice. These things take time and take a lot of effort. It's communication. It's consistency. Sometimes it happens, but it's a mixture of being in control and understanding when not to be in control too.

I have done several case studies where these things happen. One of them was a hospital in New York that was completely turned around through an electronic dashboard (Huckman et al. 2016). It resembles your study on ICT in police departments (Garicano and Heaton 2010). The CEO created a massive dashboard that, in principle, would allow him to micromanage and observe what everybody else was doing. The trick was to put this dashboard in the hands of the middle managers, and let the middle managers use it for their own interest. Over time, there was an adoption of a technology and also massive improvements in the clinical standards of the hospital and so forth. That's one example of this combination of really strong direction from the top, with the understanding of what needs to happen for people to follow your guidance.

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# **PROMOTING INNOVATION AND CURBING THE POWER OF DIGITAL GIANTS**



# Philippe Aghion: Is 'cutthroat' capitalism more innovative?

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Philippe Aghion received his PhD from Harvard in 1987 and now is a Professor at the College de France, at INSEAD and at the London School of Economics. He is also a fellow of the Econometric Society and of the American Academy of Arts and Sciences.



His research studies the causes of economic growth and the theory of contracts. With Peter Howitt, he pioneered new growth models based on Schumpeter's process of creative destruction. These were subsequently used to analyse the design of growth policies and the role of the state in the growth process. He has also written extensively about innovation, contracts, organisational theory, and labour markets. He has written fourteen books, but much of this work is summarised in his books *Endogenous Growth Theory* (1998), *The Economics of Growth* (2009), *Competition and Growth* (2006) and *The Power of Creative Destruction* (2021).

Philippe has been very active in the French economic policy debates, and in 2017 was a key contributor to the economic policy platform of Emmanuel Macron. I have personally been particularly influenced by his work on the impact of education on economic growth, as well as his work on the governance of universities in the US versus Europe (Aghion et al. 2009).

I interviewed Philippe on 24 May 2020; you can watch our conversation [here](#) and listen to it [here](#).

## IS IT TIME FOR A NEW INDUSTRIAL POLICY?

*After all of the volatility that we saw with supply chains during the central months of the crisis, would you advise European governments to put together a concerted effort to ensure that certain value chains remain at home?*

I would emphasise that the way to reconstruct value chains is not by forcing firms to stop manufacturing abroad, but by innovating so as to create new sources of added value in our countries. I emphasise creation more than destruction: we regain control through innovative investment and industry creation.

*There is a risk that if we raise barriers and try to bring the value chains home, many countries, including developing ones who have benefitted from the last wave of globalisation, will lose their ability to grow.*



Exactly. And we don't want that. I believe in globalisation, in division of labour, and in comparative advantages. I've done work recently with Marc Melitz and other co-authors where we showed that, by enlarging potential market sizes, having access to export markets fosters innovation (Aghion et al. 2018). I don't believe we should put up barriers. We should defend fair competition and focus on investment. Germany and the Scandinavian countries are good examples. They never put up entry barriers, they invested.

*Do we need a determined industrial policy?*

I think we need what we call 'horizontal' and 'vertical' policies. Horizontal measures are those that improve competitiveness: labour market flexibility, investment in education, in knowledge and training. All of these measures are important to achieve a high quality-to-price ratio.

But on top of these it's good to have, in some sectors in particular, some sectoral state aid that is implemented smartly and without hurting competition. Competition has to be preserved, but we know that it is possible to provide state aid in ways that do not confer all the aid to one firm. It is possible to reconcile industrial policy and competition policy (Aghion et al. 2015). This balance can be done at a national level or at a European level, in particular by creating European equivalents to the Biomedical Advanced Research and Development Authority (BARDA) and the Defense Advanced Research Projects Agency (DARPA) in the US.

*What are the key investments you would like to see?*

First, at the horizontal level countries like France have to invest in skills, social dialogue, R&D and fundamental research. Those measures that would facilitate the creation of firms.

At the vertical level I would see three sectors for the state to have a larger role: digital, health and climate change. On these I would encourage the establishment of mission-oriented agencies. The famous example is the DARPA, which the US established during the Cold War. I am in favour of doing a European DARPA, not just a French one. Not having the EU budget, several countries should pool their budget together and announce a DARPA in those three areas: a DARPA for energy; a DARPA for digital; and a DARPA for health. What is interesting about these is that they attain a mixture of bottom-up and top-down management. Funding comes top down from the defence ministry, but team leaders have complete autonomy to form teams, work with other research labs, industries, and so on. Their only constraint is that they have a clear mission.

These kinds of missions are particularly effective for achieving progress in what we call “tough technologies” – where the basic research has been done but the applications have not. We need to combine resources and have clearly defined missions: putting a man in space in two years, that was challenge that they had in the US. A vaccine for Covid is such a clear challenge.<sup>1</sup>

## THE TRADE-OFF BETWEEN CREATIVE DESTRUCTION AND INSURANCE

*The US and Europe had different approaches to deal with unemployment during the crisis. The US basically let everybody get fired and then increased unemployment subsidies. In contrast, Europe focused on keeping employer–employee relationships, and mainly deployed Kurzarbeit-type schemes through which governments have financed the salaries of workers. This difference is just one example of how the US and Europe choose different trade-offs between creative destruction and protection. How do you compare the approaches?*

In recent work we have taken OECD health statistics, US Census Bureau unemployment series, and IMF forecasts (Aghion et al. 2020b). Using IMF unemployment forecasts and extrapolating from the relationship between unemployment and poverty and health coverage (which we know quite well for the period 2008 to 2018), you get striking results. In Germany we can expect no changes in health coverage. Everybody is equal. The unemployment rate goes up a bit with Covid, but not much. Whereas the unemployment rate in the US goes up a lot and, because health coverage is partly associated with having a job, you see a loss of insurance in the US. Analogously, the percentage at risk of poverty in the US rises sharply.

On the other hand, the US dominates Europe in terms of innovation. Indeed, measured by the numbers of patent applications or of top-cited patents, the US is doing much better (Aghion et al. 2021).

While some argue that weak social services are the price to pay to have an innovative economy. The view is that a country can choose either to be protective or to be “cut-throat” (Acemoglu et al. 2012). Instead, in our recent book, *The Power of Creative Destruction*, my co-authors and I argue that we can aim at a capitalist system which is as innovative as the US system, and as protective as the European system.

<sup>1</sup> After the interview was recorded, Philippe Aghion and co-authors proposed the creation of a European Biomedical Advanced Research and Development Authority that would be a part of Horizon Europe and would centralise R&D spending, but would also ensure that the decision-making process is science-based and transparent (Aghion et al. 2020a).

TABLE 1 AVERAGE ANNUAL PATENTS, 2010-2017

Country	Patent applications per million inhabitants	Number of top 5% patents per citation	Percent of top 5% patents per citation
Germany	617.1	107.5	0.4%
Denmark	87.4	0.0	0.0%
Norway	316.4	0.3	0.0%
Sweden	129.8	0.3	0.0%
United States	1,186.4	32,678.0	71.7%
France	231.1	5.9	0.0%

Source: Aghion et al. (2020b).

Sweden, for example, passed tax and labour market reforms and as a result fostered innovation, yet they kept their social system. Another example is the ‘flexicurity’ unemployment insurance system in Denmark. It is very generous, and it ensures training while people are looking for a new job. With these measures you ensure people better, but at the same time you make creative destruction work better. *There is no zero-sum game between growth and creative destruction on one hand and protection on the other.* Social mobility is another example. If you improve social mobility, you have more innovation, so I don’t believe the idea that you have to have either inequality or innovation. My feeling is that you could very well reconcile the two.

## SOCIETY, CHEATING AND COERCION

*To understand the different responses of countries to the pandemic, many have emphasised two dimensions. Do certain states perform better because they are more effective? Or does the effectiveness of the response depend on the trust that societies have in their governments?*

A very interesting paper by Sam Bowles and Wendy Carlin (2020) which I highly recommend on civil society and Covid points to the complementarity between the market (the enterprises), the state, and civil society in fighting pandemics.<sup>2</sup> In *The Power of Creative Destruction*, we push this idea further and argue that the triangle between firms, the state, and civil society is key to ensuring sustainable and inclusive growth, and to averting Schumpeter’s own prediction that capitalism would fail because yesterday’s

<sup>2</sup> Readers can refer to the interview with Wendy Carlin for an explanation of the triangle.

innovators would turn into conglomerates that would use their accumulated rents to collude with the state and thereby prevent any subsequent innovation. Civil society is key to prevent such collusion.

Consider the first pillar, namely, private firms and the market. Private firms lie at the heart of the innovation process, and we saw that again this year with the vaccines. The Soviet Union innovated only in defence because that's the only area where they were competing with the US. Without the US as their competitor they would not have innovated at all. You need market incentives.

The second pillar of the triangle is the government. We saw the role governments played in our European countries to protect citizens and firms against the big macroeconomic shock induced by the pandemic. More generally, we need the state as an insurer. But we also need the state as an investor – an investor in education, health, and in the knowledge economy. Private firms under *laissez faire* tend to underinvest in research and private individuals tend to underinvest in education because they don't internalise the positive externality of those investments on the growth process of the economy as a whole. So, we need the government as an investor.

The third pillar is civil society. As Carlin and Bowles explains, this includes social norms and values like reciprocity. If you look at South Korea, for example, containing the virus required a lot of self-discipline, civic spirit, and social norms. Those play an important role in rapidly enforcing large-scale social distancing. It allowed these countries to rapidly stop the spread of the virus. One example of how France neglected the impact of civil society is that it infantilised its population, treating them as if they were pupils who were constantly trying to behave badly. As a result, many French citizens in metropolitan areas bypassed restrictions, and so you had this bad back-and-forth between aggressive rules and further cheating.

*Cheating justifies more coercion, which justifies more cheating.* The key then is to move away from this bad equilibrium and into a good equilibrium, where you trust people and they behave well. I did work with Yann Algan, Pierre Cahuc and Andrei Shleifer on regulation and distrust (Aghion et al. 2010). With a cross-country regression, we showed that in countries where the government regulates more, there tends to be more distrust in governments and in other citizens. And this is true for specific parts of societies, including the regulation of employment, of minimum wages, of court formalism. If you regulate too much you prevent trust-building, and it leads to a vicious circle: people don't see the need to build trust relationships, but because people don't build trust relationships there is a demand for regulation. We show the causality goes both ways. It is very interesting to compare France and Germany. In France, 70% don't trust their government; in Germany, the number is 52% (Sciences Po 2020).

Beyond this relationship of trust, countries need an active civil society to make sure that the government will not abuse its powers. At the beginning of the crisis there was a famous study from Imperial College in London that had a very pessimistic prediction of

200,000 dead in the UK in the first wave. However, this model did not factor civil society in its simulation. The model did not account for people taking measures driven by their care for others, and if you do too much coercion you inhibit this.

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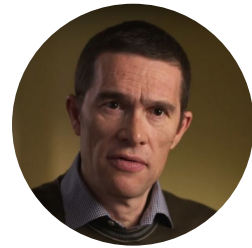
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# John Van Reenen: The Lost Einsteins

John Van Reenen received his PhD from UCL in 1993. He has been a Professor at University College London, at the London School of Economics and at the Massachusetts Institute of Technology. In 2020 he returned to LSE, where he is the head of the university's programme on Innovation and Diffusion.



John's research has ranged widely, but two areas are particularly notable: the causes and consequences of innovation, including the effects of technological innovation on economic growth and labour markets; and on the impact of management practices on productivity.

He has been a senior policy advisor to 10 Downing Street, the UK Secretary of State for Health and the European Commission. In 2013 he published *Investing for Prosperity: A Manifesto for Growth* (with Tim Besley). In 2016, he was named an Officer of the British Empire (CBE) for his contributions to economics and public policy.

I interviewed John on 10 January 2021; you can watch our conversation [here](#) and listen to it [here](#).

## LOST EINSTEINS

*In some of your recent work, you have studied who becomes an inventor and have proposed the idea of “lost Einsteins” (Bell et al. 2019). Could you tell us about it?*

We were very interested in who becomes an inventor and who doesn't. Ultimately, we are interested in what we can do to stimulate growth, and one of the best ways to do that is by improving the supply of inventors, both in terms of quantity and quality. What we decided to look at was where innovators and inventors come from: what their backgrounds were, how they grow up...

To identify inventors, we looked at those who had been granted a patent, and so we took every American whose name was on a patent since 1996 to today. We had millions of inventors, and then we matched them to their backgrounds. We had information from the IRS, so we knew what income they had. We also knew their parent's income, their gender and, for a subsample, their ethnicity.

We were able to lay out some very important facts that I think people hadn't realised before. People know that, for example, women are much less likely to be inventors than men are. They also know that African Americans are less likely to be inventors than white people are. But we also found that how rich your parents were is a strong predictor

about whether you are going to grow up to be an inventor or not. If you were born in the top 1%, you are ten times more likely to grow up an inventor than if your parents were in the bottom 50%. It's an order of magnitude higher.

Many people may push back and argue that it's a genetic thing – perhaps people pass on their brilliance to their kids. However, for a subsample of the data we were able to see the scores people got in school as kids. We knew their maths and English grades when they were eight. It's true that the kids who were born to wealthier families tend to have better scores than the kids from poor families, but that only explained a very small amount of the difference. Most of that difference wasn't to do with the ability or talent of the kids, but came from whether or not kids were exposed to the possibility of being an inventor when they were growing up. For example, the amount of innovation in the area where you lived when you were growing up was very strongly correlated with whether you became an inventor, even if you'd moved away and even if you were exposed to a very narrow technology class.

When we compared kids who had moved into the area when they were young to those that did so when they were a little bit older, it really looked as if this exposure effect was important. An illustration: I went to a pretty low-quality school, and there no one even thought about the idea of us growing up to be an inventor or an entrepreneur. Most kids wouldn't think of going to university and dropped out when they were 16. So just this idea of being exposed is very important in driving whether you're an inventor or not, and it has a lot of policy implications.

*From a policy perspective, this is not very encouraging. We cannot just spread inventors in every neighbourhood to make sure everybody's exposed to the idea that they can invent. How do we solve these kinds of problems? We cannot solve them by just giving money to the schools that need it. You have to present kids with role models and an environment.*

There's a whole bunch of things. Firstly, on schooling we could try and find some of the talented kids who show some aptitude at an early age for maths or for science, and then do things within the school to try and support them. For example, David Card at Berkeley has this fantastic study of what happened when they tried to separate high-achiever students into 'tracks' in lower-income schools (Card and Giuliano 2014). They found that for most of these kids, it didn't make much difference. But for the minority kids who happened to get into this track, it made an enormous difference. So the idea of trying to identify at early stages the kids with potential, and giving them some extra help, resources and encouragement, could be really powerful. And it's not expensive. In Card and Guiliano's study, the cost was pretty low.

Another set of policies could be programmes like the American SMART<sup>1</sup> grants, which gave kids from disadvantaged backgrounds who are thinking of studying STEM \$10,000 to study. This was actually abolished by Congress, but it would be a part of the package of policies I've been trying to encourage.

A third set of policies could focus on sending role models around schools. There's a lot of interesting work being done by foundations, for example the Conrad Foundation, which tries to send people around schools to just talk to kids from disadvantaged backgrounds. That was one of the things they did in my school. I remember there was a working-class girl who had gone to Oxford, and she gave a talk that served as a bit of an inspiration for us that maybe we could also go to a good university.

Another aspect is having competitions. The Lemelson Foundation, for example, has entrepreneurship and invention competitions that kids can enter for various prizes.

Because these are not programmes typically thought of as innovation policies, they are not studied and evaluated in the way tax or welfare programmes are evaluated. We need to do a lot of work to see what works and what doesn't. But the wonderful thing with these supply-side policies to increase the quality and quantity of inventors is that they are not only good for equity and social justice, because you're getting discriminated kids in, but they are also good for growth.

## ARE IDEAS RUNNING OUT?

*This takes us straight into the second idea of yours that I wanted to discuss: that innovation is getting harder over time, and that ideas are getting harder to find. What's going on? Did we already pick all the low-hanging fruit?*

The basic idea is that innovation is not just about how many machines or people you throw at it, but about what you do with those people and those machines. It's about ideas, and the source of ideas is people innovating, being researchers and coming up with those ideas. The problem that we have is that we've been increasing the number of people researching in wealthy countries and in other places like China enormously. However, the rate of economic and productivity growth hasn't risen, while the basic endogenous growth theory says that it should have. We have had some growth, but it hasn't been as much as we would have thought.

One striking example is the semiconductor industry. According to Moore's Law, you should be able to basically double the number of transistors you get within each silicon chip every 18 months to two years. This has been more or less true, with the semiconductor industry achieving productivity growth of about 35% per year for a few decades. However, the amount of research which has gone into producing that rate of growth has gone up

1 National Science and Mathematics Access to Retain Talent.



by a factor of eighteen. Since about the early 1970s we've had this 18-fold increase in researchers, but productivity growth has stayed the same. You see this pattern not only in the semiconductor industry, but across the whole economy. We looked at healthcare, cancer treatments, and crops, where we can measure these things carefully (Bloom et al. 2020); we can get the outputs and inputs across the US economy as a whole. And you see the same kind of pattern.

There are lots of reasons why that could be. The most obvious one is that ideas are subject to diminishing returns, just like everything else. As academics we know that it takes longer and longer for someone to read all the papers and books to get up to the frontier. People may be spending longer and longer in graduate school because the amount of knowledge is much higher. The teams of scientists are larger, so it's often harder to communicate. In one way this answer is unsurprising, but it is a challenge because it means that if we want to enjoy the rates of growth that we've gotten used to, then we have to put in more effort. We have been doing that. But it also means that if we start reducing those resources, growth is going to fall substantially.

If you look at the amount of money the government gives towards research and development in America, it has collapsed. It was about 1.9% of GDP in the mid-60s, and now it's about 0.7%. People often take from our paper that we should be putting less into research because we are getting less returns from it, but in fact it's the opposite. If you want to reinvigorate growth, we must think of ways to get more efficiency out of our research, but we also have to invest substantial amounts of money. The amount of money we put into research is small compared to the amount of money we put into other things. The US the government puts 0.7% of GDP into R&D, while it puts 18% into healthcare. I'm not saying it should reduce healthcare, but the orders of magnitude are hugely different.

*Your argument makes me think of an informal argument that Bob Gordon has been making. His view is that it may look like things are changing a lot, we now have the internet, email and Twitter. But in fact, while information production activities are improving, the actually big technological changes – from internal combustion engine to airplanes, to televisions, to radios, to electricity and to antibiotics – happened at the end of the 19th century and the start of the 20th century. All of these big ideas are relatively old. To oversimplify, he argues maybe all the big things have already been invented.*

I've discussed this with Bob over the years, his book is fantastic by the way – it has lots of case studies of specific industries (Gordon 2017). He argues we are still reaping the benefits of the Second Industrial Revolution, but that it's dying out. There is some essential truth in what he's saying. I agree that ideas are becoming harder to find. I also agree that we have a certain illusion that everything is new, sparkling and amazing. Yet indoor plumbing is actually amazing – I remember that when my grandparents got plumbing in their house in Liverpool. It was a big improvement over the outdoor toilet, and I am not sure whether Facebook is as good as that.

But it is not totally illusory. These recent innovations do things which improve our lives on average. Having computers has enabled us to do things that we would not have dreamt of years ago, like communicating over long distances face-to-face. There are lots of genuine innovations that bring genuine productivity growth.

I'm also not convinced that we've had all the best ideas. One example would be artificial intelligence. We made really important advances in this area, from self-driving cars to reading X-rays. Of course, a pushback would be to point out that we can't see them in the productivity numbers – the well-known slowdown since the mid-1970s in productivity growth, where, apart from a burst in the late 90s with the internet, productivity growth has significantly lagged the levels between 1945 and 1975. But my view coincides a bit with what Chad Syverson and Erik Brynjolfsson have been arguing (Brynjolfsson et al. 2017). Just like the Second Industrial Revolution that Bob focused on, there is a big time lag between inventing things and learning how to use them most effectively in new products. The classic example would be electricity. I think this is what is starting to happen with AI and some types of robotics. For example, advances in synthetic biology can potentially be used to clean oceans or to make new types of food without meat.

But it takes a while. You've got to explore and experiment, and you need management and organisational practices to change in order to make the best use of these. I think there is hope and I don't think that all the good ideas have been plucked from the tree yet. I am not sure the breakthroughs will be as big as some in Silicon Valley or in MIT are saying. I am not so convinced that we are approaching a singularity after which machines will build machines and we will be able to sit around eating grapes on the clouds. But I do think that these types of inventions have a good chance of getting us back to more sustainable productivity growth.

*What is your sense about the impact of the pandemic on innovation? Do you think that we may take leaps forward that otherwise would have taken decades to adopt? Are we going to reap any positive results from this nightmare?*

It's a fascinating question. Covid is clearly an awful and horrible shock. The economic downturn and the massive uncertainty will depress demand for firms to invest in R&D and in new technologies. However, I see two potential silver linings.

One is that often crises are opportunities to do things that you weren't doing before. When you're selling lots of goods, you do things that cost money but save time. But when you're in a downturn, you've got more time on your hands, so you maybe do things which cost you a lot of time but save money. This is sometimes called the pitstop theory, and there may be something to it: recessions are a time when you can invest more in rethinking your whole business model. I've been very impressed with one of our local restaurants,

almost overnight they used the fact that they had a supply chain of fresh produce to turn themselves into a fresh produce grocery store. This is a small innovation, but there is a bigger picture where negative shocks can cause you to do things.

The second, linked, point is that the Covid shock may lead us to new equilibriums. Before Covid there had been small moves towards a whole set of things like working from home, but the shock has shifted people quickly into a new equilibrium. Normally it'd be very difficult to coordinate everybody if some people worked from home and some didn't, but once everybody works from home, you have to make the shift and invest in platforms like Zoom, online conference, things like group calendars... So it forced a lot of firms to do that, which is costly. But it was something which in some sense would have been more efficient if everybody did it already, it only pushed us to that new equilibrium.

I think even when Covid goes, those investments in software platforms and experimentation in new ways of working are going to persist. There is this nice paper from our old place in the Centre for Economic Performance of LSE where a group of researchers looked at what happened when there was a tube strike (Larcom et al. 2015). The researchers found that when there was a strike, people couldn't catch the underground to go to work and they started finding new routes to do so. When the tube strike finished, a lot of them carried on with the new routes. Why? They just never made the investment until they had the push to do so.

So I think that's the silver lining. Because it's a big negative shock, there are some ways in which the shock has stimulated innovation. There's a little bit of survey evidence that I've seen that suggests there has been some greater innovation in the Covid period than we might have expected.

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# Fiona Scott Morton: What should we do about big tech?

Fiona Scott Morton received her PhD from MIT in 1994. She has been a Professor at Stanford University and at the University of Chicago, and since then at the Yale School of Management. Fiona is also the founder and Director of the Thurman Arnold Project, Yale's competition research centre.



Her research focuses on industrial organisation and particularly in the area of the empirics of competition. She has published studies on a range of industries, from magazines, to shipping, to pharmaceuticals, to internet retailing. Currently her focus has turned to healthcare markets and the economics of antitrust.

During the Obama administration, Fiona served as the Deputy Assistant Attorney General for Economics Analysis (Chief Economist) at the Antitrust Division of the US Department of Justice. Today, Fiona is one of the leading voices in favour of antitrust policy against social media companies, and her research, which we discussed in our interview, was widely influential in leading the US Department of Justice to sue Google and Facebook for violating antitrust laws in October 2020 and December 2020, respectively. She is a Senior Consultant at Charles River Associates and has had a varied set of clients including Amazon and Apple (she has not consulted for any of the companies mentioned in this interview).

I interviewed Fiona on 6 June 2020; you can watch our conversation [here](#) and listen to it [here](#).

## THE ANTITRUST CASE AGAINST FACEBOOK

*You have recently written a couple of very influential papers on the growing concentration in the social media industry. In a recent Financial Times article, you claimed: "It's like having the old AT&T regulated Monopoly back again, only it is not regulated" (Financial Times 2020). I wanted to start with Facebook. What's wrong with it? What's the antitrust case against it?*

As far as I can tell from the available evidence, they have taken deliberate steps over the years to eliminate potential and nascent competitors. The way a social media network works is that you want to be on the network with your friends. This entails that having an existing network is a big barrier to entry and a competitive advantage, so it takes quite a bit of a push to get people off a network and onto another one. People have to go together with their friends, so as a result, new networks have to have a compelling value proposition.

What we see from the past history of Facebook is that it did things like use an app, Onavo, and other means to find competitors that were starting to grow, and either buy them or squash them. Sometimes they bought them, like Instagram and WhatsApp. In other occasions, especially with applications operating on the Facebook platform such as Vine, they squashed them. With these, Facebook was able to use its control over APIs and compatibility with the network to cut off those apps and therefore make them irrelevant. In this way, they avoided competing head-to-head with potential entrants who would have created choice for users and choice for advertisers.

*In one of your recent papers you refer to them as “dark patterns, skullduggery, and other misleading and fraudulent practices” (Scott Morton and Dinielli 2020a). Can you give us some examples?*

What we mean by a dark pattern is, for example, when you’d like to unenroll from something and you go to the site of the provider and you look for the place that says “unenroll”. Maybe you have to go to “manage your account”, and inside “manage your account” there’s maybe some payments or another choice you have to make. Then, to manage to unenroll, you might have to go through three or four windows and it’s not clearly labelled and you have to find the small downward arrow, and then eventually you hit “unenroll” and then another window comes up. “Are you sure you want to unenroll?” And you have to click again. You might have to click many times to get out of this subscription, and research has shown that consumers give up so that you don’t get as many people unenrolling as would like to. People just say, “I’ll do this tomorrow or next week”, and then a year later they’re still enrolled

*People who oppose your view may argue that consumers are getting a good deal. After all, they’re not paying. What’s the harm being done?*

Let’s remember what economists always say: there’s no such thing as a free lunch. When you interact on Facebook you give them your data and your attention for them to sell to advertisers, so you want to think of it as a barter transaction. If I give you six apples and you give me four oranges, I may not pay any money, but it still might be that my six apples are worth six oranges and you’re giving me four. If I’m giving you a lot of data in the form of apples and you’re giving me service in the form of oranges, maybe I should be getting more services. Maybe I should be getting a payment each month as well as the free service because my data is very valuable. We’re not going to know that until there’s competition over the consumer’s attention.

In a world where there’s competition for places to put ads, the advertisers would also receive lower prices. When advertisers have to pay for advertising per click, market power creates a higher marginal cost of acquiring a customer. As a result, the price of the product that the consumer pays is going to reflect this higher marginal cost, so consumers also pay for the lack of competition in advertising through the cost of goods and services.

Another harm relates to content providers and publishers. Because Facebook is a monopolist, content providers and publishers are being harmed because they likely receive a lower than competitive remuneration for their content. Further, if news sites get paid less for their news, they will not have as many reporters and won't deliver as good quality news. If the site that gives recipes and cooking tips doesn't have as much ad revenue, they won't have as many recipes and their photographs will not be as good quality. Content on the internet is a major way that consumers benefit from the internet, and this benefit is reduced when Google and Facebook have market power over payments for content.

Lastly, there's always the issue of privacy. How much do consumers really want Facebook knowing all that they do and then selling it to others?

*There are concerns about the manipulation of the political discourse and fake news. Is that something that you believe would be lessened by competition as well?*

I do. The ad-supported business model wants the consumer to stay online for a long time, because the more minutes she's online, the more ads she sees. How do these platforms achieve that? By showing consumers arousing and sensationalist things that will make them stay longer than something truthful and useful, but a bit dull, like the local school board meeting. If you let a machine-learning algorithm loose in these platforms, it will discover that people click more on this kind of content, and therefore the platform will deliver more of it. This is really a quality degradation that I don't want myself exposed to and I don't want my children exposed to. If there were more platforms and there were more choice, there may be platforms focused on providing an environment safe for children and providing news formatted in a particular way and authorised by particular sources. That would be a place I would rather go to and I would rather my family went to.

*What remedies can we think of? Mark Zuckerberg is an expert at pretending that he hadn't realised how cleverly devious his model was and at promising to correct it.*

There are remedies that you can achieve through an antitrust case, such as unwinding those past mergers. That is perfectly possible and might be a helpful remedy. My own view is that what we really need to do is think about social media as being the modern telephone network. Back in the day, when the telephone was the way we interacted at a personal level, we had a network that was interconnected with everybody. You didn't have a phone system in one corner of your country and another separate one in another corner. The wireless handsets that we now enjoy work the same way: we can all talk to each other even if you have Vodafone and I have Orange or somebody else has T-Mobile. So I think that the most useful remedy to add to the normal antitrust mix would be *mandatory interoperability*.

Building on the example of the network that I described before, one that's very safe and only has certain kinds of news, I should be able to have an account with it and yet send friend requests to my aunt who uses Facebook. Her posts would show up on my network



just the way an AT&T phone can call my Verizon phone. Ultimately, my aunt would see that there's a really clean, nice network out there that she could go to while keeping all of her friends, and she might choose to leave also. That commercial pressure on Mark Zuckerberg is possibly a very effective way to have him decide whether he's going to be the platform for the neo-Nazis or the platform for mothers.

*How feasible is it to impose this public utility model?*

Let me point out that I would not call what I described a public utility, but of course you could regulate a few different ways. Europe already has calls to study the kinds of regulations that are necessary, and Europe could have this as a regulation and simply adopt it and be finished. In the United States, if the Federal Trade Commission were to bring a case against Facebook, it could design a remedy that would include divestitures, mandatory interoperability, and where the government would set up a standards committee to make a format for exchanging text, photographs and videos across platforms.

## THE ANTITRUST CASE AGAINST GOOGLE

*You have also published a case against Google (Scott Morton and Dinielli 2020b). There the case is harder from the perspective of public opinion. We all like Google Maps and our Gmail, and don't feel as attacked as we do by Facebook. In which way has Google abused their market power?*

After Google invented their very good search engine, they set forth on a journey to impose exclusive contracts on nearly all sources of traffic. Those exclusive contracts were with portals and wireless carriers like Verizon, and then with the iPhone and other handset makers, so that for example Bing could not get onto those sources of traffic, except if the user took steps to load Bing. After that, Google launched Android and required all handset makers and wireless carriers to again put Google Search as the default on the front page of that handset. Those exclusive contracts shut out Bing and other rivals from getting a quantity of searches. And if you don't have enough quantity of searches, you can't build quality of searches, because you need to learn what consumers are looking for. So in my view those exclusive contracts are not competition on the merits. Google forced everybody who needed Android to use their search engine, and because of the importance of the quantity of searches, this eventually made their engine better.

*Some of these aspects seem similar to Microsoft's practices at the end of the 90s to set Internet Explorer as the default browser.*

I agree, there is a similarity. Today if you want to enter the search engine market you not only need a search engine but you also need a mobile operating system together. As a part of its contracts with handset makers, Google also prevented them from launching their own operating system based on the open-source Android. If they launched their own operating system, they would have to stop selling Google Android handsets. So an

original equipment manufacturer would have to go from 100% Google Android to 100% own Android. And of course, that's super risky – your own operating system might not perform as expected, etc. So that's another way to raise barriers to entry.

And then Google took the advantage in search and leveraged that into ad display. My paper talks about how Google bought different properties in the display stack and again used this exclusivity tactic. “You cannot buy ads on YouTube, unless you use our digital display ad technology.” Google will set it up so that rivals are disadvantaged, to the point where, for 90% of cases, Google is operating the publisher's technology that decides which ads go where; but further, Google also operates the technology that advertisers use to put out ads. And in between those two, Google uses a set of technologies to coordinate auctions, and the bids and asks for the publishing of ads, and then chooses how to set the price. So Google is (1) operating for the buyer, (2) operating for the seller, (3) designing the rules of the auction and (4) running the auction.

You would never agree to buying and selling stocks like this. No one would sell a stock who realises that an entity is both their agent, also working for the buyer, also designing the auction, and lastly delivering the money. In this world Google is going to get a large take, so that if an advertiser pays one euro, The New York Times might only get 30 cents, and Google might get the remaining 70. This distribution of surplus is likely when you have a monopoly profit-maximising firm doing everything.

## THE ANTI-COMPETITIVE POWER OF INSTITUTIONAL INVESTORS

*Recently you have done a lot of work on the anti-competitive power of institutional investors (Posner et al. 2017, Boller and Scott Morton 2019), in which you worry about the fact that we are seeing increasingly large participations from a couple of large institutional investors in multiple companies in the same sectors. What's your diagnosis of what's going on?*

What's going on is troubling. In Europe, the sovereign wealth funds and individual investors are also often common owners, but I will illustrate it with a US example. Here we have only four big domestic airlines, and the biggest mutual funds – Vanguard, State Street, BlackRock and State Street and Warren Buffett's Berkshire Hathaway – own 5% of each of them. So 20–25% of each of those big four airlines is held by the same five top investors. Now, if those airlines softened competition against each other, competed a little less hard, they would earn more profits and those owners would benefit from those higher profits. So if these owners engage in corporate governance – talk to management, participate on the board or vote, or have analysts following the company who provide strategic advice – they are going to have an incentive to try to get those firms to compete less hard.

These owners have both an incentive and an ability to do this because of their corporate governance function. No one is going to listen to me if I just have 100 shares in American Airlines, but they're going to listen to the head of Fidelity or BlackRock. So you have this very worrying situation, where we might not be getting as strong competition in these industries as we otherwise would because they share these owners and the owners have the same goal: less competition.

What we propose in the paper is a policy by the antitrust authorities based on the idea that, in oligopolies, large owners should only be able to own one company. If you're a little investor we don't care what you do, but if you're big you have to pick one. You can invest a lot in American, but then you can't hold Southwest or Delta or United. This will mean that you will care greatly about American's performance and you're not going to be incentivising American to hold back and not compete against Southwest.

So that's the idea of that proposal. But I do think that this area needs a lot more study because we don't fully know if we have a competition problem and channel through which the problem flows. But if it's a problem, it's a very large problem. Common owners are spread throughout the entire economy, and the big funds have grown a lot in the US, where now institutional investors hold more than 70% of the stock market. For any CEO, that's a big share of owners.

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# **COMBATTING GLOBAL WARMING**



# Nicholas Stern: Zero-emissions growth

Nicholas Stern received his PhD from Oxford in 1971. He has taught at Oxford, at Warwick and at the London School of Economics. At LSE Nick is also the Chairman of the Grantham Research Institute on Climate Change and the Environment and head of the India Observatory at the London School of Economics.



Nick has been the Chief Economist of the European Bank for Reconstruction and Development and a Senior Vice President at the World Bank. He has also been the head of the UK Government Economic Service and was the second Permanent Secretary to the Treasury. In 2007, Nick was named a Baron and since then he has also been a member of the House of Lords as an independent (cross-bencher).

He has chaired the development of numerous reports which have shaped the global climate change debate, including the *Stern Review on the Economics of Climate Change* (2006), which was an essential contribution that put economics at the centre of the climate change debate. Nick has written several books, the most recent of which is *Why are We Waiting? The Logic, Urgency and Promise of Tackling Climate Change* (2015).

I interviewed Nick on 24 January 2021; you can watch our conversation [here](#) and listen to it [here](#).

## THE FISCAL MULTIPLIER OF CLIMATE INVESTMENTS: HOW TO INVEST FOR THE RECOVERY

*It is rare that economists write a piece of paper that actually changes the world, but I think the Review that you produced 15 years ago (Stern 2006) has a real claim to having done so. If you look back from where we were then, do you think we're making good progress? What would the Nick Stern from 15 years ago have said?*

The assessment of the last 15 years has to be mixed. We have not shown the urgency of action that we should have. Even though they're close to plateauing, emissions are still rising around the world. So in terms of the simple practicality of cutting emissions, we've moved too slowly, and that has increased the danger that we're in. We're already over one degree centigrade higher in average global surface temperature relative to the benchmark at the end of the 19th century. And we're seeing the signs of that. But there are some positives, particularly in recent years where we've seen extraordinary movement in technology and a clear commitment in countries around the world to get to the net-zero target by 2050.

*In Europe many people are scared that if we push the green agenda excessively, it is going to cost us too much in terms of jobs. We saw the backlash that Macron faced when he pushed carbon pricing. In Spain and Germany people are worried that, since they do not have expertise in electric cars and since electric cars don't need as many parts, the green transition will destroy their automotive industries. However, you seem to have a much more optimistic vision. Why?*

I'm very optimistic about what we can do, but I worry very much about what we will do, because whilst the gains are potentially very large, it does need radical change. That can be badly done, so as economists we must think through what it means to make these investments, how they can be incentivised and how the change can be managed. Radical change is exactly that – radical. It involves dislocation that has to be managed.

The first step is to recognise where we need to go, how it can be attractive, and to see what's involved in achieving this change. Many of the activities that are relevant to the green transitions are already cheaper using the zero-carbon methods. Even without a carbon price and without subsidies, and even on the back of rather ordinary and perhaps mediocre policies, we have seen innovations that, for example, have made the electricity supply from renewable sources cheaper than those from fossil fuels (taking into account the cost of storage, grid management and so on).

So the first thing is a vision of where we need to go, and to go on driving down those costs. Electric vehicles are also much more efficient. You mentioned they've got fewer parts. Well, that's good – it's a more efficient product. They don't have radiators which throw away heat, with the internal combustion engine being fundamentally inefficient.

But at the same time the management of this change is crucial. A big part of the story is not simply the policies and incentives, such as carbon pricing, the ban on the sale of internal combustion engine vehicles, or zero emissions zones in cities. All of these are necessary, but it is key to think about managing the dislocation. Some countries are starting to do this well, with my friends in Spain for example being very focused on this issue. For another example, the European Investment Bank has been giving very sensible support in Poland and elsewhere on retraining, because after all, the dislocation in large measure is about investing in people and investing in places. This is a social safety net, but the more positive story is to invest in people and to invest in the places in which more people are dislocated so that there can be strong localised effects.

For another example, in the area of carbon taxation it is very important to use the revenue to prioritise poorer groups. On balance, the rich consume more energy than the poor, by quite a lot. It may go down as a fraction of income, but they still consume more energy than poor people. So there will be revenue there which can be redistributed towards poor people. It should be possible to make virtually everybody at the moment better off using the revenue from carbon prices. That should be a strong priority.

We also have to remember that poorer people tend to buy fewer new cars than the richer people. So the switch to electric vehicles will take time to reach the used car market. In many areas the distributional implications are quite complicated, but they should be front and centre of policy. You shouldn't announce a policy and then fix the distribution side later.

The prize is enormous. It's where the innovation frontier is moving, with so many of these innovations just being more efficient and cleaner. And of course, the fundamental gain of the reduction of the immense risk that is climate change.

*You have written with Stiglitz and other co-authors that climate change is a bit like Covid, but in slow motion (Hepburn et al. 2020). It's not a very reassuring metaphor. What have we learned from the Covid pandemic for our fight against climate change?*

I think we've learned that acting strongly and acting together is fundamental. The countries that acted strongly as a society, like New Zealand, South Korea and Taiwan, did so by working together. We also see that the drive out of the terrible recession can also drive towards a much better future. Simply in Keynesian multiplier terms, to invest strongly now will give us big increases in GDP. The IMF reckons that multipliers round the world are currently around 2.7, so if we invested quickly another couple of percentage points of GDP, we would see GDP bounce back by over five percentage points. If we can sustain that and can push up investment in the next decade by two or three percentage points higher than the last decade round the world, we'll get strong growth and innovation.

If you like, there's a Harrod growth story there if we push up investment. If you look at the investments we need to do from the point of view of climate and moving to net-zero, you get a couple of percentage points of GDP. If we can push our investment quickly – both public and private, which are complementary – we could have in the 2020s a strong decade of growth in a much more attractive way than we responded to the last crisis, which led to the rather sluggish decade that's just closed. On the other hand, it could go the other way. If we are too cautious, if we lapse back into austerity too quickly as we did after 2009, we could miss this opportunity, and the next decade could be even worse from the point of view of growth and employment and incomes. They're big choices we face.

*Let me push back a little bit on that. Olivier Blanchard has argued that the kind of investments that you might need in order to recover in the short term may not be the greenest investments. So those are not necessarily the same objective. How would you answer that?*

Well, I've been talking to Olivier about this actually. The distinction is in the short run and the medium run. In the short run, we've got real claims in unemployment. Now, what kinds of investments are fast in implementation, labour-intensive, and have strong multipliers? Well, here's some examples: retro fitting buildings, pushing out broadband,



making the infrastructure for charging electric vehicles, making our cities more friendly to pedestrians and cyclists. That's physical capital, but we can also look at natural capital: restoring degraded land, reforesting... So many of the green investments that we have to do can actually satisfy what Keynes would have looked for in terms of the multipliers: fast, labour-intensive and with these strong and clear benefits. In the medium term, pushing ahead with the new forms of investment is actually pushing ahead where innovation is particularly strong. The fastest innovation in the world is in these areas, and we're also seeing the benefits of increasing returns to scale. A lot of what happened in solar and wind was about scale.

So both in the short run, in the Keynes multiplier story, and in the more medium term where you're talking about the new forms of investment (driving down costs, greater efficiency), I think that the balance of the argument points to the combination of investment and innovation, driving growth by exploring new frontiers.

*What are the key areas where you would prioritise these investments? Where would you advise Europe to spend its recovery plan money?*

If you're looking at big reductions, look at the big areas, so I would focus on the really big emitters: energy, transport and agriculture.

1. In transport, I would focus on promoting public transport and electric vehicles and on the design of cities.
2. In energy, a strong move to renewables, where we look very carefully at grid management and storage. We need European cooperation on grid (transmission and distribution). We know we can transport energy with high voltage DC cables over quite long distances quite cheaply, so the centre of Spain, where land is very cheap and the sun is strong, should be very strong on solar. Energy efficiency is also extremely important.
3. In terms of agriculture, around the world the industry receives subsidies of around \$600-700 billion, depending how you do the sums. And what do we get in return? Degraded land, poisoned waterways and rivers, and the cutting down of forests. Now, those impact in different ways around the world, but Europe has its share of that. I wouldn't reduce agricultural subsidies, but I would make them different: public money for public goods. We could have a less degrading, a more productive agriculture which, incidentally, would be oriented away from the very rich farming enterprises towards small farmers.

*You've been in government, in the private sector, and in the ivory tower from which economists see the world. What is your view of how the need for all of these investments will change the balance between state and markets? Are governments going to be able to manage these massive investments when they haven't even been able to publish good data on the spread of the virus?*

We have to look as much as possible for investment in the private sector. For example, in the UK, they have banned production of internal combustion engine cars after 2030. That is something which sends a very clear powerful signal to the private producers of cars. And they've responded very well: "Thanks. That's clear. We're on the way. We're going to invest." That's private sector investment with a public signal.

Some aspects of public transport are going to have to be made in the public sector, and there we need clear plans, transparency, close scrutiny, and good management. Management does make a difference. The London Underground is a good example of the transformation you can achieve if you get the very best management of the private sector, with of course transparency being very important.

The third thing I would underline is the role of development banks. I had the privilege to have six years as chief economist of the EBRD, where we invested in both the public and the private sector and in combinations. Every Friday morning for six years, I sat on the loan committee and we scrutinised against the criteria of sound banking, good risk return, having the right kind of impact, and additionality that the bank was going to partner with private sector where the private sector couldn't necessarily go by itself because of risk management issues. In the case of the EBRD, it was moving the transition forward in central Europe after the fall of the Soviet Union. Here, the objectives would be around levelling off across Europe, particularly, of course, moving to zero carbon. So I think the mechanism of the investment bank, that of course has to be transparent and accountable too, can help with these kinds of issues. The investment decisions are not buried inside a ministry, they are taken within a public organisation with a clear mandate and principles and that is accountable.

## **THE GLOBAL CLIMATE CHANGE**

*Adam Tooze (2020) has argued that China's announcement of carbon neutrality in 2060 was one of the most significant events of the year. Do you see China as ready to change its ways and to become part of the solution rather than part of the problem?*

Yes, I do. I've been working in China for 30 years and have lived there for a longish period, and in the last five years China has seen a very big change in its approach to the climate. I absolutely agree that the announcement in September last year by President Xi Jinping at the United Nations was extremely important. It signals a recognition in China that's been building for quite some time. They are extremely vulnerable to climate change. They're so dependent, for example, on the waters of the Himalayas, while so much of the

population on the East Coast is vulnerable to sea level rise and cyclones. The pollution that they saw in their cities was also a strong motivation to do things differently. The vulnerability means that the commitment is considered and clear. They also see that the green transition involves quite a lot of new technology that they're probably going to be rather good at.

For all these reasons, I think that China's commitment is serious. At the same time, and as in most countries, there's politics and vested interests. It's not always so visible in China, but there are some people who push back, for example those who are really dependent on the coal industry. There are those who argue that, because of the Covid crisis, China should recover by using what they know. However, the much better growth story is to invest in the future and the different technologies which China is becoming good at. So those tensions are there, but I do think that China's commitment is real because it's founded on good arguments which have been aired, heard, and discussed.

*A key mechanism that we have been working on in Europe is the carbon border adjustment mechanism. Since we have a carbon price in Europe, and other places do not, there is a risk that production gets moved to where there is no carbon pricing mechanism. The planet is as badly off because the pollution continues, but we lose jobs and production, so the solution is to put a carbon price at the border to make sure people from other places also have to pay the same price as people who are producing in Europe. What's your view on how to design this mechanism?*

There are a number of aspects. First, theoretically, the argument is correct. Second, it's empirical application is very narrow: it's essentially energy-intensive, trade-exposed industries. The empirical evidence is that there's very little movement of production towards 'dirty havens', if you want to call them that. Why? Because people choose to have their production where they've got a skilled labour force, where the infrastructure functions, and where the investment in climate from the government is attractive. Those are the big things that shape where people put activities.

But there are four or five industries that are energy-intensive and trade-exposed where this is important: steel, aluminium, some plastics (by-products from the petroleum industry), some aspects of wood like wood pulp or cement. If you look into detail, steel comes first, but cement is less important because it's so heavy that people don't move it around so much. Given the narrowness of the application, my instinct is that it is sensible to focus. If you try to make it totally economy-wide, it gets overly complicated, and many countries around the world and in developing countries will think you're trying to discriminate against them. And they might be right. You can sneak protectionism into this story. In sum: theoretically correct, empirically narrow, keep it simple and focus first on those places where it really matters. And I would start with steel.

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# Michael Greenstone: The real enemy here is carbon

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Michael Greenstone received his PhD from Princeton in 1998. He has been a Professor at the Massachusetts Institute of Technology and, since 2014, at the University of Chicago. At Chicago, he is also the Director of the Energy Policy Institute at the University of Chicago (EPIC) and the Director of the Becker Friedman Institute.



His research has largely focused on uncovering the benefits and costs of environmental quality and society's energy choices. He co-led the development of the 'social cost of carbon' for the United States government (Greenstone et al. 2013), a methodology that estimates the cost of each additional tonne of CO<sub>2</sub> that is emitted. While his current work has focused on markets for energy, especially in developing countries, and improving the efficiency of environmental regulations, he has continued to produce empirically grounded estimates of the impacts of climate change as a co-director of the Climate Impact Lab and as a founder of the Air Quality Life Index. He recently co-founded [Climate Vault](#), a 501(c)(3) that uses markets to allow institutions and people to reduce their carbon footprint.

During the Obama administration, he was the chief economist of the Council of Economic Advisors. There, he was instrumental in designing the American Clean Energy and Security Act, the closest attempt the United States has come to putting a price on carbon.

I interviewed Michael on 28 June 2020; you can watch our conversation [here](#) and listen to it [here](#).

## CALCULATING THE COST OF CARBON

*You were the chief economist for the Obama administration for 14 months. What are the big accomplishments that you look back on from that time?*

Back then we were facing the greatest recession since the Great Depression, yet at the same time the president was trying to pass a cap-and-trade system for CO<sub>2</sub>. I am no political expert, but it just struck me that it could be a hard sell in Congress, and that we should have a plan B. The obvious plan B was to reduce carbon emissions through a regulatory approach: mandating that carbon emissions from particular industries don't exceed certain amounts and things like that.

The problem with this was that in the regulatory process, you have to conduct a cost-benefit analysis for the regulation to go forward. But the costs are measured in dollars and the benefits in tonnes of CO<sub>2</sub>. Clearly, the tonnes were always going to lose that one, so we set out to see if we could convert the tonnes of CO<sub>2</sub> into money. The solution was to develop a ‘social cost of carbon’ – the monetary damages associated with the release of an additional tonne of CO<sub>2</sub>. I remember having lunch with your former colleague and my friend Cass Sunstein in the White House, and saying: “Cass, I think we should try this. I think eventually we’re going to need it”. And Cass and I then set off on an adventure to run an interagency process to set the US government’s social cost of carbon.

*How comfortable are you with the numbers you came up with? How well do they help guide policy?*

I’m slightly abusing it, but the famous quote from Churchill is that democracy is terrible and awful, but it’s better than everything else. And I think there’s some truth to it with respect to the social cost of carbon. These are very innovative models that help link climate science and economics, and together can give you a good sense of what the damages are from the release of an additional tonne of CO<sub>2</sub>.

The first model we relied on was a DICE model (Nordhaus 1992), which Bill Nordhaus won the Nobel Prize for (among other work that he had done). They were very important but were all developed roughly in the ‘90s and early 2000s; they didn’t have the benefit of all the computing power we have now and all the access to data. However, they were the frontier of understanding in 2009-2010.

I think there’s enormous opportunity to update them. I’m co-leading something called the Climate Impact Lab that’s trying to do that. But returning to your question, I think that what the United States government set in 2009 and 2010 is probably still an accurate reflection of the frontier of our understanding from these models.

*Can you translate those numbers into plain English?*

In plain English, the social cost of carbon says that the release of an additional tonne of CO<sub>2</sub> causes \$51 worth of damage around the world as long as that tonne of CO<sub>2</sub> remains in the atmosphere (which is a couple of hundred years). That shows up in shorter lives, in reduced agricultural yields, in altered energy consumption patterns, in altered labour productivity, in sea level rise and the damages associated with this... It’s meant to encompass everything.

If you want to put that in context, the US is releasing around six billion tonnes a year, so you can think of that as doing about \$300 billion worth of damage. But let me emphasise that there is a wave of research on this in the last ten years, and I think it’s indicating that there’s an opportunity to really update these numbers with a much more solid empirical foundation.

Let me give you two examples. The first is mortality – its impact comes from damages due to ultra-high temperatures and from the benefits due to the reduction in cold temperatures. On net, it looks like the existing estimates probably understate the damages from an additional tonne by more than a factor of 10. That would suggest that the \$51 might be too low.

The second example is energy consumption, I've done some work with my colleagues (Rode et al. 2020), and there it looks like the number that we're getting is lower than what people had previously thought. Ultimately, it's going to have to be added up sector by sector and put in a full economic model, account for uncertainty, etc., but there is an opportunity to do so. And to have efficient policy we really need to get back to the frontier of understanding. I think we've fallen behind it.

*Regardless of what exact number you get, the numbers are much higher than the prices we see in our carbon trading schemes.*

Absolutely. First of all, you don't want to criticise the parts of the world that actually have managed to put a price on carbon. But in all of those places, the price of a permit to emit an additional tonne of CO<sub>2</sub> is substantially below my estimate of the social cost of carbon. For example, in California it's less than \$20, and in the New England states it's about \$8. These prices indicate that you could have a much tighter cap and still have the benefits of reductions easily exceed the costs.

## **IS THE GREEN DEAL A FREE LUNCH?**

*Politicians like to think that fighting the environment will just create jobs and make everyone happier. However, your research seems to point out that, when it comes to fighting the environment, there is no free lunch. Could you tell us why?*

One way to start is with the question: Would we be better off without climate change? Absolutely. So what we're stuck with is trying to find the balance between the costs of reducing emissions and the costs of climate damage. Both of those are bad things, but often the political discourse tries to look for a way to put a shiny face on it. At the end of the day, we're doing things that we wouldn't otherwise choose to do because they're expensive.

I have had a series of papers that look at individual policies to reduce carbon. And when we don't turn to the cap-and-trade measures you pointed to, you can often end up with quite expensive approaches. A favourite one in the United States is energy efficiency policies. Everyone thinks of their energy consumption like they do about the leaky attic in their home: it must be very cost effective to fix the leak. Many in the Obama administration talked in this way, so I was really intrigued by this question and ran a couple of randomised control trials where we experimentally induced some people to make these energy efficiency investments (Allcott and Greenstone 2012, Fowlie et al.



2018). The results were quite shocking. These investments turn out to not save nearly as much money as projected, and the cost per tonne of carbon abated can reach a couple of hundred dollars. If you think that the benefits are about \$50 a tonne, the costs exceed the benefits.

A lot of carbon policies have this flavour of ‘looking for the win-win’ or I guess you would say the ‘free lunch’ where you don’t actually attack the real problem. The enemy here is carbon; the objective is not energy efficiency or more efficient cars or renewables per se. And so you have these policies that target those things and you hope that they’re going to get to carbon, and they all do get some carbon. But because you haven’t come directly at the problem, it’s like trying to make a bank shot in billiards. It can be done, but often times you’re going to miss.

*I am sure you have tried to explain these things to many politicians. It’s not an easy case to make. Of course, it’s much easier to just focus on the benefits. It’s harder when you’re just telling people, “Look, these are the greens, you have to eat them”, and often people find it hard to eat them.*

Yes, and I totally understand. I’m not saying the political problem is easy, but my concern is that we’re doing a bunch of policies that make us feel better about ourselves. Maybe a nasty way to say it is that everyone is poised to benefit from these policies except the planet. The people feel good because they supported a policy that sounds good, the politicians feel good, some resources get spent, and the main loser is the planet, which doesn’t get the carbon reduction that we are aiming for.

Let’s just come back to your cap and trade. From some of my energy efficiency work that I mentioned, it looks like the costs of abating each tonne is approximately \$250. I can go to the EU cap and trade market and get a tonne for \$25,<sup>1</sup> and I could just buy the permit and pull it out of the market with the same one tonne effect. I agree the political problem is hard, but I turn to you and ask, is it so hard that we are buying one for the price of ten?

## **CARBON BORDER ADJUSTMENT MECHANISMS**

*One thing that seems politically feasible and that you worked on in the Obama administration are carbon border adjustment taxes. The idea is that we put a charge on the carbon content of the imports coming from countries which do not have a carbon tax, so at the border you have a mechanism to adjust costs so that everyone pays the same environmental taxes. Politically, this has been supported both by unions, which don’t want jobs to go away, and by businesses, which don’t want to lose competitiveness. However, it’s very hard to implement. What’s your experience with this?*

1 Since November of 2020, the price of an allowance from the European ETS has risen to €40.

Yes, that is something I probably spent a couple hundred hours on at the Obama administration. The first aspect is that we concluded that it was legally feasible under WTO rules. It is effectively a tax on imports from other countries, so there are concerns about whether one would implement it to protect one's home industry. However, the lawyers said that it is feasible as long as China gets credit for whatever carbon policy they have in place. But then you would need to put on an equal playing field the tax with whatever climate policy China implements.

As a result, it was one of those situations where it seemed like the more you learned about it, the less you knew because the questions kept multiplying. To implement it you would have to have a view on what the carbon content of imported steel is, but this could vary depending on where it had been constructed. You would then have to have a view on what was the implicit environmental tax they faced in China, Brazil or wherever. It just felt like it would go on and on.

That's to be a little negative about it. But where I think it's coming from, which is really important, is that it focuses on the ability of the United States or the EU to influence other countries to put in place carbon policies. I can't overstate the importance of having carbon policies in other parts of the world. Just to give you a flavour of that, for the remainder of the century the US is only projected to account for 11% of global emissions, the EU 5%, China 31%, India 11% and other developing countries 32%. So even if the EU and the US went to zero emissions, unless the other parts of the world find a way to embrace a carbon policy of one form or another, the ability to influence the degree of climate change is quite limited.

*But if carbon border adjustment mechanisms are going to be very complicated, how do we get these countries, which are at different stages of development, to do their part?*

I don't think they are the only tool, but border tariff adjustments are definitely one of them. Let me be clear: people should just find a way to make it work. Just because it's complicated doesn't mean it shouldn't be done. More broadly, it's actually wrong to think of it as a climate challenge. It's a global energy challenge. This global energy challenge consists of the fact that every country has to find a way to trade-off between what I see as three goals:

1. The first is how to have inexpensive and reliable sources of energy. People are desperate for it. It provides living standards that you and I are quite accustomed to.
2. The second leg is avoiding having a disruptive change in the climate. The problem is that the energy sources that can produce inexpensive and reliable energy tend to be fossil fuels.
3. The third leg is local air pollution, which also comes from the same fossil fuels.

Different societies are going to view this problem very differently. In wealthy countries, people are going to be much more focused on the risks of climate change in the future. But, for example, I do a lot of work in the state of Bihar in India, and there the per capita electricity consumption is about 250 kilowatt hours per person per year. In the United States it's 13,000, so they're off by a factor of 50 or so. They're not going to be focused on climate change; they're focused on energy today. So winding back to your question, I think it's going to be crucial to invest in technologies that reduce the cost of low-carbon energy sources.

I think an underappreciated area is trying to invest in policy innovation in developing countries. There are a lot of developing countries that would like to have cleaner environments but don't have the tools on the shelf, so I think there's room for lots of experimentation that would produce win-win situations for them.

And I'll just throw an idea out here. The EU ETS could be linked to a cap-and-trade programme for example in India, which, through a particular allocation of permits, would directly subsidise low-carbon energy in India – all through the same market mechanism. The EU has a cap, and it would help India set a cap. Then you would merge the two markets. This is feasible. And then the next step would be that, within this single market, you could allocate permits to Indian companies for them to invest in low-carbon energy.

*And we could link it to trade deals with these countries.*

Indeed. The closer you get to creating economic incentives, the more likely it is to happen. The standard knee-jerk answer here, which I'm not against, is that we need R&D in technology that will reduce the cost of low-carbon energy sources. That's self-evidently true, but this would be a boring problem if we just had to get low-carbon energy sources to be less expensive than fossil fuels. I think a more underappreciated area is policy innovation. And this cap-and-trade proposal is just one idea.

## THE DISTRIBUTIONAL CONSEQUENCES OF TAXING CARBON

*The hardest question is the distributional one. We saw it with president Macron and the 'yellow vests'. How do we make the green transition more distributionally friendly?*

The short answer is easy and simple in a blackboard way: you're just going to have a cap-and-trade programme where you redistribute the revenues to people, say, in the bottom half of the income distribution. There have been some studies in the United States (Horowitz et al. 2017) that suggest that with a reasonable carbon price, you could actually have people all the way up to the seventh decile of the income distribution be better off if all the revenues were just refunded right to them.

*Is this proportional to anything, or just everybody gets the same cheque?*

There are different versions. You could just give everyone a fixed amount of money, and that will be worth a lot to people who don't consume a lot and not worth very much to wealthier people. You can also try to implement it through the income tax code, which would allow you to fine-tune it so as to give nothing to the wealthy and more to people lower in the income distribution.

This works easily in the blackboard. However, in practice, there are a couple of streams of resistance. One, and I think this is more of an American phenomenon than an EU phenomenon, is that there's distrust of government in general, and there's no question that this would be creating a new money machine for the government and a way to raise revenues. And I think there are people who are very uncomfortable when the government has new ways to raise money. There is a concern that, while in the very first year it would be quite progressive and redistributive to lower-income people, by the second year politicians would think: "Well, in my district, it would be really nice to have an additional bridge. And I might want to name a school. I might want to name it the Luis Garicano School. Why don't we just take that out of this year's revenues from the carbon tax? Just this year." Not that you would ever do anything like that, but maybe less scrupulous politicians might like to have a school named after them.

Having said that, there is also a growing need in Western countries for revenue, with populations ageing and entitlement bills coming due. However, you should take this with a grain of salt, as I've been making this prediction for a decade or so and arguing that the time for carbon tax is now because we need new revenue to fund all of this. But so far, I have not been proven right.

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