# WORLD COMMERCE REVIEW

SPRING 2020

ALESSIO TERZI ASKS IF THE GOLDEN AGE OF GLOBALISATION IS OVER

THE GREAT DISTORTION. PATRICK MINFORD ARGUES THAT MONETARY POLICY NEEDS CHANGING

CHRISTINE LAGARDE FOCUSES ON CLIMATE CHANGE RISKS FOR THE FINANCIAL SECTOR

## THE GLOBAL TRADE AND FINANCE PLATFORM

# CONTENTS

# CONTENTS

# CONTENTS

# CONTENTS

# FOREWORD

# A new dawn

It seems that it is a strange time to talk about what the future holds for the global economy in the 2020s, when the coronavirus dominates conversations in the news, media, office and coffee shop. It looks like the coronavirus has stopped the world. Conferences are being postponed or cancelled. Airline flights are no longer needed. Hotel rooms are empty. Sports stadiums, theatres and restaurants are suddenly all ghost towns. It means that the service economy is dead. It's all shut down, it's all stopped.

This is and will continue to be a major shock to the global economy, which had already been slowing down. Central banks will be firefighting, trying to get economies moving. Politically ambitious projects will be pared back. But the global economy will still continue, and through the 2020s will continue to expand strongly.

In the era of identity-politics it is time to praise the success of capitalism in raising living standards, extending life, and reducing poverty. Capitalism is the answer to the challenges ahead, whether it be the coronavirus, climate change, or population growth.

How will the world look in 2030? The great success of China in reducing poverty was as a result of growth in merchandise exports. They created huge industries, and from nothing have world-leading corporations, with innovators in the new industries of the 21st century. They followed Japan and, as they faded, so will China. Will they be followed by India? And what about the developments in Africa?

This is where the growth in the 2020s will come from. But will there be seismic growth? The problem with predictions is that they are based on past events, and the surge in innovation over the last decade looks likely to accelerate, and this makes forecasts difficult.

Rough back-of-the-envelope projections would see the eurozone growing moderately, with India and Africa growing much faster. An annual growth 5% or so larger than Europe would mean India and Africa will contribute growth in the decade equivalent to GDP the size of the German and French economies combined. When you factor in Asian and US growth then the decade looks promising.

The global trading system relies on rules to allow smaller nations to compete with the larger blocks. The top priority now is to ensure that the multilateral system runs for the good of the global economy and not the self-interest of Europe, China or the United States.

There are complex problems to be addressed, whether it be the much-needed reform of multilateral institutions, trade wars, technological disruption, or the coronavirus, but capitalism as we know it has countered much greater threats, and the wellbeing of the global population has improved markedly. ■

# HERMES AVIATION
## CONSULTING

*Our word is our bond*

## *We exceed your expectations*

- Covering every aspect of business aviation
- The go-to business aviation consultancy
- From the interior to the exterior, from nose to tail
- Unique A-Z+ aviation consultancy, open to all in business aviation
- Answering YES to your questions
- Unique bespoke concierge-type consultancy, going the extra mile

David Briggs-Wilson: E david@hermes-aviation-consulting.com T +33 3 8331 0018

HERMES AVIATION
CONSULTING

**www.hermes-aviation-consulting.com**

# The great distortion

Patrick Minford argues that the traditional orthodoxy of fiscal caution is dangerous in today's zero interest rate world

What does the current developed world economic situation demand in the way of fiscal and monetary policy responses? I will argue in this article that the conventional wisdom of fiscal balance and monetary policy stabilisation needs to be thrown out until the monetary environment is brought back to normal.

We must begin from the widespread dissatisfaction the public expresses about current policy, not least with the persistence of 'austerity' policies since the financial crisis. This dissatisfaction has led to demands by some for a return to socialist policies and an abandonment of 'capitalism'; this is now the political position of the British Labour party, just as it is of some Democratic presidential candidates on the left of the party, such as Bernie Sanders, even though the US Democratic party has traditionally supported the general capitalist economic model.

## So what is this opposition to capitalism all about?

The last big peacetime crisis of capitalism was created by the Great Depression of the 1930s. The current crisis has been created by the Great Recession starting in 2008.

After the Great Depression major changes were made in western countries' policies, as urged by Keynes. Governments became far more active in fiscal policy in preventing slumps in demand; monetary policy was relegated to a support role, setting interest rates to allow demand to be regulated by fiscal policy.

As is now well-known, these policies led after WWII to high and persistent inflation, so that today central banks target inflation and fiscal policy is generally held in control to prevent government debt getting too large.

Today's financial crisis and the Great Recession has in turn forced big changes in western countries' policies. We now have introduced heavy regulation of bank behaviour, combined with aggressive printing of money at zero or even negative interest rates, 'Quantitative Easing' (QE), in the attempt to create renewed growth.

Furthermore, these policies have been accompanied by sharp fiscal contraction, with 'austerity' the main fiscal aim of most western governments. The living standards of western households have fallen sharply; and it is because of this that there is widespread disappointment with capitalism, fuelling 'populist' revolts such as the election of President Trump and Brexit.

To anticipate, I will be explaining how it was a failure of monetary policy that caused the Great Recession, and that avoidance of future ones depends on a radical overhaul of monetary policy rules.



*Fiscal policy must step in with a bold expansion designed to push interest rates back towards normality, decisively ending the zero lower bound episode*

I will also argue that to put a full end to the Great Recession as it continues to drag on in the form of weak recovery and renewed recession, in spite of continued but ineffectual efforts from monetary policy, we have to endorse a self-limiting fiscal expansion, and within it tackle the discontents of average households that now fester, through more and better government spending and liberalising tax policies. Through these measures we will get the capitalist economy working effectively again and satisfying its critics with this improved performance.

## The unnecessary financial crisis courtesy of central bank mistakes

To understand how the financial crisis occurred, we must first consider how monetary policy was conducted until 2008. In the early 1990s central banks started to embrace inflation targeting, together with associated 'central bank independence' so that supposedly spendthrift governments should not impose inflationary financing on them.

These new policies led to a period of low inflation which in turn we know encouraged firms to keep prices and wages stable: price and wage durations lengthened, meaning that output was increasingly dominated by demand shocks because these did not provoke the rise in prices that would have choked off demand and so contained the needed rise in output.

This was a 'New Keynesian' world, in the sense that prices and wages did not respond, much as Keynes argued they would not in the modern capitalist world of large companies and powerful unions. As it turned out the 1990s were an era of moderate demand shocks; also productivity growth was steadily positive.

The era became known as 'The Great Moderation', with low and stable inflation and moderate positive growth. In retrospect it looks like a time of unusually benign shocks: small demand shocks and positive productivity and other supply shocks.

As it proceeded from the 1990s, monetary policy began to encourage strong credit growth, especially in the US. Public policy also entered the mix, with the US government encouraging mortgage loans to poor families, to be underwritten by 'Fannie' and 'Freddie', two public institutions able to buy mortgages. It seemed that with real wages having stagnated, 'getting poor people onto the housing ladder' could be an alternative route for obtaining the 'trickle down' effect of growth.

With low inflation successfully engineered, central banks disregarded the growth in the monetary and credit aggregates which accelerated into the 2000s. As dollars became more plentiful, the central bank of China bought them to prevent the yuan appreciating against the dollar; and easy money spread to China through this channel.

World growth increased, with China reaching 13% at one point; world growth peaked at over 5% and world commodity and oil prices soared as excess capacity was used up. By 2007 these prices had hit high peaks, with oil at $150 a barrel.

It was plain that growth must be arrested, if only by lack of resource capacity, even though final prices were slow to generate downstream inflation with firms still setting long price durations and so reacting slowly to cost increases.

Central banks were finally realising the threat of rising inflation by 2007, when the mortgage crisis burst, with various banks reporting defaults on their bought-in packages of mortgages. The interbank market seized up, with uncertainty about which banks borrowing in it might be at risk.

Interest rate rises were put on hold and central banks went into crisis-prevention mode: various banks were rescued by central bank loans plus concerted take-over by other banks. This early era of bank bail-out created a political backlash, especially among US Republican politicians.

It succeeded in stabilising bank liquidity so that by the middle of 2008, it seemed as if a full-scale banking crisis had been averted. Then out of the blue in September 2008, Lehman went bankrupt; shortly afterwards, AIG, the world's biggest insurance company went down with it. The financial crisis had occurred with a vengeance.

Could central banks have averted it? The answer is plainly: yes. Lehman could have been saved by a coordinated package of take-over by other banks (among whom Barclays was keen to buy parts of Lehman) and loans injected by central banks, plus general liquidity provision to the interbank market, where Lehman's problems originated.

It seems that central bankers lost their nerve in the face of a political climate increasingly hostile to bank bailout; not just in the US but also the UK, where Barclays was expressly forbidden from buying Lehman in the talks led by the Fed that attempted to prevent the bankruptcy.

Even among central bankers, such as Britain's Mervyn King, a school of thought had arisen that banks needed to be taught a lesson, to avoid in future the 'moral hazard' of excessive lending, implicitly supported by the taxpayer. Other banks, whose cooperation was needed in any Lehman package, became increasingly alarmed that if their turn ever came, the central bank willingness to supply money would have run out.

So it was that after long discussions on Sunday September 14th, 2008, Lehman's bankruptcy was finally decided. No action was taken to close markets or provide special assistance. After AIG's bankruptcy, the full savagery of the financial crisis became clear and forced governments to intervene with large taxpayer bailouts, both in the US and the UK. World trade and growth collapsed overnight, as credit lines were extinguished. The Great Recession had begun.

It is plain that central banks could have averted it at two stages. First, monetary policy could have been tightened in the 2000s, so preventing the massive credit boom up to 2007. Second, central banks could have coordinated a rescue of Lehman along earlier lines.

However, central bank failure did not stop there. What was needed, given the general banking collapse, was an immediate liquidity injection into the banking system, together with the easing of any restrictions on banks' lending capacity. This could have caused a rapid turnaround from credit blight to credit expansion.

Unfortunately, central banks had taken from this whole episode the moral that banks, not they, had behaved irresponsibly; and that bank regulation should be sharply tightened to prevent future credit expansion to 'risky' clients. The fact that bank clients are in general risky, it being banks' role to extend risky credit, duly escaped central banks under this new view of the need for regulation to 'prevent future crises'.

Plans for this new regulation were drawn up in early 2008 and instead of being put on indefinite hold when the crisis struck in September, they continued to be rolled out and duly prevented the necessary snapback in bank lending.

So central banks now became the reason why recovery from the crisis was so slow. Of course for them there was the undoubted consolation that through it all their own bureaucratic role had been massively strengthened, to include bank regulation, as well as their continued independent execution of monetary policy.

## QE and the Great Distortion

As part of this enhanced role, central banks developed the new tool of deliberate balance sheet expansion, printing

money to acquire large amounts of government debt. This 'Quantitative Easing' was an extension of 'open market operations' in debt, but on a greatly expanded scale and in one direction only.

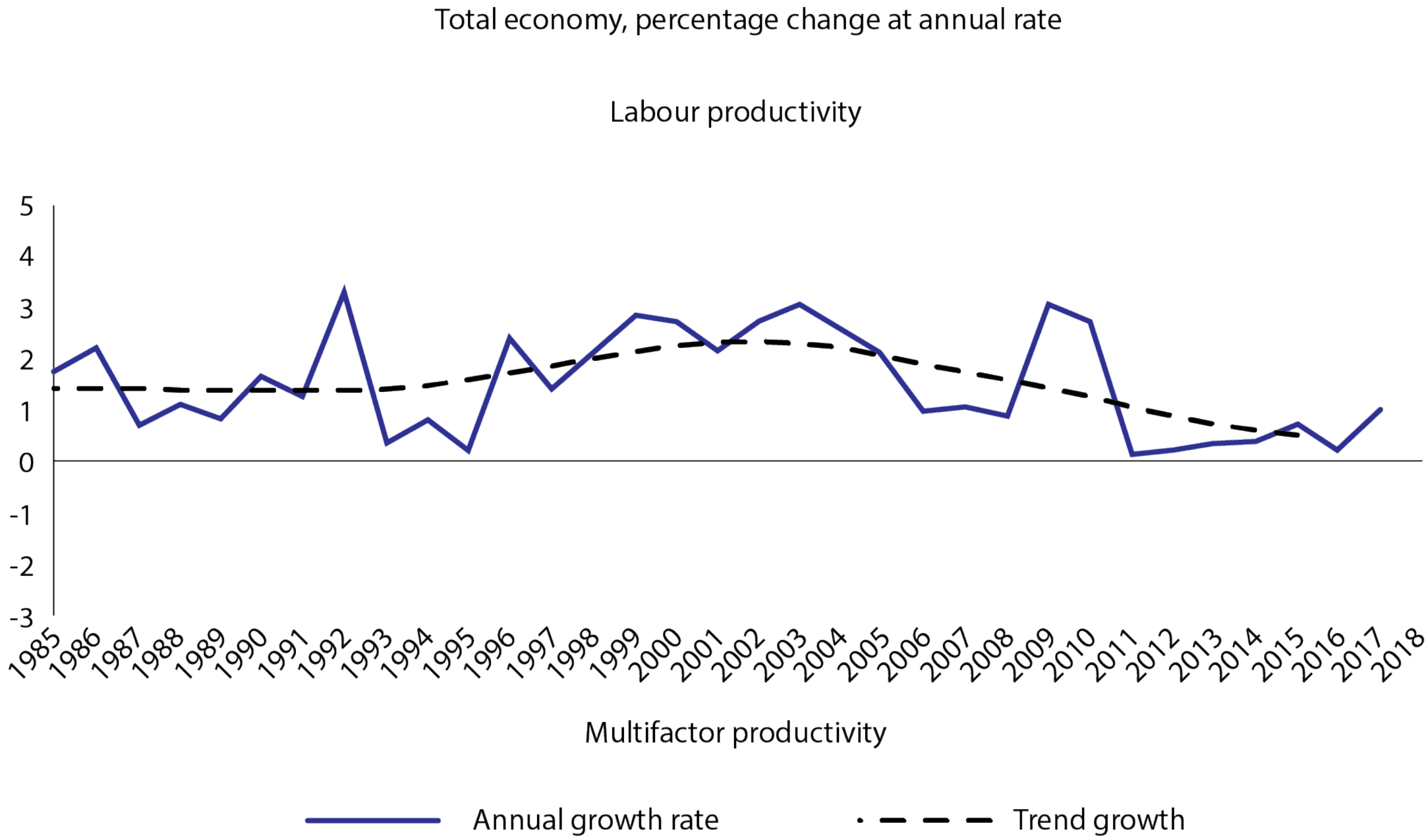
We know that at the macro level of monetary loosening QE has been effective, at least to begin with[1], though by now interest rates on safe government bonds have been driven to zero or close. How did QE work? By driving up the prices of assets, especially government long-term bonds demanded by pension funds, and the equities and corporate bonds of large companies that have low risk. So for large private sector agents such as these companies it has been cheap to borrow and raise equity.

Meanwhile capital remained expensive for SMEs for whom market risk drives down equity prices, and capital regulation with high SME risk-rating makes banks reluctant to lend to them. The effect of all this has been to distort the financial markets in favour of large dominant companies against their smaller competitors.

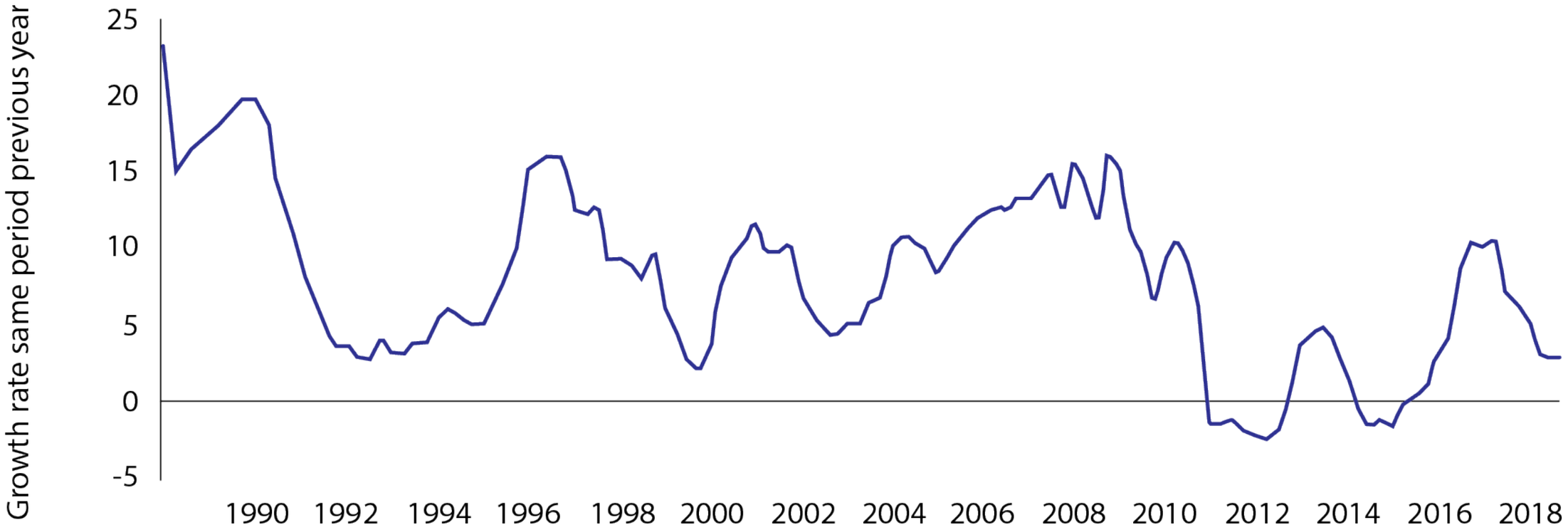
The effect on competition and productivity has been modelled by Liu *et al*[2]. Casual observation confirms that large companies now dominate great swathes of industry, and not merely in technology: concentration has never been higher. This, Liu *et al* argue persuasively, has damaged productivity growth, which has fallen since the crisis erupted- as illustrated by US experience shown in Figure 1, which is rather typical.

So we have had the Great Moderation in the 1990s, the Great Recession in the 2010s. Now we are having the Great Distortion of financial markets as QE and bank regulation take their toll. The various phases of monetary policy can clearly be seen in Figure 2 showing the UK's M3, monetary behaviour rather typical of most developed economies.

**Figure 1. Labour productivity growth trend and its components, United States**



## Figure 2. Monetary aggregates and their components: M3: M3 for the United Kingdom




*Source: Organisation for Economic Cooperation and Development*

## How to dig the world economy out of the Great Recession created by central bank mistakes? The need for a bold but self-limiting fiscal expansion

The state of the world economy can only be described as weak and lacking in confidence, with low productivity growth. Interest rates on safe assets like government bonds range from zero on short-dated paper to a maximum of around 2% on very long-term bonds, but close to zero on most western countries' long-term bonds, with the US around 2% as the only exception. In Japan and the eurozone all rates are close to zero, while rates paid to banks on their central bank balances are actually negative.

On risky assets rates are generally positive, reflecting the risk premium; however, as noted above, large corporations enjoying dominant market positions are able to access capital at close to zero cost which is heavily distorting market competition. As for governments, they can raise capital at negative real interest rates, implying that they are being paid to borrow; they can even print money to finance themselves through QE.

These facts signal desperate times are with us. Monetary policy is a busted flush, with its latest tool, QE, actually damaging the situation. Can nothing be done?

The clue to what can be done is to be found in that last sentence of the earlier paragraph: that people will pay governments to borrow and spend. This mirrors the desperate plight of the private sector, unwilling to borrow enough at such low interest rates that the economy would surge and raise the rate of return to normal.

Because of the bailouts of banks and related financial costs, western governments have historically high debt/GDP ratios. Yet because of QE, as much as a third of this debt is actually simply money - the debts have been bought by central banks in return for printed money. In normal times we would worry that all this printed money would cause

inflation; and we would be urging the central banks to sell their bonds and retrieve the money. Yet plainly we are not in normal times.

It is as if people were going around too emaciated to eat large stores of accumulated food that in normal times we would worry might cause obesity. The economy is too emaciated to use the huge supplies of money that have been printed.

Abnormal times require abnormal solutions. Fortunately all western countries have governments that can borrow, spend and cut taxes. As we have seen, they can do this at negative cost in debt interest; this means that future taxpayers will gain from the negative real interest cost on the debt, effectively only paying back less than the real value of the debt.

From society's viewpoint, provided the government can get a social return on its spending or its tax cuts that is positive, then this borrowing pays. Future taxpayers will have more income with which to pay off less than 100% of the debt. This means that there is no argument to be had with future taxpayers.

Meanwhile, current taxpayers will plainly be delighted if the government would take this action, bringing immediate direct benefits, but more importantly restoring the economy to functionality and confidence.

For those who feel concerned about adding to public debt ratios for fears of insolvency, this arithmetic provides reassurance. The truth is that if such fiscal policies work and push up interest rates once more to the normal real interest rates of the past, then any current rise in debt ratios will actually be reversed.

Here is a simple arithmetical example of what can happen. Suppose a country starts off with a debt ratio of 100%, of which say 60% is very long-term debt, say perpetuities, with long term interest rates at 1% p.a. Now assume it spends 10% of GDP borrowing on more very long-term bonds to spend and cut taxes over three years; and that this in time drives interest rates up to 3%.

Its stock of very long-term bonds will rise at first to 90% of GDP, with another 40% of GDP in short term bonds, making a total of 130% of GDP. But once interest rates rise to 3%, its debt ratio will fall to 70% of GDP, close to the 60% level considered prudent in the long run; this is because the long term debt is now being discounted by a rate three times higher than the current 1% (the value of a perpetuity is the coupon paid each year divided by the rate of interest).

For governments with long term debts the rise of long-term interest rates to normal devalues their existing debts, improving their solvency.

This example also shows that fiscal expansionism in these troubled times will bring its own termination and so can be thought of as self-limiting. Once interest rates get back up to normal, the normal solvency calculus will apply. New borrowing will once again be expensive in real terms, and should induce the usual caution over fiscal deficits.

It is important to realise that the case I am making here for fiscal expansion is strictly exceptional, to be ended once normality returns. It echoes Hayek's response to Keynes' work, *The General Theory of Employment, Interest and Money*; Hayek agreed that, in the very special circumstances of a stubborn depression, fiscal stimulus could be justified but he said there was not a 'general' case for fiscal 'activism', which Keynes was arguing for, on the grounds that the unaided economy might repeatedly fall into this state.

The same is true here. Usually, the economy works well without fiscal intervention. Any needs of stabilisation can be supplied by monetary policy. What has happened however is that monetary policy has laid waste the economy's usual robustness by dreadful mistakes, leaving only fiscal policy as the tool for the restoration of its robustness that we desperately need.

Once this restoration has occurred, we can also restore a powerful stabilising role for monetary policy, reacting in the future not so much to inflation as to Nominal GDP; as shown by Le *et al*[1] this shift of target implies a much stronger reaction of monetary policy to the sort of shocks involved in the Great Recession.

## Conclusions

Monetary policy is powerless now to restore vigorous growth to the world economy, with interest rates, long and short, around zero. Fiscal policy must step in with a bold expansion designed to push interest rates back towards normality, decisively ending the zero lower bound episode.

With real interest rates negative, there is no threat to government solvency from this fiscal expansion, which will come to an end naturally once interest rates have normalised. Meanwhile the expansion can be used for necessary public spending and tax cuts that will stimulate supply-side growth.

I leave on one side here the details of what spending, what tax cuts and how great, in total, borrowing should be in the rest of the world. I would simply commend President Trump's tax cuts and Congress' willingness to agree with him to rising fiscal deficits. In the eurozone I would urge a general liberalisation of fiscal policy, backed up by an ECB pledge to buy the bonds of any government facing market pushback; in particular I would urge the German government to abandon its doctrinal opposition to fiscal deficits, at least until the Great Recession is over.

For the UK, the excuse of Brexit is there for a radical new direction in policy, to be backed up by fiscal liberalism. In recent work the Economists for Free Trade campaign group that I chair has set out proposals[3] for well-targeted spending and tax-cuts in the UK that raise spending power and strengthen corporate competitiveness.

We hope that Boris Johnson's government will be bold and carry out such a fiscal reform programme, that will underpin the various trade- and regulation- liberalising policies that will come, as I have explained before in these columns, from Britain leaving the EU. ■

**Patrick Minford is Professor of Applied Economics at Cardiff Business School and Chairman of Economists for Free Trade (EFT), a group of leading economists**

*Endnotes*

*1. See Le et al, 2016: Le, M, Meenagh D, Minford, P, 'Monetarism rides again? US monetary policy in a world of Quantitative Easing' [https://econpapers.repec.org/article/eeeintfin/], Journal of International Financial Markets, Institutions and Money, 2016, vol. 44, issue C, 85-102*

*2. Liu, E, Sufi, A and Mian, A, 2019 - https://review.chicagobooth.edu/economics/2019/article/how-low-interest-rates-can-hurt-competition-and-economy*

*3. https://www.economistsforfreetrade.com/wp-content/uploads/2019/11/Evaluating-the-Conservative-and-Labour-Manifestos.pdf; see particularly section on 'Projecting the Effects of the Brexit Supply-Side Reform Policy'*

# Is the golden age of globalisation over?

Alessio Terzi fears that faltering trade growth could be to the detriment of the world's poorest

For the first time since the Great Recession merchandise world trade is on course to have fallen in 2019. At the same time, at the World Economic Forum in Davos, IMF chief economist Gita Gopinath presenting the Fund's latest analysis of the world economy, showed how global growth in 2019 was likely around 3.2%. This is most interesting as historically global trade and GDP went hand in hand, but in 2019 the relationship seems to have broken.

To be fair, by historical standards, trade growth has been on somewhat of a soft patch since 2008. According to one reading, this was due first to cyclical factors, such as sluggish demand in Europe in the aftermath of the Great Depression, and is now due to one-off idiosyncratic factors, such as President Donald Trump's trigger-happy tariff policies or, more recently, the impact of the coronavirus outbreak on global supply chains.

Taking the long-term view, there are however reasons to believe that even if Trump were not re-elected come November, and a phase-1 trade war truce were followed by a phase-2 trade agreement between the US and China, we would not return to the trade growth observed between 1970-2008: the golden age of globalisation. The economic considerations behind this prediction are several.

First, as discussed recently by Adam Tooze, elaborate supply chains require a certain degree of predictability. As the intellectual consensus on the desirability of unfettered free trade is irreparably broken, even without tariffs, businesses in certain sectors are shoring up against this risk, and are reducing their reliance on global value chains.

Second, labour-saving innovations such as robotisation and automation are likely to drive down production costs in advanced economies, and simultaneously require highly specialised services (eg. technicians for maintenance) that are more easily found in rich countries.

This will render the attractiveness of delocalising to countries where labour is cheaply available less appealing. Already today, trade in goods from low-wage to high-wage countries is down to just 18% of total, and this has been shrinking particularly in the textile segment.

Third, and linked to the previous point, new technologies such as 3-D printing, will increasingly require less and less shipping of products around the world, as production moves closer to consumer. In a recent study the McKinsey Global Institute estimates the combined effect of these two developments could shave off up to $4 trillion to global trade by 2030.

*... the end of the golden era of globalisation might represent a closing window of opportunity for rapid convergence*

Fourth, measures put in place to combat climate change, either in the form of carbon pricing or of carbon adjustment taxes, will inevitably increase global freight costs at least temporarily, until long-distance clean technology is developed and rolled out. This will put a further spanner in the works of global trade.

A structural decrease in trade could have far-reaching ramifications that go well beyond the simple Ricardian logic of gains from specialisation. In 2008, a group of experts in economic growth, led by Nobel laureates Robert Solow and Michael Spence, was tasked with scrutinising successful cases of sustained development and sifting out key general lessons.

While acknowledging that each country has its own peculiarities, the Commission on Growth and Development concluded that all successful cases took place on the back of a solid export expansion.

As argued by Harvard Professor Ricardo Hausmann, exports serve a double crucial role for development: first, only extensive world demand allows countries to specialise in new export lines and organically improve their productivity, since the division of labour is limited by the extent of the national market.

Second, more exports allow relaxing the so-called current account constraint. In plain terms, selling exports abroad provides the foreign currency needed by a country to import new inputs, technology, and products that make a quantum leap up the production value chain possible.

In a similar vein, Dani Rodrik has long argued how manufacturing is the crucial social escalator that has allowed many countries to shift away from low-productivity agriculture, thanks to the fact that, traditionally, it did not require complex skills.

According to this reading, even if trade in services were to react positively to technological improvements, as predicted by Richard Baldwin, and more than compensate the loss in merchandise exports, this would hardly work to the benefit of economic development in the world's poorest regions.

All this implies that a marked structural slowdown in trade would sharply reduce the likelihood of seismic growth acceleration episodes such as the ones observed in China and India, which were instrumental in achieving the lowest global poverty rate in recorded history.

While providing hope for many, these success cases might remain an exception in economic history. For poor countries that are yet to take off, the end of the golden era of globalisation might represent a closing window of opportunity for rapid convergence. ■

**Alessio Terzi is an Economist at the DG ECFIN, European Commission**

*Alessio Terzi works in the economic strategy team at the European Commission. He is writing in his personal capacity.*

# Strategic choices for South Africa's leadership in 2020

South Africa is a significant actor in Africa. Fred Phaswana says there is an opportunity for South Africa to put into practice its desire to reclaim its prestige and credibility on the continent

In February, President Cyril Ramaphosa became the chairman of the African Union (AU) for a year, as well as the chairman of the African Peer Review Mechanism (APRM) until the end of 2021. These roles also coincide with South Africa's second year as a non-permanent member of the United Nations Security Council (its third such stint since 2007).

The last time South Africa chaired the AU was 2002 when the new body, the successor of the Organisation of African Unity, was launched in Durban. Then, President Mbeki had declared that:

> *"The time has come that Africa must take her rightful place in global affairs … The time has come to end the marginalisation of Africa."*

The AU was a different organisation from the OAU, reflecting the needs of the new century – focusing on Africa's development path through the establishment of the New Partnership for Africa's Development and on good governance through the African Peer Review Mechanism. Eighteen years later, Africa as a whole displays much greater agency in terms of determining its future and engaging in global affairs.

NEPAD has become the AU Development Agency and the APRM Secretariat has received new impetus. Furthermore, the continent is to embark on an ambitious continental free trade area just at a time when some parts of the world are closing their borders.

This confluence of chairmanships provides an opportunity for South Africa to put into practice its desire to reclaim its prestige and credibility on the continent. No matter the domestic challenges the country faces, it is still a significant actor in Africa. But what can the country achieve in the short tenures available?

In 2018, President Paul Kagame of Rwanda demonstrated that a state can make the most of its time in the AU chair, by relentlessly driving AU reform and the African Continental Free Trade Agreement through strong leadership.

There are three areas that the President highlighted when he took over the chairmanship, and where progress in each would make a significant impact on the continent. The first and perhaps most challenging is 'Silencing the Guns'; the second is the implementation of the African Continental Free Trade Agreement; and the third is improving governance in Africa through the APRM.



*The country has always emphasised that without good governance in Africa, there cannot be real peace or prosperity*

## No shortage of guns to silence

East Africa and the Horn have seen the rise of extremist attacks in Kenya, which have spilled over to Tanzania and northern Mozambique. There is a complex web of interlocking conflicts across the Sahel, and instability continues in the Central African Republic, Somalia and the Democratic Republic of Congo. *Africa Confidential* recently wrote that conflict in 13 African countries affects some 25 million people, retarding economic growth and regional integration. The report states that 'five sprawling conflicts and crises – in Ethiopia, Nigeria, Somalia, Sudan and South Sudan – have forced over 10 million people to flee their homes'.

The nexus between peace and development has long been a strong theme in democratic South Africa's foreign policy. The country has played a seminal role in attempting to resolve complex conflicts across the continent and has also championed peace-making, stronger AU-UN relations and women, peace and security during its current tenure on the UN Security Council.

Ramaphosa specifically mentioned the conflicts in Libya and South Sudan attributing 'ulterior motives' to interventions by non-African states. Libya's nine-year civil war has been internationalised, with Russia, Saudi Arabia, Qatar and Turkey all involved, including through supplying weaponised drones to their proxies. Africa's newest state, South Sudan, remains wracked by warring political factions.

South Africa as the AU chair this year should propel the organisation from the margins to the centre of conflict resolution in cases like Libya and South Sudan. In doing so, South Africa will have to take on the external actors helping to fuel the conflict, including ones which are allies and friends of our country. It will take the deployment of diplomats, mediators, and South Africa's skills in building consensus through diplomatic means.

## Keeping to the free trade agreement timetable

The second critical area for South Africa will be the economic integration of Africa, a long-held Pan-Africanist dream, of which the African Continental Free Trade Agreement (AfCFTA), due to come into operation in July this year, is the high point.

According to estimates from the UN Economic Commission for Africa, the agreement could improve intra-African trade by 52.3% by doing away with import duties, and double this if there is also the reduction of non-tariff barriers. The growth and economic development the agreement can generate are crucial to tackle poverty and inequality and the resultant political and social instability.

South Africa must ensure that the AU keeps to its timetable to begin trading under the AfCFTA on 1 July 2020. This will entail closely monitoring and encouraging the various ongoing negotiations. The first priority is finalising the rules of origin and tariff schedules. The second is to ensure that the remaining countries that still need to deposit their instruments with the AU, do so during 2020, and relatedly, that all countries implement it.

The country lobbied hard – and successfully – at the AU for South African Wamkele Mene to be elected as Secretary General of the AfCFTA, which will be headquartered in Accra, Ghana. Securing the election of Mr Mene was a vital element to ensure that the Secretariat was led by a technically competent individual and was not overtly politicised.

However, South Africa needs to balance its engagement carefully and not overplay its hand; after all we are among those that stand to benefit the most, and sensitivity to that is necessary to ensure that there is no backlash against our business or the agreement in general. Which is why it is also important to finalise compensation mechanisms for those countries that stand to lose out.

The experience and resources of the National Treasury and Department of Trade and Industry would be of immense value in supporting the president's efforts. It also ties in well with his natural strengths and domestic priorities of attracting investments and turning the sluggish South African economy around. He could also work hard to bring South African business fully on board.

## Sharpening governance

On the governance front, South Africa was a critical player in conceptualising and creating the APRM, the continent's main governance promotion and monitoring instrument. South Africa houses the APRM Secretariat and has invested heavily in supporting the system. The South African government contributed $10,7 million to the APRM between 2004 and 2018. The APRM's total income in this period from member states was $48.8 million.

It now has a chance to get a return on its investment and provide visionary political leadership once again to promote good governance, at home and abroad, especially since South Africa is due to undertake its second APRM review. The last review had little effect. We need to do better this time. Doing so will also provide an example to the rest of the continent.

The country has always emphasised that without good governance in Africa, there cannot be real peace or prosperity. Elevating governance, therefore, is a critical component of silencing the guns. But for the APRM to be successful the 'peer' forum has to be frank and honest with the outcomes of the peer review processes. They should not let leaders off the hook, when reports identify serious governance challenges. President Ramaphosa can inject a new dynamism and accountability into these discussions.

These are all significant undertakings and South Africa cannot achieve them on its own, especially given its current domestic challenges. It needs to work with strong partners inside and outside Africa.

The country's past ability to bring people together and build bridges to solutions must be a significant tool in its armoury, illustrating its credentials as a reliable, credible and capable leader in Africa and partner with external actors who share a commitment to diplomacy and effective multilateralism. ■

**Fred Phaswana is the National Chairman of the South African Institute of International Affairs (SAIIA)**

*This piece was originally published by the South African Institute of International Affairs.*

*World Commerce Review is pleased to announce that BVI Finance has been awarded the Best Provider Offshore Financial Services 2020.*

*The World Commerce Review awards celebrate achievement, innovation and excellence across several fields of endeavour. Our award programs are tailored to provide a comprehensive analysis of the very best in each market.*

*The WCR awards are recognised as the principal indications of professional conduct and excellence.*

*The selection panel took into account product innovation, on-going customer support and best practice criteria as well as a continuing commitment to deploying the best possible solutions for the benefit of their clients.*

# Next steps in connecting Europe and Asia

The EU has set out an ambitious connectivity strategy with Asia. Antti Tulonen argues the priority must be to build on the existing partnership with Japan and seek other like-minded countries in Asia

Connectivity is the new buzz word. Building railways, roads, ports. power plants and energy grids have become key factors for states vying for geopolitical influence. The European Union has declared its wish to be a geopolitical actor and hence it has set out an ambitious connectivity strategy with Asia as its focus.

In September 2019, the then President of the European Commission, Jean-Claude Junker, and Japanese Premier Shinzō Abe signed a partnership for sustainable connectivity in Brussels, just a year after the EU published its connectivity strategy blueprint. Two years later, the EU is still waiting for a promised budget for its ambitious strategy, and also mulling potential new partners.

## Why a connectivity strategy?

The EU connectivity strategy and the follow-up partnerships are widely viewed as a riposte to China's Belt and Road Initiative (BRI), a modern 'Silk Road' which was launched with great fanfare in 2013 and now has hundreds of projects in over 60 countries under its belt. The EU's connectivity strategy does not mention China but Junker's statement that the EU would help develop infrastructure *"without mountains of debt"* or a reliance *"on a single country"* was quite clear.

The unsustainable levels of debt incurred by developing countries accepting BRI projects have been heavily criticised. Many fear that the massive debts would translate into Chinese influence over the countries' politics or seizure of strategic assets. The Chinese takeover of the Hambantota port in Sri Lanka is often cited as an example. In addition, BRI projects have been criticised for lack of consideration for their social and environmental impacts, and at times of unflattering reports of poor construction quality.

China does seem to understand these concerns and President Xi stated in November 2019 at the second BRI Forum that the BRI emphasis in future would be on sustainability, financial and environmental.

**Shinzō Abe and Jean-Claude Junker at the Europa Connectivity Forum, Brussels, 27 September 2019**

In contrast to the BRI, the EU has placed emphasis on infrastructure development that is *"comprehensive, transparent, high quality, sustainable, and rules-based."* Sustainability refers to fiscal, environmental, social as well as economic aspects of the projects while the comprehensive angle means a full spectrum of connectivity infrastructure from digital networks to railroads and ports. The EU identifies itself as a success story of regulatory harmonization and connectivity in Europe and it believes it has useful experience for other regions.

However, in fact the geopolitical aspirations could be secondary to the economic incentives to pursue a share of the Asia's immense infrastructure markets. The EU estimates that Asia needs €1.3 trillion in infrastructure investment



*... the EU would be well advised to build on the existing partnership with Japan and seek other like-minded countries in Asia*

annually for the next two decades to reach its full growth potential. There is a real concern that China's BRI could be undercutting European companies and this is why the EU places so much emphasis on rules-based development, a reference to internationally agreed technical standards and rules for procurement.

A survey of 130 European companies by the European Chamber of Commerce in China published in January 2020 revealed that since the inception of BRI in 2013 only two European companies had won BRI tenders through public means. Chinese state-funded enterprises had many advantages over EU companies that one could not talk of a level playing field. European companies found success only when pulled in by Chinese partners or local governments to provide technical expertise not available in China.

The imposition of Chinese standards is a major concern for European companies. The standards ensure that any follow-up projects to expand the infrastructure must also be Chinese to avoid interoperability issues.

Moreover, any neighbouring country wishing to connect its infrastructure to BRI built networks will have to consider Chinese providers to ensure smooth cross-border connectivity. With international standards sidelined, European companies, as well as most non-Chinese companies, are in danger of being locked out from certain markets for years to come.

## Finance

The EU's connectivity strategy has been hampered by lack of cash. For 2010-2016 the €300 million in infrastructure funding for Asia was leveraged by factor of eight to €2.5 billion in grants and loans. For 2021-2027 the Commission has proposed a more robust external action investment framework to the tune of €60 billion in total, or €8.5 billion annually.

While the EU has increased its commitment it is still far behind China. The estimates for total investment under China's BRI wary from hundreds of billions to up to eight trillion US dollars, enabled by generous seed funds provided by Chinese government and state-led banks working in unison. With other projects, and Brexit straining the EU budget, the EU is unlikely to be able to match China euro to renminbi. This is why the EU is mustering like-minded partners to support its own strategy.

## Partners

However, so far the EU and Japan partnership has remained vague in plans for next steps and lacks concrete projects. The EU partnership with Japan has been more an affirmation of shared values in their approach to infrastructure development to counter the China's narrative.

It remains to be seen if the partnership could eventually result in bundling current diverse range of funds, financial instruments and institutions under a joint-investment vehicle that could better match BRI. It is worth noting that in South-East Asia alone, Japanese backed infrastructure projects amount to $321.8 billion compared to $255.32 billion in Chinese-backed projects.

The EU hopes that the partnership with Japan, still the largest infrastructure developer in Asia, will be followed by similar partnerships with other countries in the region. Australia and South Korea who also have infrastructure initiatives are the first likely choices for new partnerships.

The United States has recently unveiled its own plan to develop infrastructure in Asia, though cooperation with Washington is complicated by differences of view in other areas – not least by the America First policy driving US foreign engagement.

In addition to the already mooted partnerships, the EU should perhaps consider widening its search for partners, with Singapore being an obvious candidate. It occupies a key strategic position, it is a global financial centre and, like Europe, shares a strong commitment to a rules-based international system. The government in Singapore has made infrastructure development in Asia a top priority for its future as an economy relying on international trade, and sees its financial services sector as its key asset.

Singapore shares EU values and believes it has the right mix of skills and expertise to facilitate projects in Asia. With its excellent record in terms of fighting corruption and its first-class diplomatic network, Singapore would certainly be an asset to promote transparency and sustainability in the region. It also has good ties to China and could promote mutual understanding between the EU and Chinese approaches.

The Monetary Authority of Singapore (MAS) has backed financing and consulting corporations such as Infrastructure Asia, Clifford Capital and Surbana Jorong to make this vision a reality. Singaporean banks already provide a share of loans or expertise in 60 percent of the infrastructure projects in South East Asia. Singapore's ability to leverage private sector funding in infrastructure could suit the EU well to augment its relatively meager infrastructure investment budget.

Singapore has already helped finance BRI projects issuing US$145 billion US dollars in BRI bonds in 2016 and US$600 million of BRI bonds in 2017. The Industrial and Commercial Bank of China (ICBC) issued US$2.2 billion of bonds in Singapore 2019 for green BRI projects. The Singapore-China partnership has also spawned several initiatives, including the flagship China-Singapore (Chongqing) Connectivity Initiative (CCI), which in 2019 expanded from connecting Singapore to Chongqing to connecting Western China to ASEAN in general.

Singapore's engagement with China through BRI is part of its broader geopolitical strategy to 'sozialize' China to its neighbourhood in South East Asia and to promote rules-based engagement. Singapore has simultaneously kept China at arm's length by maintaining close cooperation with the other geopolitical players in the region, such the US and Japan.

The strategy allows Singapore to hedge its bets and benefit from economic opportunities with China, without compromising its independent position. The partnership with the EU could fit well into the Singaporean overall strategy, especially when the US commitment to rules-based order has been less than enthusiastic under the Trump administration.

## Conclusion

As connectivity becomes a major feature of the new geopolitical chessboard, the EU would be well advised to build on the existing partnership with Japan and seek other like-minded countries in Asia. The priority must be working on some concrete projects with Japan to demonstrate the importance of this partnership.

But then countries like South Korea, Australia and Singapore should come into the mix. All support a rules-based approach to multilateral trade and investment. The recent free trade and investment agreements with Singapore would suggest that the SE Asian island state should be considered a priority partner for the EU in expanding its connectivity strategy with ASEAN. ■

**Antti Tulonen is a Research Fellow at the EU-Asia Centre**

# Riding through the storm

Marco Buti draws the main lessons out of five key moments in the euro crisis for the completion of EMU and the appropriate policy mix in the euro area

On 1 December 2019, after eleven years, I left the position of Director General of Economic and Financial Affairs at the European Commission. I have tried to encapsulate both a sense of this journey through the euro crisis as well as my policy conclusions in a CEPR Policy Insight by focusing on selected past episodes, some well-known, others less prominent (Buti 2020).

The 'moments' I've chosen are the following:

- Latvia, one of the 'Baltic Tigers', asking for financial assistance in November 2008, which could be seen as a prequel of the crisis in the euro area, with the sudden stops after the build-up of large imbalances and deep-rooted bank vulnerabilities.

- The G20 Meeting in Toronto in June 2010 where policy authorities (though with different degree of enthusiasm) 'declared victory' over the financial crisis and decided to start withdrawing the fiscal stimulus with a commitment to halve their deficit by 2013 and stabilising the debt ratios – a decision which in retrospect proved largely premature and economically very painful.

- The Deauville meeting in October 2010 between the then French President, Nicolas Sarkozy, and the German Chancellor, Angela Merkel, where a decision was made to bail in sovereign bond holders, which is widely accepted as having been pivotal for the euro area crisis.

- Mario Draghi's speech at Jackson Hole in August 2014 which started to change the narrative on euro area policy mix, with a call for fiscal stimulus and structural reforms to be deployed side by side with monetary expansion.

- As an 'extended moment', the developments in Greece, starting in 2010 with a dramatic revision of the Greek fiscal accounts, subsequent loss of market access and the need for the EU and the IMF to intervene in the context of a generalised loss of trust, culminating with the 'Grexit' debate in summer 2015 and Greece successfully exiting the programme in August 2018.



*While the jury is still out on the desirable fiscal trajectory in presence of ultra-low interest rates, there is little doubt that a long-lasting boost of public investment should be undertaken*

A reading across these episodes and the ensued policy responses lead me to draw eight lessons for European policy coordination and governance:

- **The way in which the crisis unfolded tainted the narrative on its nature. Because of Greece's fiscal crisis, we also viewed the other countries through 'fiscal lenses', which I believe to have been a mistake.** For instance, if Ireland had come to fall before Greece, perhaps different causes for the crisis would have been diagnosed for all programme countries, events would have unfolded quite differently, and we would probably be telling an altogether different story today.

  While Greece caused our diagnoses to be incomplete, we moreover also did not recognise at the time that the prior events in the Baltics were relevant for the euro area. The Baltic crisis in 2008 could have been used to inform programmes for struggling euro area countries and to prioritise adequate policy responses and reforms. Instead, they were perceived as unrelated developments.

  With the main focus on fiscal retrenchment, financial sector reform and recapitalisation of banks did not receive adequate priority at first. The proposal for creating Banking Union had to wait for the sovereign debt crisis and was only put forward in June 2012.

- **Financial crises even in small countries can have pervasive effects and a high potential for contagion.** This contagion risk was not perceived at the time. The crisis in the Baltics was seen as potentially having spillovers effect in the rest of Eastern Europe, but the thinking was that individual IMF-EU programmes would suffice to tackle it. Similarly, as we learned painfully in the case of Greece, a crisis in a relatively small corner of the euro area could have lethal effects in the context of an incomplete currency union, lacking appropriate lending of last resort and risk sharing mechanisms.

- **Financial markets operate according to 'horizontal and vertical lines'.** Financial markets do not exert gradual pressure on borrowers, or, in other words, market sentiment change rapidly from benign neglect to extremes.

  As the Deauville episode shows, it is a daring undertaking to rely on markets to discipline countries. The non-linear behaviour of markets is heightened by exclusive focus on risk reduction, which, if not coupled with risk-sharing measures, can actually increase risk. At the same time, as market sentiment can change quickly, any fiscal misbehaviour can be punished harshly.

  This is a warning to high debt countries on the need to keep their debt credibly on a downward trajectory. Even wrong messages tailored to domestic political constituencies can lead to dear consequences – as Keynes famously quipped, *"markets can stay irrational longer than you can stay solvent".*

- **A certain amount of risk sharing is needed in EMU: either via national budgets or via the ECB balance sheet.** In order to function properly – as with any currency union – EMU requires a certain amount of risk sharing. This can either be accomplished directly via fiscal risk sharing (via the national budgets, a euro area central fiscal capacity or a common safe asset) or – in a less transparent way – via the balance sheet of the ECB. The euro area chose the latter. The limits of this choice, however, are evident today as the ECB has become overburdened in fulfilling its mandate.

- **Monetary policy cannot be the only game in town.** There is a growing consensus that today, with monetary policy facing increasing constraints, a more active role of fiscal policy, in particular by countries with fiscal space, is needed. Experience also shows that, in the aftermath of deep crises, early withdrawal of fiscal support can be very damaging and lead to an unbalanced policy mix.

The logic of Sargent and Wallace's (1981) *"unpleasant monetary arithmetic"* is that unless countries conduct prudent fiscal policy, the independence of monetary policy can be called into question via pressure for monetising the debt. However, paradoxically, excessive fiscal prudence may also be a form of fiscal dominance: when monetary policy is at the effective lower bound, fiscal inaction hampers the effort of the central bank to fulfil its mandate. Hence, in today's world, Sargent and Wallace's argument is turned on its head.

- **Achieving an appropriate euro area fiscal stance only via horizontal coordination of national policies is exceedingly difficult.** Over the past several years, it has proven politically impossible to attain an adequate fiscal stance for the euro area as a whole via bottom-up coordination.

  When a broadly acceptable overall stance was achieved, that took place via the wrong distribution between countries, in violation of their respective fiscal space. This was not fully recognised during the crisis, but since then, the issue has received more attention.

  A central European fiscal capacity complementing the national budgetary policies is needed to achieve the required fiscal stance for the euro area and, if well designed, also help to better enforce the common fiscal rules at country level.

- **EU-level decisions should be insulated as much as possible from domestic political economy considerations.** It has proven very difficult to make the swift decisions and stick to them even on matters with potentially high relevance for market sentiment and financial stability. More generally, processing policy decisions only through 'moral hazard lenses' may not lead to sound policies.

Whilst providing the right incentives for policymaking is essential, moral hazard considerations have to be tempered by the need for urgent policy responses. This is particularly true in times of economic and financial stress, for instance as was the case in Greece, or in the sovereign debt crisis in the euro area in 2011-12.

- **Programme work exposes to political risks.** The Commission paid a hefty political price for running the rescue programmes together with the IMF and ECB. It was criticised from both sides of the spectrum: on the one hand, it was perceived as being an agent of the creditors and enforcer of austerity in vulnerable countries; on the other hand, the Commission was also unpopular among governments and the public in countries like Germany, where it was perceived as being too lenient.

  These perceptions were unfortunate, since the Commission's North Star has always been the common interest of Europe and its citizens. The decisive role of the Commission in averting Grexit is a case in point. The larger responsibilities in crisis management attributed to the ESM will in the future help dispel the perception of the Commission as the 'agent' of the Eurogroup.

I believe the above lessons have important implications for the next steps in the completion of the EMU architecture. They should also lead us to reflect on a better policy mix to ensure balanced and sustainable growth.

As to the architecture of EMU, we need to do the following:

- **Complete the Banking Union.** A crucial insight guiding the design of the Banking Union has been that risk reduction requires risk sharing, and the latter should be seen as insurance, not as a one-way street.

- S**et up a European fiscal stabilisation capacity.** While an appropriate fiscal stance is needed to achieve a balanced policy mix, it has become increasingly clear that achieving it solely via national coordination is very difficult, underscoring the usefulness of a central fiscal capacity (Buti and Carnot 2018).

- **Increase the democratic accountability of European integration.** As argued in Buti and Krobath (2019), a move from the intergovernmental method, which gained ground during the crisis, back towards the community method would improve both efficiency and accountability.

- **Strengthen the international role of the euro.** A fundamental condition for that is completing the EMU, also in terms of governance, including addressing the relative scarcity of euro denominated safe assets (Acedo Montoya and Buti 2019).

The current slowdown and lacklustre medium-term growth prospects also indicate that the fiscal, monetary and structural policy mix needs to be changed. As Mario Draghi stated in his speech in Sintra (2019), monetary policy needs to remain patient, persistent and prudent. Fiscal policy needs to fulfil the three Ts as identified first by Larry Summers (2008): timely to be effective, targeted by focusing on high multipliers expenditure and – possibly – temporary.

While the jury is still out on the desirable fiscal trajectory in presence of ultra-low interest rates, there is little doubt that a long-lasting boost of public investment should be undertaken. One such example would be quality-investment to ease the environmental transition.

Complementing Draghi's three Ps for monetary policy and the three Ts from Summers, I propose three Fs for structural reforms: they should be feasible to be effective in the short term instead of aiming for unrealistic goals;

forward-looking, for instance regarding environmental issues; and fair, by incorporating distributional concerns and moving away from the perception of reforms as 'blood and tears'.

Joining the letters, they spell TFP, a fitting acronym to capture today's economic and policy predicament in Europe. ■

**Marco Buti is the Head of Cabinet of Commissioner Paolo Gentiloni at the European Commission**



*References*

*Buti, M and N Carnot (2018), "The case for a central fiscal capacity in EMU", VoxEU.org, 7 December.*
*Buti, M (2020), "Economic Policy in the Rough: A European Journey", CEPR Policy Insight 98.*
*Acedo Montoya, L and M Buti (2019), "The euro: From monetary independence to monetary sovereignty", VoxEU.org, 1 February.*
*Buti, M and M Krobath (2019), "Should the Eurozone be less intergovernmental?", LUISS Policy Brief, August.*
*Draghi, M (2019), "Twenty Years of the ECB's Monetary Policy", speech at the ECB Forum on Central Banking, Sintra, 18 June.*
*Sargent, TJ and N Wallace (1981), "Some unpleasant monetarist arithmetic", Federal Reserve Bank of Minneapolis Quarterly Review 5(3).*
*Summers, L (2008), "Why America must have a fiscal stimulus" Financial Times, 5 January.*

*Author's note: I write in my personal capacity and the expressed opinions should not be attributed to the European Commission. I would like to thank Philipp Jaeger for his help in the preparation of this column. This article was originally published on VoxEU.org*

The Isle of Man is a modern jurisdiction with a strong emphasis on quality, high standards and efficiency, providing a first class service.

A Red Ensign jurisdiction with a customer focused Flag State administration, offering pragmatic, and swift customer service to ship and yacht owners, managers and builders globally.

The Isle of Man is home to the award winning Isle of Man Ship Registry which is leading the way when it comes to technology and digitisation and one of the first flag states to issue digital certificates to ships.

## AN INTERNATIONALLY RESPECTED FLAG OF CHOICE

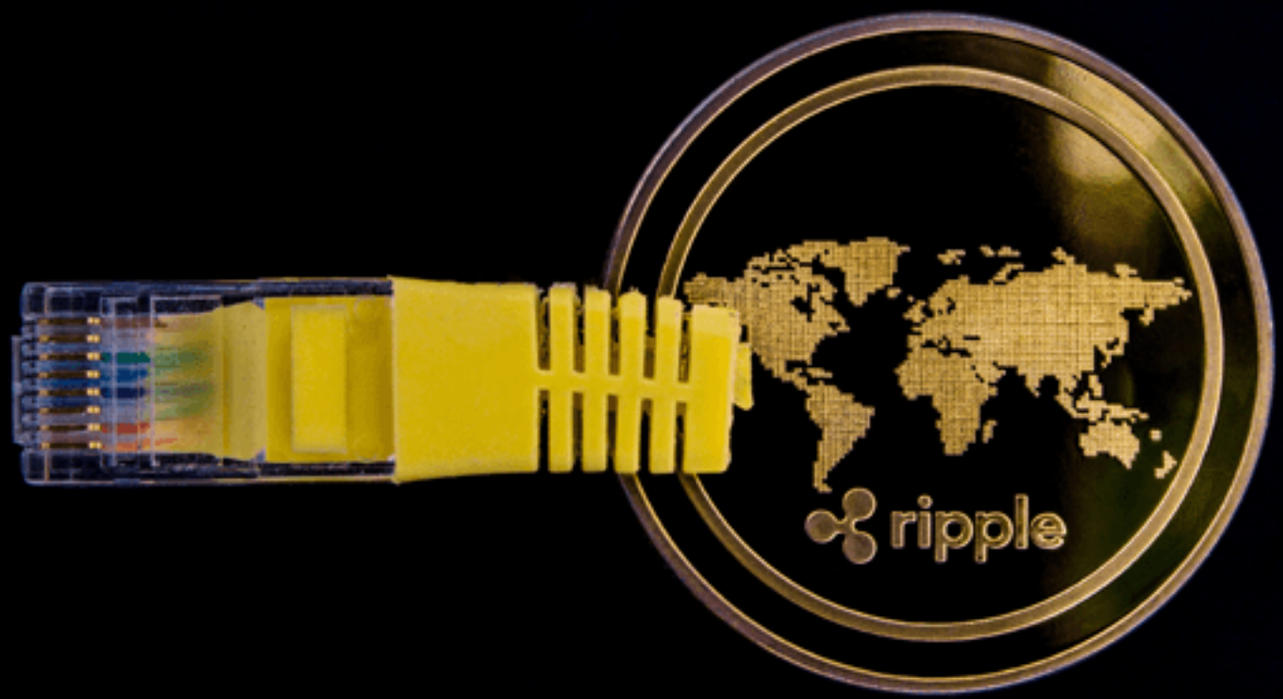
- Ability to issue fully digital certificates
- Online systems for finance and endorsement applications
- 24/7 emergency response
- Out of hours registrations
- Transparent charging structure with a single annual fee
- Network of surveyors in key global locations
- Appointed representatives in Greece, Singapore and Japan
- First place ranking on the 2018 Paris MoU White List
- Strong PSC Performance – Tokyo MoU White List & USCG Qualship 21
- Awarded 'Best Shipping Registry 2019' by World Commerce Review

Isle of Man
Ship Registry

# WHY CHOOSE THE ISLE OF MAN?

E: shipping@gov.im
T: +44(0)1624 688500
W: www.iomshipregistry.com
@IOMShipRegistry
@Isle of Man Ship Registry

# Ahead of the GAME




WCR sat down with Euro Exim's Graham Bright to talk about the $22 trillion cross-border payments market, the disruptive effects of technology and how regulators will respond

**Graham Bright is Compliance and Operations head at Euro Exim Bank**

Traditionally, cross-border payments have been slow and expensive and the lag creates inefficiencies and extra costs for corporates that transact globally. How does Euro Exim Bank help with liquidity for cross-border trade?

Our participation with Ripple has been game-changing. From being an early supporter, we have rapidly implemented both the RippleNet real-time xCurrent payment capability and the On-Demand Liquidity (ODL) services.

By resolving the original problems of slow, costly transactions, the new dynamic of blockchain-enabled Ripple services brings speed, certainty and access to liquidity between two non-fiat currencies, allowing local firms to pay and be paid in local currency through the medium of guaranteed digital asset flows.

Technology has the promise to improve cross-border payments. Will DLT/blockchain solutions offer better and cheaper services, and lower the cost of compliance with AML/CFT regulation?

Investment in financial services technology has become mandatory for all institutions wishing not only to provide more savvy customers with fast, competitive and reliable systems, but

to remove legacy and create customer environments which meet ever changing expectations. Let us not forget that DLT and blockchain technologies are excellent enablers for the right use-case, and completely inefficient for others.

The key is finding the business area which is clearly defined and has agreed and used standards already in place. For example, a payment transaction has few fields of structured information, as does the structured data when assessing identity, address, passport or bank account details. So, in this setting, DLT/blockchain based dissemination of transparent immutable data between few parties already versed in transmission of such data is a relatively short implementation process and immediate benefit.

Industry experts have long said the next key area for DLT could be revolutionising trade finance, adding instructions, invoices, inspection certificates, insurance documents, bills of lading etc. to a chain, all viewable but not changeable by all parties to the transaction.

However lofty the ideal, the market is not yet ready. The ecosystem remains challenged through multiple standards, jurisdictions, document formats, regulatory processes, geographies, geopolitical forces and people costs.

Banks are responding to disruptors in an effort to retain market share in payments, and cross-border instant payments is the new battle ground. Why have traditional banks have fallen behind?

Burdened by regulatory, constant non-revenue generating changes to systems, procedures and training, banks are constantly playing catch up in their battle to maintain IT and service supremacy. And it is not just lack of investment holding them back but trying to meet the pressure from customers for smarter services.

As an example, imagine your institution has offices in 10 locations, with 50 branches and 2000 staff requiring a simple system upgrade. All applications will need to have been tested in non-banking time to avoid fall off of version support.

Banks may also test everything but may still risk catastrophic connectivity failure, such as rendering cash machines unusable over a bank holiday weekend. But this may be only one of a hundred planned mandated committed projects requiring enhancement across the whole of the banking arena, where some banks are still supporting multiple systems reliant on mission-critical code over 20 years old.

*[With] the untapped markets of East Africa, emerging manufacturing hubs and the BRI goods corridors spanning Europe and Africa, our role is clearly defined as the pre-eminent issuer of financial instruments driving and facilitating world trade*

It is no surprise that smaller focused challengers and disrupters are entering the market with customer on-boarding in minutes and cheaper, faster, future-ready services, which are breathing fresh air into a stifled, legacy based industry.

Clients want intelligent apps, accessible on smart phones from anywhere at any time and the new players are primed to take customers with their new delivery mechanisms. It remains to be seen how quickly major banks can catch up.

## Corporates are increasingly demanding digital, 'best-in-class' products and services. How could fintech innovations reshape the cross-border payments landscape?

Seemingly unencumbered by regulators, new entrants have developed totally digital solutions in the Cloud. Not for them the costs of building and maintaining *"bricks and mortar banks"* with branches. Not for them employing relationship managers, but rather using artificial intelligence, with automated interaction robot applications (BOTS) to 'converse' and assess true customer needs at a fraction of the cost of call centre staff.

Clients want agility, choice, ease of use and, failure to deliver means losing customers based on a single click.

It is the fintech companies, with innovative management looking to gain significant market share through lean, well designed systems, bypassing legacy applications, that will ultimately win, unless banks embrace and quickly implement competitive architectures.

There are several networks and consortia in the trade finance space. What are your thoughts about this going forward?

Competition is always good. And, again the objective is always to find the most suitable service providing least cost, highest coverage and best institution and client benefit at the right time for the appropriate purpose.

A key benefit is matching suppliers and buyers, reducing the investigation stage, reviewing tenders and appropriate parties to participate in a trade.

We are also evaluating new network offerings to see how these may be complementary to our business, and with which consortia to participate. Our ultimate goal is always improving our efficiency, reducing our costs and providing the best possible pricing and service to clients to encourage repeat business.

There is change on the horizon. Banks are increasingly leveraging new technology or working with fintechs in order to bring the cost down and increase the speed of international transactions. Target Instant Payment Settlement (TIPS) and the Single Euro Payments Area (SEPA) in Europe, The Clearing House's Real Time Payments (RTP) initiative launched in 2017 in the US, Singapore's Fast and Secure Transfers (FAST) and SWIFT GPI Instant are just some of the initiatives in place to encourage and support instant cross-border payments. What's next in terms of borderless trade?

The dream of true borderless trade is some way off. Whilst networks and collaborations exist which very much focus on established payments centres and their technology, let us not forget the rest of the world moving small volume or low value goods cross-border. For many, payments are complicated by lack of liquidity, costly access to

fiat currency, complex document and legal processes, corruption, poor infrastructure, lack of trust and regulatory barriers.

Free trade agreements, which currently number more than 400 worldwide are of strategic importance. As an example, the 16-country Regional Comprehensive Economic Partnership – RCEP, would be the world's largest when operational, spanning India to New Zealand, including 30% of global GDP and half of the world's people.

However, India have decided not to be part of the group, which would benefit all, making it easier for products and services of each of these countries to be available across this region focussing on trade in goods and services, investment, intellectual property, dispute settlement, e-commerce, small and medium enterprises, and economic cooperation.

Similarly, Nigeria have decided not to ratify the AfCFTA agreement. There continues to be gap between what various African countries need and what is produced on the continent. Collectively, African nations could reduce foreign imports and increase trade flows within the continent. For AfCFTA to succeed fully, more countries need to diversify their production of goods to better match the import needs of their neighbours.

So, whilst the speed and unhindered reach of payments traverse borders in seconds, the complex, difficult mechanics of physically moving the goods to ultimate often difficult and remote destinations where protectionism, isolationism, nationalism, self-interest and xenophobia still exist.

Particularly disadvantaged are landlocked countries as their goods navigate and negotiate across multiple countries towards ports, ultimately keeping costs high and remote economies uncompetitive.

## To what extent might new technologies reduce service shortcomings, and alter market structure by favouring market platforms over intermediaries, reshaping business plans and firm boundaries, or encouraging entry?

New technologies which can assist the financial markets and payments in particular, will change the financial landscape.

What does the future offer? The time-honoured system of developing relations with and building networks of correspondent banks will be redundant, surpassed by electronic networks offering account to account direct cross border access, seamlessly supporting payments in seconds, in real-time with dashboards and monitors providing full visibility of transactions and immediate notice of credit or debit.

Rather than just sending payment instructions, resulting in waits of up to 3 days for funds to be cleared, the latest technology allows true seamless, frictionless transaction reception and processing at a price and speed that customers now expect from 21st century providers.  Platforms will be the way forward.

## And how should regulators respond?

Regulators have a key role to play in ensuring that appropriate regulations and guidelines are in place as the dynamics of the payment and trade markets change.

Rather than taking a remote stance, and issuing new rules in isolation, regulators should take a pro-active position where they convene the new market entrants and traditional players. The objective? Protect the clients,

but also make it possible for new entrants to have clear guidance on what is mandatory and how services can unambiguously be delivered, in light touch regulation rather than heavy, complex to implement detail.

Regulators are a clear and experienced source of vital information for all service providers in the payments space and should be viewed not as a problem but consulted as partners.

## Financial inclusion and sustainability are key goals. How do see this developing with technology such as yours?

According to the World Bank, globally, about 1.7 billion adults remain unbanked - without an account at a financial institution or through a mobile money provider, mainly reliant on cash, especially in rural economies, where the age demographic remains important - often resisting latest technology trends.

Surprisingly, even for a developed economy such as the USA, the Federal Reserve estimated there are 55 million unbanked or underbanked adult Americans in 2018, which account for 22 percent of US households.

Our institution facilitates trade with countries across the African Continent, the Middle East and Asia. Many of these countries are classified as third-world with low liquidity local banks, populations with many unbanked and excluded populations, however, mobile phones have for years made a significant in-roads into bank account ownership and e-wallet connectivity.

Our business relies on working with corporates with bank accounts and financial records, hence we are potentially locked out from major opportunities.

Whilst we may not have solutions to the continuing issues of restricted financial inclusion, our business model is attuned to ensure that companies in emerging and undeveloped countries can import effectively, fairly and economically and to realise their true potential.

From a sustainability perspective assessing profit, planet and people, before embarking on any agreements, we are careful to assess the environmental impact of trades, type of goods (responsibly sourced), working with buyers where fair-trade prevails and sellers/manufacturers pay fairly and treat their workforce with consideration and respect.

Our CSR policy is key, from charity fund-raising events raising thousands of pounds supporting hospitals and the underprivileged to local sponsorship of cultural events both at home, the Caribbean and in Africa, our organisation is pleased to provide regular support and awareness to those less fortunate than ourselves.

In addition to the company's stance on working with clients dealing in goods of ethical origin, Euro Exim Bank aims to reduce carbon emissions. As an international bank with a growing global footprint, its management actively demonstrate its commitment to good causes and making a difference for underprivileged, disabled and disadvantaged communities across the globe and the environment.

## In conclusion, how do you see Euro Exim developing going forward?

Our technology platforms are future-ready and blockchain-enabled incorporating advanced payment mechanisms with digital assets, enabling trade through issuance and relay of financial instruments such as Letters of Credit and Standby Letters of Credit that keep the circle of global goods moving.

Our business expansion is leading to creation of a significant sales team in India, and more country specific offices in Africa, Middle East and Asia. These will serve emerging markets and challenge existing areas where major banks are tactically withdrawing through de-risking.

The potential from the untapped markets of East Africa, emerging manufacturing hubs and the BRI goods corridors spanning Europe and Africa, our role is clearly defined as the pre-eminent issuer of financial instruments driving and facilitating world trade.

With Asia and Africa being the fastest emerging and growing markets for trade, Euro Exim Bank has uniquely positioned itself to serve buyers across the continents. ■

**Graham Bright is Compliance and Operations head at Euro Exim Bank**

# Open source – and why it matters in financial services

The financial sector is being transformed by digital technologies. Mark Hermeling considers how open source software is driving the transformation

Open source software is software whose source code is made freely available and may be redistributed and modified according to the requirement of the user. The roots of the approach lie in the individual passion and enthusiasm of groups of software developers and programmers.

Even today, the term is widely associated with the principles of cooperation, collaboration, transparency and community-oriented development, developers enhancing each other's work and exploring new initiatives and innovations together in a positive spirit of partnership.

Yet, at the same time open source has evolved from collaboration at the cutting-edge of computing to firmly establish itself as a mainstream commercial model. Today, we are seeing a rapid and fast-accelerating uptake of the software by businesses.

According to a recent report by research firm, MarketsandMarkets, the global open source services market size is expected to grow from US$11.40 billion in 2017 to US$32.95 billion by 2022, at a Compound Annual Growth Rate (CAGR) of 23.65% during the forecast period (2017–2022).

Historically, financial services has not been at the forefront of this growth but today it is seeing strong growth in open source software take-up. Over the past decade, open source has been widely used to help run back-end servers, in database technologies and in analytics. During the past 12 months, however, adoption has reached a turning point in this sector.

## What's driving growth today?

Partly, this is being enabled by a growing focus on digital transformation across the sector. According to a 2019 survey by BDO, 97% of financial services firms are making some sort of inroads on digital transformation - whether

they're in the process of developing a strategy or already implementing one. And 21% list developing a digital transformation strategy as their top digital priority.

Institutions are now using more open source partly to help them reduce costs as they scale. Technological innovation and automation is required to help them to achieve this and open source helps with accelerating the pace of innovation, providing an opportunity to leapfrog legacy technologies. Not taking this approach puts firms at a disadvantage and necessitates them playing catch-up with their industry peer.



*In addressing a move to open source, firms should look to leverage the help of curated, open source solution providers*

Given the crosswinds still impacting the financial services industry, this will be all but impossible. Competition is high with more industry consolidation to come. At the same time, firms that are essentially fintechs with a banking license, ie. challenger banks and asset managers, compete with traditional firms and have often leapfrogged their high-cost, legacy infrastructure.

However, financial services firms are also moving to open source because they are seeing productivity benefits from the approach that allow them to deliver projects more quickly. An increasingly broad set of community-maintained functionality has become available and there is a growing ecosystem and skill base that both solution providers and internal IT departments can leverage, making it easier for them to attract and retain talent.

As well as helping clients reduce software and infrastructure costs, the increasing adoption of open source is fuelling innovation across the sector and has become increasingly key for firms across financial services. Open source is ideal to use in sandbox environments and laboratory environments, often leap-frogging existing legacy technology stacks.

Open source helps firms prototype and run proof of concepts of new products and services out much more cheaply. In other words, the threshold for sandboxing different approaches has become a lot lower, driving up the propensity to innovate. The psychology of engineers also often fuels further innovation.

Typically, they like to work on cutting-edge projects. They also often appreciate the peer recognition they will get from contributing to open source projects. It is also the case that using the software makes it easier for firms to start small on new projects without having to go through a protracted procurement or tendering process.

This in turn can deliver crucial time to market advantages, accelerate the development process and – through lower cost - quickly build a portfolio of innovative projects. Across the financial services industry generally, we see a host of open source database technologies emerging that help to collect, collate and crunch relevant data.

On the client interaction side, we have seen a lot of work done using open source on visualisation and helping with customer interaction as well as the technology being used in opening up transaction histories to clients.

There are a lot of start-ups in the financial service sector also that sometimes compete with the more established players and sometimes provide components that are used by the banks and asset managers themselves. This latter group in particular, benefit from open source technologies used to underlie the user interface to clients.

We are also seeing significant innovation permeating the risk and financial modelling side of the business. In addition to all this, the use of open source helps firms avoid all the pitfalls and dangers of 'lock-in' associated with proprietary tech.



Another reason why we have reached a tipping point driving the ongoing usage of open source in financial services is the growing acceptability of cloud infrastructures to firms across the sector, especially compared to five years ago. Adopting open source typically means deploying cloud native apps and migrating workloads to public or private cloud built on open source infrastructure.

Open source often provides foundational technology, including programming languages, libraries and database technologies that can provide a rich foundation to quickly develop applications. That, coupled with an increase in the uptake of managed services options, is making open source still more attractive to financial services businesses – and is further driving innovation within these organisations.

The use of open source also helps to enhance systems security, including cyber-security, for financial services firms. That's because if an organisation is using open source technology that is being leveraged by a large community, it is unlikely, statistically speaking, that it will be the first to catch a bug.

## Fuelled by the cloud

In addition to the drivers highlighted above, the uptake of open source by financial services firms is also being driven by the growing prevalence of cloud resources. In fact, the two technologies often go hand-in-hand. One of the reasons they are such a good combination is the fact that they came of age together. Open source NoSQL database technologies like MongoDB and Cassandra are highly-scalable, flexible and good for big data storage and processing, all qualities that the use of the cloud can further support.

The two technology areas complement each other really well. Traditional applications, using eg. a commercial RDBMS as a database, can of course be shifted to the cloud but will not necessarily benefit from scale advantages and the more flexible way of provisioning resources that cloud infrastructure brings.

Today, adopting open source typically means deploying cloud native apps and migrating workloads to public or private cloud built on open source infrastructure. Open source often provides foundational technology, including languages, libraries and database technologies that can provide a rich foundation to quickly develop applications.

Firms can maintain cost-effectiveness, while tapping into the expertise of the open source user community. Also, deploying open source in the cloud allows firms to adopt a more agile opex-based model, sourcing capacity when they need it, which in turn leads to lower capital expenditure.

In addition, open source technologies have to be weighed against the increasingly deep and proprietary tech stack offered by the main cloud providers as they can provide some insulation against the problem of vendor lock-in. That, coupled with an increase in the uptake of managed services options, is making open source still more attractive to financial services businesses and further driving innovation within these organisations.

## Why managed services matters

A managed services approach can, after all, play a key role in helping financial services firms overcome the challenges they may face today as they migrate over to a cloud-based approach. Firms will, for example, need to ensure they are picking the right open source projects where they will attain optimum value and also ensure they are using the right open source tools.

Just as in the world of commercial software, there will often be a range of competing tools available to them which could potentially be used to tackle a problem and choosing the right one is critical. Some technologies, such as Python, Spark and Cassandra, have caught enormous momentum. Others may have lost it. So it is important that firms do their normal sourcing homework.

Aside from these more general challenges, financial services firms will be likely to have more specific data management issues that they need to address. They may well want to use NoSQL database technology that came out of open source for data management purposes. Cassandra is good for time series data modelling, while Spark is effective as a data processing framework.

As financial services firms look to get more out of their data and source more data, data scientists need to be properly equipped both with the requisite data preparation and data quality solutions as well as with the tools they would need to analyse the data and test their data models.

In addressing a move to open source, firms should look to leverage the help of curated, open source solution providers that both understand the cloud and use open source themselves and therefore benefit from some of the advancements that have been made in order to deliver cost-effective scalable solutions.

It is important in this context to look at the breadth of innovation and of the proposition a provider is offering more generally. To tap into far-reaching data management benefits it is worth seeking out firms and solutions that offer a broad data management proposition encompassing not just core data sourcing and mastering but also exploration and discovery, leveraging the innate benefits of the Cassandra/Spark stack.

Providers can also help with the consultancy element. While many banks and asset managers have caught on quickly to the potential offered by open source, providers can help here by explaining the choices they have made when it comes to the open source components they use.

By partnering with a commercial provider, firms will also be able to access the support they require. In other words, instead of taking on the onus for leveraging the technology alone, the onus will be on the provider to deliver the underlying technology, which will often also involve using various cloud infrastructure providers.

All this will enable financial services organisations to optimise their deployment of open source and get the most they can out of the technology today. ■

**Mark Hermeling is the CTO at Asset Control**

Disruptive technologies such as Artificial Intelligence (AI), Robotic Process Automation (RPA) and Application Programme Interfaces (APIs) are turning the financial services market upside down, freeing them from traditional processes and enabling them to meet the increasing demands of customers today.

Financial services such as banks and insurance providers have never before been faced with such stiff competition and coupled with the introduction of regulations and compliance have had to step up to attract and retain both customers and employees.

PWC states that over a third (37%) of all global financial institutions already have a fintech service for their customers. It is estimated that over $70 billion was invested in 2019 across the sector on fintech. So it is evident that companies and organisations view fintech as part of a strategy to help improve their services and remain ahead of their competitors.

## Safe in the cloud

When implementing new and innovative technologies and applications you need to ensure that you have a robust and reliable infrastructure which is why most organisations and companies move to the cloud.

The cloud provides scalability which is essential in financial services as there are more transactions which results in an increased strain on the company infrastructure. It is also more cost-effective as you don't have to invest in hardware and software, and is often presented in a modular model so you can rent the services. The most effective way of moving to the cloud is via a technology partner who can provide a managed service; they will advise on the best technology for your business, design a roadmap and manage it, freeing your team up to focus on other areas and the wider digital transformation journey.

Many companies fear that they won't get a new cloud solution approved but it is not a matter of ripping out your existing infrastructure and technology. Your legacy infrastructure and technology can be protected and utilised so you can adopt a hybrid network via the cloud. Some companies such as HSBC have built out a multi-cloud application network to meet demand where thousands of APIs were deployed across multiple environments using containers to unlock legacy systems and power cloud native application.



*It's not about the future, it is about now, and now is the time for the financial services market to embrace and welcome digital transformation*

Another advantage of cloud is that it enables technologies and applications to be easily integrated with it. The cloud is the foundation for fintech ecosystems, where you can integrate technology to create a seamless, end to end integrated solution to improve the customer or back and front office services. Providing a secure and resilient platform where third parties can design, build and run applications effectively.

## Creating an ecosystem

Financial businesses need to expand their services for customers ensuring that their own platforms and technologies integrate seamlessly with technology from partners; providing them with more choice on how to manage their services.

Capgemini states that the open banking trend may be overtaken as the banking ecosystem partnerships become more accepted and the industry will re-bundle services. The next phase is Open X – a shared marketplace that leverages data extensively and collaborates with other players to provide customers with a seamless experience.

## Technology transforming services

Banking and insurance services rely on telecommunications and contact centres so it is imperative that you have the correct unified communications technology in place for internal and external communications to flourish.

Companies need to focus on delivering a seamless customer experience enabling customers to travel through their journey with ease and first-time resolution. It is crucial to offer a range of communication channels for the customers to use including: the telephone, email, web chat and social media which can all be delivered through a multimedia contact centre. No less than 85% (PWC) of people agree to using bank services would agree to pay a regular fee to receive social media notifications from their bank.

A Forrester survey revealed that 64% of the survey respondents said their greatest obstacle is creating a single view of customer data and information when improving CRM capabilities. More than half acknowledged they struggle with creating customer insight to drive decision-making.

When a customer service agent deals with a customer's enquiry they are often faced with several screens, this is cumbersome and difficult to manage. Technology partners integrate a digital assistant into the contact centre so customers and agents are presented with a single user interface where all interactions can be completed on a single screen. This helps to make the customers' journey seamless, and makes the agent's job easier at the same time, enabling them to deliver a better experience.

## The personal touch

Now customers want a personalised service, they don't want to be handed over many times to different agents and repeat their personal information. Intelligent call-based routing uses CRM records and intuitive self-service options so customers can connect to the right people and services at the right time. This helps resolve queries quickly and effectively. Inbound automation speeds up low touch interactions and frees up the best skilled contact centre agents to solve complex customer issues and add value to interactions.

Screen pops can enable the agents to see who the customer is, what they have bought in the past, presenting them with their history. This reduces frustration and increases efficiencies with the enquiry, it also makes the customers feel valued as they are experiencing a personalised service.

Other unified communications tools range from video and audio conferencing to remote and working from home solutions, mobile and collaboration solutions such as Microsoft Skype for Business, Mitel UCA and Avaya One-X. These solutions enable you to facilitate voice calls video calls, instant messaging, screen share and joint remote

collaboration on documents. They enable companies to expand their recruitment pool as employees don't need to be based in the office and also to extend the opening hours of a contact centre to deliver a 24/7 customer service.

## On the move

Mobile applications free customers to conduct financial services on the move, they can pay bills, make deposits, check balances and get alerts if there is unusual activity. Insurers are rolling out fitness apps, conduct mobile claims filing, micro insurance services and even have smart devices that monitor habits.

Mobile solutions leverage the power of the cloud by keeping services intuitive, personalised and simple for customers. Mobile is most significant change in the financial industry with 53% of 25-34 year olds conducting all banking on their mobile devices.

## Automating the customer journey

Technologies such as AI and RPA automate elements of the customer's journey to simplify it for them to reach a resolution faster without the frustration of being passed from one department to another.

*The Automation Study* by fintech firm Avalog revealed that 55% of banking professionals see AI, automation and robotics as a vital part of the future of financial services and 46%  want to improve customer experiences at 46%. Customer experience was important in staying ahead of the competition with 41% saying it was the priority and operational efficiency at 19%.

Implementing an AI virtual digital assistant in your contact centre improves customer service and the productivity of agents. The digital assistant has the ability to self-learn content from your website and or from customer

conversations that take place in webchat. They also have the ability to recognise and pre-empt the needs of customers during similar interactions in the future.

They can be programmed to produce answers to questions and resolve issues by completing web forms during conversations. When the customer wants to speak to a human they can be transferred to a customer service agent when necessary.

It is advisable to make the digital virtual assistant, the first point of contact for website users because often the initial stage is customers' information gathering or requesting answers to basic questions. This enables contact centre agents to focus on complex enquiries handing over information sourcing to the digital assistant.

## Increasing productivity

AI and RPA doesn't just vastly improve customer service it also increases efficiencies of staff and productivity. Business cloud research entitled *Taking Automation to the next level* revealed that when asked to look to the next five years 44% stated that to improve productivity would be their primary goal for automation.

Intelligent automation which combines RPA with AI and additional capabilities such as Natural Language Processing is enabling businesses to automate workplace processes in an agile, secure and effective way in both the front and back office.

## Real-time reporting

Evaluating and reporting is essential in financial services especially with the vast amount of data. Multimedia solutions enable you to access historical and real time reporting so you can see the entire picture and drill down to individual call and agent level for each communications method from the omni-channel.

You can respond instantly to changing traffic volumes and ensure that the service levels are maintained. With the historical reporting you can measure performance against objectives and key performance indicators, review play by play account of the contact centre and identify new ways to improve business processes.

Andy Marlow, Kelliher Insurance Group's Sales and Service Manager concludes,

> *"The integrated multi-channel contact centre and outbound dialling solution have helped the business to deliver a significant increase in sales. Not only because sales agents can make outbound calls faster now with automatic dialling and dial-in scripts. We can understand the actual volume of customers attempting to contact us outside our working hours. The amount of calls we were missing was astonishing. It led us to review our opening hours and to run a marketing campaign that saw our team call back all those clients who had been unable to get through. It created new sales leads that, previously, we were unaware of."*

Big data analytics is essential in financial service and provides organisation an opportunity to fully understand what each customer wants.

## It's all about the integration

The key to digital transformation lies in the integration, technology must be integrated into the front and back office for it to be truly successful. It needs to talk to your existing and new tech and apps to utilise what you have and what you need.

It is important to find a partner that specialises in integration and will work closely with you to discover your objectives and devise a tech strategy. They will need to understand how to utilise your existing technology and what you require, plus the importance of engaging with your employees to discover what tech they think will help

improve their customer service. Enabling you to deliver a comprehensive, integrated digital transformation strategy that will deliver improved comms, business processes and a superior customer service.

## Embracing now and the future

CIO's and CTO's need to embrace digital transformation by creating an creative and open culture where employees can work remotely, share data without being restricted by silos, make creative suggestions and not be scared to fail. This will help attract and retain top talent which is and will continue to be a challenge with the digital skills gap.

They will benefit from partnering with a solutions provider who will advise and work closely with them to understand what their objectives are and how technology can help them achieve them within the restriction of compliance and regulations but still make it easy to use and deliver a seamless service.

A common perception is that all technology projects need to be big and overwhelming and therefore take time to deliver ROI and if they don't they are abolished. This is not the case projects can be deconstructed into small and manageable projects that are easier to get approval on and to roll out.

It's not about the future, it is about now, and now is the time for the financial services market to embrace and welcome digital transformation to improve customer services, efficiencies, productivity and revenues. ■

**Jonathan Sharp is a Director at Britannic Technologies**

*World Commerce Review is pleased to announce that Euro Exim Bank Ltd has been awarded the Best Trade Finance Bank 2020.*

*The World Commerce Review awards celebrate achievement, innovation and excellence across several fields of endeavour. Our award programs are tailored to provide a comprehensive analysis of the very best in each market.*

*The WCR awards are recognised as the principal indications of professional conduct and excellence.*

*The selection panel took into account product innovation, on-going customer support and best practice criteria as well as a continuing commitment to deploying the best possible solutions for the benefit of their clients.*

# The digitalization of payments and currency

Technology firms are driving the digital transformation of payments. Lael Brainard examines some issues for consideration

Digitalization is enabling consumers and businesses to transfer value instantaneously, technology platforms to scale up rapidly in payments, and new digital currencies to facilitate these payments. By transforming payments, digitalization has the potential to deliver greater value and convenience at lower cost.

But there are risks. Some of the new players are outside the financial system's regulatory guardrails, and their new currencies could pose challenges in areas such as illicit finance, privacy, financial stability, and monetary policy transmission.

Given the stakes, the public sector must engage in order to ensure that the payments infrastructure is safe as well as efficient and fast, assess whether regulatory perimeters need to be redrawn or new approaches are needed in areas such as consumer data and identity authentication, and explore the role of central bank digital currencies in ensuring sovereign currencies stay at the centre of each nation's financial system.

These issues are complicated and consequential. I will only touch on them in the spirit of sketching out an agenda for the public sector along with the private sector and research community.

## Digital players

Technology firms—from BigTechs to fintechs—are driving the digital transformation of payments. Not only are the new players bringing innovation to the way payments are made between businesses and consumers and peer-to-peer, but they are bringing new business models that bundle payments with other activities in novel ways.

Payments have traditionally been a service provided by trusted intermediaries such as banks. The operations of banks and some related financial service providers, such as card companies, are subject to regulatory oversight for

sound risk management. Banks offer important consumer protections, including deposit insurance, error resolution, and fraud protection.

In addition to providing payments services, banks generally provide credit, with deposits providing stable funding. Many banks rely at least in part on legacy technology.



*The digitalization of currencies and payments is being driven by technology players that are bringing new business models to this space and fresh attention to age-old questions*

In contrast, BigTechs tend to be established platforms with massive user networks that provide payments in support of core nonfinancial services—ranging from commercial transactions to social engagement to mobile apps to search engines.

In China, the majority of consumers and businesses participate in two mobile payment networks, Alipay and WeChat Pay, which by some accounts handled more than $37 trillion in mobile payments in 2018[1]. BigTechs and fintechs typically leverage cloud-based platforms and computing power, along with mobile applications, often to provide different combinations of services and enhanced user experiences.

They generally benefit from network effects: the more users they have, the more convenience and benefit new users derive from joining. These network benefits may be augmented by leveraging economies of scale and scope in user data for a host of purposes, from prioritizing which information is pushed to users to allocating and pricing credit to sharing reviews.

The entrance of BigTech and fintech into payments may drive competition, enhance product offerings, and lower transactions costs. It has the potential to enhance financial inclusion by expanding the number and diversity of ways people gain access to financial services and by creating more consumer-friendly offerings. A Federal Deposit Insurance Corporation (FDIC) study found that 8.4 million households are unbanked and an additional 24 million are underbanked[2].

These households often rely on more-expensive means of payments, including nonbank providers and bank money orders. Many have smartphones, which could facilitate access to payment apps.

The entry of big technology networks into payments brings risks as well as benefits. Statutory and regulatory protections on bank accounts in the United States mean that consumers can reasonably expect their deposits to be insured up to a limit; their banks to be held to strong data security standards; many fraudulent transactions to be the liability of the bank; transfers to be available within specified periods; and clear, standardized disclosures about account fees and interest payments to be readily available.

Consumers may not appreciate that nonbank providers might not provide the same protections. Further, the integration of payments with a variety of consumer services that rely intensively on user data raises the urgency of questions surrounding data security, how consumers' financial data are used, and the circumstances under which the data are disclosed to third parties.

Unlike many foreign central banks, the Federal Reserve does not have plenary authority over payment systems. No federal agency does. The Federal Reserve has broad authority over payment systems that are designated as systemically important by the Financial Stability Oversight Council or that are chartered as entities for which the Federal Reserve is the primary supervisor.

These authorities cover two large-value interbank payment systems but no retail payment system to date. The banking agencies may oversee certain aspects of a nonbank payment system to the extent there is a bank nexus, under the Bank Service Company Act, or bank affiliation, under the Federal Deposit Insurance Act[3].

However, this oversight will be quite limited to the extent that nonbank players reduce or eliminate the nexus to banks, such as when technology firms develop payments services connected to digital wallets rather than bank accounts and rely on digital currencies rather than sovereign currencies as the means of exchange.

Given the growing role of nonbank technology players in payments, a review of the nation's oversight framework for retail payment systems could be helpful to identify important gaps. A good place to start may be contrasting the US oversight framework for retail payment systems with other jurisdictions. Many foreign central banks, for example, have explicit authority for general retail payments oversight[4].

Moreover, most jurisdictions require that payment systems obtain a license and/or registration before commencing operations. A 2018 World Bank study found that the large majority of jurisdictions have some sort of license and/or registration requirement for mobile money platforms, payment card networks or switches, or clearinghouses[5].

The United States requires registration of a money transmitter at the federal level for purposes of Bank Secrecy Act/Anti-Money-Laundering compliance, but it does not require broader federal oversight of payment system operators[6].

In contrast to other jurisdictions where there is explicit responsibility for broad regulation of payment systems, the Federal Reserve's role as an operator has instead long formed the basis of the US approach to promoting accessible, safe, and efficient payments. Since the Federal Reserve Banks opened for business around the country in 1914, as directed by the Congress, they have provided payment and settlement services in competition with private-sector providers.

## Real-time infrastructure

So let's turn to our retail payments infrastructure, which touches every American. While new players are making important contributions to the digital transformation of payments, it is critical that consumers and businesses can achieve the same speed and efficiency using their trusted deposit account providers with the safety and security

they have come to expect. To make this possible, it is vital to invest in real-time retail payments infrastructure with national reach.

Today, it can take a few days to get access to your funds. A real-time retail payments infrastructure would ensure the funds are available immediately—to pay utility bills or split the rent with roommates, or for small business owners to pay their suppliers. Immediate access to funds could be especially important for households on fixed incomes or living paycheck to paycheck, when waiting days for the funds to be available to pay a bill can mean overdraft fees or late fees that can compound.

Similarly, for small businesses, getting immediate access to funds from a sale in order to pay for supplies can be a game-changer.

The latest evolution in the payments infrastructure is faster payments, in which the payment message is transmitted and funds are settled between banks and made irrevocably available to recipients in real (or near-real) time. Consistent with the real-time and anytime nature of faster payments, settlement takes place in real time on a 24-hour, seven-day basis.

We are committed to closing the gap between the transaction capabilities in the digital economy and the underlying payment and settlement capabilities. Recognizing that consumers and businesses across the country want and expect real-time payments, and the banks they trust should be able to provide this service securely, this summer, the Federal Reserve announced that it is building its first new payments rail in more than forty years—the FedNow Service[7].

FedNow will facilitate end-to-end faster payment services, increase competition, and ensure equitable and ubiquitous access to banks of all sizes nationwide.

Together, the Clearing House's RTP and FedNow are moving the US banking system to real-time retail payments. These systems will enable consumers and businesses to settle retail transactions in real time, at any time, and allow them to manage their money with greater flexibility. RTP and FedNow should significantly increase the speed and efficiency of the US payment system.

Given the importance of safety in faster payments, providing access to more than one real-time payment service for back-up purposes will enhance resiliency. The Federal Reserve has always had a vital role in the payment system by providing liquidity and operational continuity in times of stress, and FedNow will extend this role into the real-time retail payments market.

The addition of FedNow should also provide a neutral foundation for private sector innovation in developing end-user services. Some stakeholders noted that a single provider that is owned and operated by one segment of the payment industry may focus on a limited set of use cases instead of the full breadth of possible use cases for faster payments.

The FedNow team is already hard at work determining initial business requirements. The comment period for the Federal Register notice seeking public input into FedNow features and designs closed in November, and we are analyzing the nearly 200 letters submitted[8]. We understand the urgency among stakeholders to launch FedNow quickly with features that support safe, efficient, and ubiquitous faster payments.

## Digitalization of currencies

Digital transformation of payments extends not only to the systems and players, but also to the medium of exchange[9]. The existing payments system combines central bank money, commercial bank money, and certain kinds of nonbank private money, which provide a medium of exchange based on the US dollar as a unit of account.

By contrast, some technology players have payment systems based on their own digital currency rather than the sovereign currency. Depending on their design and scale, private digital-currency-based payment systems could magnify concerns surrounding illicit activity and consumer risk, while potentially creating challenges for the public sector's ability to safeguard financial stability and use monetary policy to buffer the economy.

Central bank money is important for payment systems because it represents a safe settlement asset, allowing users to exchange central bank liabilities with confidence in their acceptance and reliability. In the United States, central bank money is composed of paper currency and money held in deposits at the Federal Reserve Banks.

Commercial bank money—money held in deposits at commercial banks—is widely used because consumers and businesses trust that the money they deposit with a commercial bank can be converted, on demand, into a claim on another commercial bank's money or currency. This confidence owes in large part to bank deposit insurance and the fact that commercial banks are supervised and regulated.

Nonbank private money based on the US dollar as the unit of account exists on a smaller scale for a variety of consumer uses, particularly in closed-loop payment systems like prepaid cards and digital wallets. In some cases, such nonbank private assets may have value only within the network, while in other cases, the issuer may promise convertibility to a sovereign currency, such that this becomes a liability of the issuing entity.

Although various federal and state laws establish protections for users, issuers of nonbank money are not regulated to the same extent as banks, the value stored in these systems is not insured directly by the FDIC, and consumers may be at risk that the issuer will not be able to honour its liabilities.

To provide a sense of the scale, PayPal Holdings Inc. had customer accounts that totaled $22.5 billion as of September 30, 2019; Walmart had roughly $1.9 billion in deferred gift card revenue as of October 31, 2019; and Starbucks reported $1.6 billion in stored-value card liabilities as of September 2018—more than the deposits at many banks[10].

In contrast, cryptocurrencies introduce separate units of account. Built using distributed ledger technologies, cryptocurrencies typically allow for peer-to-peer payments without the need for a financial intermediary. The private sector is exploring uses of distributed ledger technologies to create a wide range of payment instruments, some that are designed to resemble traditional commercial bank money, some that look similar to Bitcoin, and some that have attributes more similar to securities.

Cryptocurrencies vary across multiple attributes, including whether the arrangement is open to everyone or only approved entities and whether they are intended for general-purpose use or for wholesale use.

One important design choice is whether a digital currency is account-based or token-based. From an accounting perspective, there is an account structure for the asset owner and for the asset itself. Individual accounts could take the form of traditional account structures of commercial banks or be pseudo-anonymous. The accounting of the asset itself could take the form of debiting and crediting account balances or tracking of specific 'tokens'.

Another key design consideration is the method for authenticating the asset owner—to open an account and to make transactions. Traditionally, identity authentication is done by the account provider, but new tools, such as biometrics, may be required for decentralized systems. A third important design variant is convertibility. Private-sector digital currencies vary in important ways with regard to whether they are linked in a legally binding way to a sovereign currency.

A decade ago, Bitcoin was heralded as a new kind of digital money that would serve as a store of value, means of exchange, and unit of account delinked from any sovereign currencies without the need for centralized governance. Bitcoin has not achieved widespread acceptance as a means of payment or unit of account because of its extreme volatility, as well as limited throughput capacity, unpredictable transaction costs, limited or no governance, and limited transparency.

Stablecoins were designed specifically to overcome the volatility of first-generation cryptocurrencies by tying the digital currency to an asset or basket of assets, such as commercial bank deposits or government-issued bonds. Unlike first-generation cryptocurrencies, they may be issued by a central entity and rely on third-party institutions for some aspects.

But even within this broad class of digital currencies, stablecoins vary widely in their underlying reference assets and the associated 'exchange rate', the ability to redeem the stablecoin claims for the underlying assets, and the extent to which a central issuer is liable for making good on redemption rights.

Because Facebook has an active user network of one-third of the global population, the company's Libra global stablecoin project has imparted urgency to the debate over what form money can take, who or what can issue it,

and how payments can be recorded and settled. Any stablecoin project with global scale and scope faces a core set of legal and regulatory challenges.

Cryptocurrencies already pose risks associated with fraudulent activity, consumer losses, and illicit activity, and these could be magnified by a widely accepted stablecoin for general use. Not only is it not clear what protections or recourse consumers would have with regard to their global stablecoin transactions and balances, but it is also not clear how much price risk consumers will face in cases where they do not appear to have claims on the stablecoin's underlying assets.

If not managed effectively, liquidity, credit, market, or operational risks—alone or in combination—could affect financial stability, triggering a loss of confidence and run-like behaviour. The precise nature of the risk would be driven in part by how the stablecoin is tied to an asset (if at all), the underlying legal arrangements, and the features of the asset itself.

For smaller economies, there may be material effects on monetary policy from private-sector digital currencies as well as foreign central bank digital currencies. In many respects, these effects may be the digital version of 'dollarization', with the potential for a faster pace and wider scope of adoption.

## Central Bank Digital Currencies

The prospect for rapid adoption of global stablecoin payment systems has intensified calls for central banks to issue digital currencies in order to maintain the sovereign currency as the anchor of the nation's payment systems. In a Bank for International Settlements survey of 66 central banks, more than 80 percent of central banks report being engaged in some type of central bank digital currency (CBDC) work[11]. The motivations for this work range from payments safety and robustness for advanced economies to payments efficiency for emerging economies.

The latest survey suggests there is greater openness to issuing a CBDC than a year ago, and a few central banks report that they are moving forward with issuing a CBDC. Building on the tremendous reach of its mobile payments platforms, China is reported to be moving ahead rapidly on plans to issue a digital currency[12].

Given the dollar's important role, it is essential that we remain on the frontier of research and policy development regarding CBDC. Like other central banks, we are conducting research and experimentation related to distributed ledger technologies and their potential use case for digital currencies, including the potential for a CBDC. We are collaborating with other central banks as we advance our understanding of central bank digital currencies.

In assessing CBDC in the US context, there are policy and design issues to explore, as well as legal considerations. It is important to consider whether a new form of digital central bank liability might improve the payment system, taking into account the innovations offered by the private sector.

We would need to consider whether adding a new form of central bank liability would reduce operational vulnerabilities from a safety and resilience perspective. Another consideration is whether a CBDC would reduce complexity in payments, improve end-to-end processing, or simplify recordkeeping.

With regard to cross-border payments, it is important to consider what would be required in terms of cross-border cooperation for CBDCs to address current frictions and reduce costs.

It is also vital to consider the implications for the broader financial system of the issuance of a CBDC. In light of considerations of privacy and guarding against illicit activity, issuance of a digital currency would raise important questions about what kinds of intermediaries might provide CBDC transaction accounts for consumers. While some proposals are centered on commercial bank intermediaries, others propose new types of intermediaries that might

develop with a narrow focus on payments. New types of intermediaries in turn could create a need for new types of accounts and new forms of oversight.

Related to this, the design of any CBDC needs to address important questions surrounding financial stability. A variety of approaches have been put forward to address the potential run risk associated with the ability to convert commercial bank deposits into CBDC with a simple swipe[13].

There are also important legal considerations. It is important to understand how the existing provisions of the Federal Reserve Act with regard to currency issuance apply to the CBDC. It is also important to consider whether CBDC would have legal tender status, depending on the design.

While the legal framework is well-established with regard to the rights and protections for Federal Reserve notes in the current system, it is untested for new instruments such as CBDC and, more generally, other digital currencies. A different approach may be necessary to ensure that holders of CBDC have appropriate protections, including privacy rights, fraud protection, digital identity safeguards, and data protection.

These are some of the issues that would need to be addressed before deciding to issue a CBDC in the United States. Some of the motivations for a CBDC cited by other jurisdictions, such as rapidly declining cash use, weak financial institutions, and underdeveloped payment systems, are not shared by the United States.

Physical cash in circulation for the US dollar continues to rise because of robust demand, and the dollar plays an important role globally. We have a robust and diverse banking system that provides important services, along with a widely available and expanding variety of digital payment options.

## Agenda ahead

The digitalization of currencies and payments is being driven by technology players that are bringing new business models to this space and fresh attention to age-old questions. While the potential for seamlessly integrated and lower-cost transactions brings important benefits, digitalization also brings risks.

In the United States no less than in other major economies, the public sector needs to engage actively with the private sector and the research community to consider whether new guardrails need to be established, whether existing regulatory perimeters need to be redrawn, and whether a CBDC would deliver important benefits on net. ■

**Lael Brainard is a member of the Board of Governors of the Federal Reserve System**

*Endnotes*

*1. Frank Tang and Doug Palmer, "U.S.-China Trade War Deal Could Be Too Late for the Likes of Mastercard, American Express and Visa," South China Morning Post, April 2, 2019.*

*2. Federal Deposit Insurance Corporation, FDIC National Survey of Unbanked and Underbanked Households 2017 (PDF) (Washington: FDIC, October 2018).*

*3. The Bank Service Company Act grants the federal banking agencies the authority to regulate and examine third-party service providers that perform certain services for supervised banks. The Federal Deposit Insurance Act provides the banking agencies with enforcement powers to address unsafe and unsound practices, violations, and breaches of fiduciary duty by supervised banks and their institution-affiliated parties.*

*4. Bank for International Settlements, Committee on Payment and Settlement Systems, Policy Issues for Central Banks in Retail Payments (PDF) (Basel: BIS, March 2003). In some countries—such as Australia, the Netherlands, and Singapore—*

*the central bank oversees all retail payment systems, whereas in others—such as Canada, Switzerland, and the United Kingdom—the central bank oversees systemically important payments, while another authority oversees payments that are not systemically important.*

*5. World Bank Group, Payment Systems Worldwide: A Snapshot (PDF) (Washington: World Bank, September 2018).*

*6. For example, PayPal and Square are organized as money services businesses in the United States and subject to regulation by most states, while PayPal is organized as a bank in Luxembourg, and Square is licensed as an authorized payment institution in the United Kingdom.*

*7. See Lael Brainard, "Delivering Fast Payments for All," (PDF) (remarks at the Federal Reserve Bank of Kansas City Town Hall, Kansas City, Missouri, August 5, 2019).*

*8. Federal Reserve Actions to Support Interbank Settlement of Faster Payments, 84 Fed. Reg. 39,297 (PDF) (August 9, 2019).*

*9. See Markus K Brunnermeier, Harold James, and Jean-Pierre Landau, The Digitalization of Money (PDF) (Princeton: Princeton University, August 2019), for a comprehensive analysis and references. See also Tobias Adrian and Tommaso Mancini-Griffoli, The Rise of Digital Money (Washington: International Monetary Fund, July 2019), and Darrell Duffie, Digital Currencies and Fast Payment Systems: Disruption is Coming (Stanford, CA: Graduate School of Business, Stanford University, May 2019).*

*10. PayPal, Form 10-Q, September 30, 2019, retrieved from https://sec.report/Document/0001633917-19-000210/; Walmart, Form 10-Q, October 31, 2019, retrieved from http://d18rn0p25nwr6d.cloudfront.net/CIK-0000104169/fcd4b7f8-578b-430b-90a3-9be0e6b51dec.pdf; Starbucks, Fiscal 2018 Annual Report, https://s22.q4cdn.com/869488222/files/doc_financials/annual/2018/2018-Annual-Report.pdf*

*11. Cordruta Boar, Henry Holden, and Amber Wadsworth, Impending Arrival—A Sequel to the Survey on Central Bank Digital Currency (Basel: Bank for International Settlements, January 2020).*

*12. See Yuan Yang and Hudson Lockett, "What is China's Digital Currency Plan?" Financial Times, November 25, 2019; and Scott Horsley, "China to Test Digital Currency. Could It End up Challenging the Dollar Globally?" National Public Radio, January 13, 2020.*

*13. Michael Kumhof and Clare Noone, "Central Bank Digital Currencies—Design Principles and Balance Sheet Implications," Bank of England Staff Working Paper no. 725 (London: Bank of England, May 2018).*

*Author's note: I want to thank Darrell Duffie for inviting me to discuss the future of payments. I am grateful to Paul Wong and Jacqueline Cremos of the Board of Governors of the Federal Reserve System for their assistance in preparing this text. These remarks represent my own views, which do not necessarily represent those of the Board of Governors or the Federal Open Market Committee. This article is based in a speech delivered at the Symposium on the Future of Payments, Stanford, California, February 05, 2020*

# What does the future hold for Facebook Libra?


The move to bring more affordable transactions to the masses may have been well-intentioned, but Christoph Strnadl believes the future of Libra is in doubt

The news that Facebook is now rethinking its plans for Libra is unsurprising. Originally announced as a way to bring more affordable transactions to the masses, Facebook's proposal for a new digital currency has had no shortage of criticism.

Originally set for launch this year, Libra promised to transform the payments landscape, taking power away from the fat cats where financial control had typically lay. Instead, it would be the Libra Association who controls the currency and transactions, an organisation consisting of technology companies, venture capitalists and payments organisations, many of whom have since cut ties.

Perhaps unsurprisingly, the project was met with considerable resistance from EU and US regulators, the US senate included. Now, after months of pressures and pushback from regulators and politicians alike, Facebook's plans for Libra have shifted.

The Libra coin will no longer be the centrepiece of its digital payments strategy which instead, will also *"support existing government-backed currencies"* (It is unclear to me whether that means crypto-euros or crypto-dollars or simply a trivial fiat money account).

While the move to bring more affordable transactions to the masses may well have been well-intentioned, Libra was infeasible from the beginning for several reasons – here's why.

## Blockchain as a first choice

First, Libra's technology architecture raises doubts. Cryptocurrencies and blockchain are highly complex technologies and using them to implement a shared database to support a mere 1,000 transactions per second (a bit more in the future) for a few dozen members of the Libra Association may prove to be over-engineered.

In fact, there are countless other database technologies which could achieve the same means for a fraction of the cost of a distributed ledger implementation. It therefore remains unclear as to why blockchain was chosen to support this solution at all – if not to ride the hype surrounding this new technology.

## A complicated governance

Second, another question centres around how Facebook Libra would be governed. Facebook's claims state *"decentralised governance"* and that a *"global currency"* should be governed as a *"public good"* – but the facts say something entirely different.

*The fact that the Libra association is not answerable to any outside entity beside Swiss law enforcement raises further doubts around its feasibility*

The Libra association, its entry conditions, and its (incomplete) governance structure and processes are anything but independent or beneficial to the public. For instance, even if a company wanted to spend the $10 million entry fee, Facebook (or later, the Libra Association at large) would still have the last word on its admission.

Nobody needs to be reminded about the $5 billion fine that Facebook accepted from the FTC for grossly violating user privacy in the Cambridge Analytica scandal. This happened despite all the assurances Facebook gave its users of the improved controls it had implemented because of another earlier FTC Commission Order from 2012.

The fact that the Libra association is not answerable to any outside entity beside Swiss law enforcement raises further doubts around its feasibility. After all, any public good needs to have public oversight.

In the recent hearing on the Libra project, Mark Zuckerberg faced a thorough cross-examination before the House Financial Services Committee. This included questions over discrepancies found regarding data privacy in Libra and how Facebook can safeguard user data, ultimately avoiding another Cambridge Analytica scandal.

## Learning from past mistakes

Finally, a global currency, or any public good for that matter, cannot and must not be governed by any private entity. This is because it will inevitably, and despite the best of intentions, result in one company gaining a monopoly or a tyranny.

Similar ideas existed as early as in the 19th century when mining and logging companies established their truck wages and company scrip systems, all in the name of the cash-poor workers. All these schemes, which have been deployed and tried all over the world, not just in the US or the UK, were long ago declared unlawful. This was

because of the egregious mark-ups the monopolists extorted from their employees, resulting in peonage and slave-like conditions for them.

We see yet another irregularity in the fact the Swiss Libra Association is registered as a not-for-profit organisation. This status merely serves to disguise who the true financial beneficiaries would be. During the congressional hearings in the wake of the Libra announcement, Libra officials repeatedly stated that they do not regard Libra to be a bank. Clearly, they want to avoid the accompanying oversight as much as possible.

However, on a deeper level, this is the signature of an insatiable appetite for global dominance, a *coup d'état* or *coup du monde*, perfectly in line with Mark Zuckerberg's 2009 claim that *"in a lot of ways Facebook is more like a government than a traditional company."*

## The future of Libra in doubt

The departure of several founding members from the Libra Association signalled a slow start for the project, casting doubt that it will reach the 100 members for which it had hoped this year. Instead, it kickstarted a change in direction which may put the whole future of Libra into question.

Facebook's revisited approach, to have its Calibra wallet now support multiple currencies of which Libra will be just one, will certainly work in principle. This would provide users with greater flexibility for online transactions. However, it also minimises the initial ambitions of the Libra coin.

We have seen similar approaches being successfully implemented in normal banking over the years, driven by the EU's PSD2 regulation; and any decent crypto-exchange has long been offering mobile wallets carrying all crypto-currencies and assets traded on their platform.

Although ultimately, the revised Libra approach will likely fail because of its pedigree and ill-conceived architecture. After all, who would want to have a company monitor, control, and censor their financial transactions, crypto or otherwise, which displays *"the ethics of Uber, the censorship resistance of PayPal, and the centralisation of Visa, all tied together under the proven privacy of Facebook"* (to quote Twitter's Executive Director of Open Privacy, Sarah Jamie Lewis)?

In light of the fact that there are competitors out there, like Austria-based Bitpanda, which not only falls outside the scope of the US Cloud Act, but also honours privacy by design and privacy by default as mandated by Europe's GDPR. I think the answer is *"no one."* ■

**Christoph F Strnadl is VP Innovation & Architecture at Software AG**

# Libra as a currency board: are the risks too great?


The Libra Association claims it will be analogous to a currency board regime. Julia Anderson and Francesco Papadia write that they have overlooked the problems of monetary management that come with it

Facebook's Libra project to create a digital currency has had a difficult start, with criticism from authorities, and the departure of some founding members. Libra's critics have mostly focused on risks associated with money laundering, financial stability and data privacy. But the project also raises questions about monetary management.

Libra's promotors present it as a payment system innovation. It is, however, also a new monetary system, because it implies the creation of a new currency—at least in the project's initial form—and because the Libra Association itself has characterised its approach as *"similar to the way in which currency boards (eg. of Hong Kong) have operated."*

Currency boards are a type of monetary system in which the issuer balances its liabilities with assets in the form of foreign currency. For example, the Hong Kong Monetary Authority issues its own currency—the Hong Kong dollar—and holds US dollars on its asset side. Similarly, Libra would hold a basket of high quality and liquid assets, such as bank deposits and government securities, against Libra issuance.

Libra is thus analogous to a currency-board regime. And yet, Libra's proponents have so far overlooked the problems of monetary management that a currency board raises.

Destabilising shocks threaten all monetary systems and Libra would be no exception. To ensure their stability, successful currency boards like Hong Kong's require active management and discretionary interventions. But unlike a traditional currency board, the Libra issuer would be a private association, not a legally-mandated monetary authority.

And Libra is a profit-making endeavour, without the tools that can assure stability. Such differences have significant implications for the Libra currency, which the Libra Association has so far glossed over.

## Managing Libra

In currency boards – and Libra – the issuing entity holds different items on the two sides of its balance sheet and must ensure consistency between them (eg. Libra coins on one side, a basket of high-quality assets on the other). But shocks will inevitably hit both the asset and liability sides of the Libra issuer's balance sheet, potentially disrupting this consistency.

Shocks to Libra would not have this destabilising effect should the issuer allow shocks to fully affect the value of its liabilities, ie. if it lets its currency float freely. But letting the currency float would contradict Libra's stated aim

*Creating a new monetary system, such as Libra, seems a disproportionate and potentially ineffective approach to achieving a safe, stable, cheap, simple and instantaneous global payment system*

of stability, where 'stability' is explicitly understood in terms of purchasing power in relation to real goods. Libra is *"designed to be a currency where any user will know that the value of a Libra today will be close to its value tomorrow and in the future."*

Shocks would also not have this destabilising effect if the shocks affecting the two sides of the balance sheet are always small or, if large, are very closely correlated. However, financial history shows it would be very imprudent to base the entire construction on this unwarranted assumption.

In fact, experience with currency boards (and metallic monetary systems) shows that the maintenance of a peg (to reserve assets) requires very active protection.

On the liability side, in particular, changing expectations can generate significant destabilising shocks. In national currency boards, conflicting government interests might drive fears that the government will abandon its commitment to maintaining the peg in order to pursue some macroeconomic goal, as Argentina did in 2002.

In private currency boards, the profit motive plays the role that macroeconomic interests play for national currency boards. Libra holders might fear that, when opportunities for profit arise, the Libra Association will violate its commitments, eg. that it issues liabilities in excess of its assets, that it suspends convertibility or even that it debases Libra. There are many historical examples of such cases, for instance in metallic monetary systems.

One Libra-specific vulnerability would be the issuer's right to change the composition of reserves. Such changes would, according to the project, be exceptional and subject to strict decision-making. This feature, however, might drive speculative activities: if Libra holders expect a composition change that could imply a jump in value on the asset side of the balance sheet, speculation could drive demand for Libra up or down for fairly long periods.

The very low yield that could be earned, now and in the foreseeable future, from holding highly liquid and high-quality reserves, might drive deviations from Libra's commitment to maintaining the peg. Holders might fear that Libra will succumb to the temptation to chase yield, for example by changing the composition of Libra reserves to enhance the meagre return on its assets – ie. giving more weight to less liquid and less creditworthy, but higher-returning, assets.

The temptation to look for yield could be aggravated by two distinctive features of Libra:

- Interest on the reserves will be used to pay dividends to the currency's first investors. These first investors, however, also happen to be Libra board members whose financial interests might conflict with the stability of the system. Libra's incentive structure thus has a tendency to encourage instability.

- Libra Association members will be subject to limited liability, undermining the credibility of the association in satisfying fully the claims of Libra holders.



## Stability strategies

As we have seen, asymmetric shocks threaten the stability of currency boards and Libra would be no exception. Nevertheless, some currency-board systems, such as Hong Kong's, have proved resilient. To ensure sustained maintenance of the peg to reserves, successful currency boards include strong stabilising mechanisms.

These amount to: (i) an organisational set-up that allows for intervention in case of shocks, and (ii) operational tools to implement such decisions. One solution for Libra could be to adopt its own stabilising mechanisms. To assess whether this might be possible, Libra can be compared to the currency board of Hong Kong.

Hong Kong's currency board, introduced in 1983, has proved long-lasting. This success most certainly drives Libra's explicit comparison of itself with the territory's monetary system. However, Hong Kong's success rides on a complex framework.

Firstly, the Hong Kong Monetary Authority (HKMA) maintains a greater than 100% reserve. The equity buffer represents insurance for the HKMA's ability to defend the currency peg, enhancing the system's credibility.

Secondly, the HKMA has high transparency standards and commits to public outreach. HKMA market operations are announced immediately, and relevant data is published daily. Prior to any major reform of the system, HKMA officials inform market participants about the changes, and research is published to provide background information and explain the rationale.

Furthermore, the HKMA releases the minutes of the meetings of the currency board governing committee, and currency board accounts data and other statistics are published every month.

Most importantly, the success of Hong Kong's currency board depends on active management – both mechanical and discretionary interventions:

- The mechanical stabiliser involves automatic intervention by the HKMA to sell or buy the Hong Kong dollar when capital inflows or outflows push the exchange rate outside a narrow. These interventions cause the monetary base to expand or contract, putting downward or upward pressure on interbank interest rates, which counteract the original capital flows and ensure that the exchange rate remains stable. In other words, interest rates offset, at least partially, the effects on exchange rates of capital inflows and outflows.

- The HKMA has powers of discretionary intervention, which have been used twice since a reform in 2005 to address rising demand for the Hong Kong dollar ahead of large stock market launches (see here, for example). Furthermore, the HKMA intervenes intermittently in the money markets to stabilise interest rate differentials with the US. The interventions rein in differentials, when needed, by selling exchange fund bills and notes, thus soaking up excess cash, or vice versa.

## Lessons for Libra

Hong Kong shows that a complex framework with demanding features, including active management, is needed to maintain consistency between the currency on the liability side and a foreign currency on the asset side in the face of potentially offsetting flows.

Can the Libra Association adopt the tools used in Hong Kong to guarantee the stability of its currency? Will a mechanism, provided by profit-motivated 'authorised resellers', arbitraging between the value of Libra and that of reserves, be robust under all circumstances, like that provided by the HKMA?

As we have discussed, the possibly disruptive effect of expectations is particularly challenging. When the market has doubts about the maintenance of the dollar peg of the Hong Kong currency, in either direction, the central bank intervenes to reassure the market (ie. it indirectly adjusts interest rates and carries out quantitative interventions).

With Libra, no entity has clear responsibility to respond to shocks (such as those generated by changes in expectations). Who will stand ready to defend Libra in the event of a crisis? Even if an entity was given responsibility for managing Libra, it might lack the tools necessary to discharge this task.

Four tools missing so far from Libra are: (i) equity buffers, (ii) interest rates, (iii) transparency and proactive communication and education, and (iv) a legal mandate.

First, it is difficult to see how Libra will accumulate the equity necessary to intervene and offset potential imbalances between its assets and its liabilities (ie. accumulate a greater than 100% reserve). Libra is supposed to invest in liquid and high-credit securities. But these are exactly the securities that have very low and even negative yields now and, looking at forward rates, in the future.

For instance, a composite security made up of GDP-weighted US, German, French, Japanese and UK Treasury bills would have a yield of 0.88% – hardly likely to lead to the accumulation of a protective buffer. Most probably, Libra will rather have problems in breaking even.

Second, the Libra board will not have interest rates as an important stabilising tool. HKMA interventions work by affecting the demand for (or supply of) the Hong Kong dollar through interest rates. But Libra is stuck with a 0% rate, meaning its board would be unequipped to similarly affect the demand for (or supply of) its currency to counter destabilising flows.

Third, stable expectations around currency boards are built on transparency and proactive communication. The extent to which we can expect a profit-driven enterprise to meet the standards of a legally-mandated public institution is very much an open question.

Finally, in the absence of a legal mandate, it is not clear that the necessary stabilisation tools would be effective in the hands of the Libra Association. Availability of the tools could stabilise expectations, but in the face of enticing

profit opportunities (or major losses), might holders not rightly question the Libra Association's commitment to use the stabilising tools?

Regulation might overcome some of the challenges we have discussed, for example, if there were an obligation to create an equity buffer. However, regulating a global currency such as Libra will require deep cross-border coordination and a genuine acceptance of regulation.

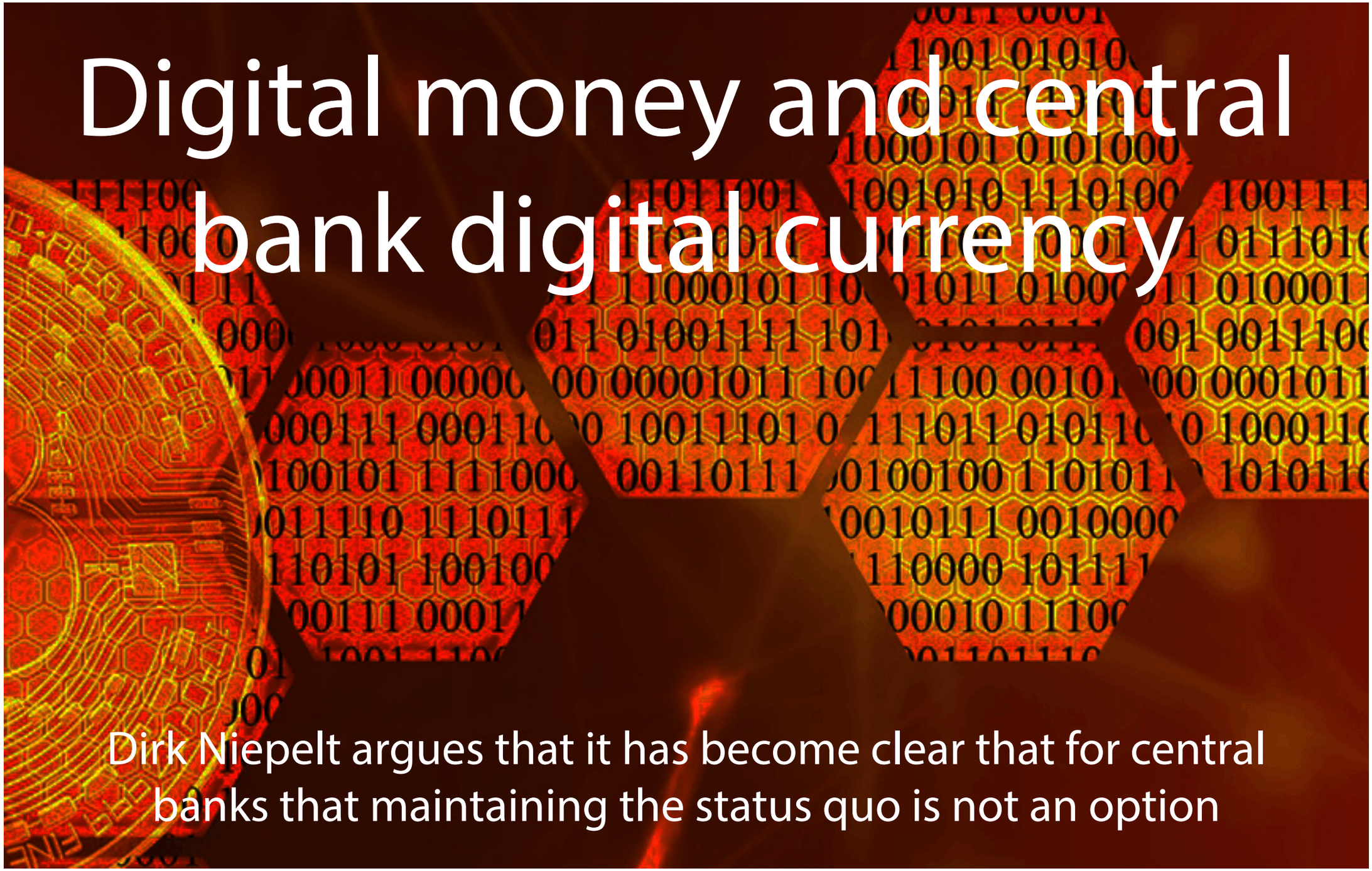
Creating a new monetary system, such as Libra, seems a disproportionate and potentially ineffective approach to achieving a safe, stable, cheap, simple and instantaneous global payment system.

Developing and internationalising instant payment systems, such as the European Central Bank's Target Instant Payment Settlement, seems a more fruitful option. ■

**Julia Anderson is a Research Assistant and Francesco Papadia is a Senior Fellow, at Bruegel**

*This article was originally published on Bruegel*

# Digital money and central bank digital currency



Dirk Niepelt argues that it has become clear that for central banks that maintaining the status quo is not an option

Central banks already issue digital money, but only to a select group of financial institutions. Central bank digital currency would extend this to households and firms. This column examines the proposal for such currency and assesses the opportunities and risks. It argues that while preparations for the launch of Libra have not proceeded according to plan, it has become clear that for central banks, maintaining the status quo is not an option.

In central banks, finance ministries, and international working groups, discussions about digital money and central bank digital currency (CBDC) have moved to the fore (BIS, 2020). It seems useful to take stock. What are we actually talking about? What do we know? And what should policymakers do?

## Finance has been digital forever – what's new about 'digital money'?

'Digital money' is a misnomer. Households and firms have long held digital money balances, in addition to notes and coins. Banks have issued digital money – demand deposits – for decades. And central banks have done likewise, issuing reserves, but only to commercial banks.

What has changed in recent years is the ease with which users can access their money and spend it. Fintech and Big Tech have led the way (and banks have followed) towards more transaction convenience, at the cost of sacrificing personal service and privacy. Moreover, blockchain-based technologies which decentralise the storage of information and its trustworthy transmission increasingly allow to cut out the middleman (Petralia *et al*. 2019).

Initiatives like the EU's Payment Services Directive 2 or Open Banking in the UK promote new business models. Legislators and regulators still learn how to deal with these models when they exploit synergies between finance, data mining, and scraping; and how to codify property and identity in the mobile phone age.

## Does the nature of money change?

Payments may change, but the nature of money does not. Most monies in use are liabilities, typically of the central bank or a bank, even though credit card companies, Paypal, or M-Pesa may intermediate between the issuer and the holder. Securities or real assets on the asset side of the issuer's balance sheet are the counterpart to these liabilities; they back the money, at least partly.

In contrast, many 'cryptocurrencies' – most prominently, Bitcoin – are unbacked bubbles. Bubbles derive value from the hope that somebody will stand ready to pay for the bubble in the future.



*CBDC would strengthen the monetary policy transmission channel. Changes in central bank policy rates would more directly feed through to the rates faced by households and firms*

## What is central bank digital currency?

In addition to banknotes and other liabilities, central banks issue digital money – reserves – but only to a select group of financial institutions. The central bank digital currency proposal, which dates back to the 1980s (Tobin, 1985, 1987), is to eliminate this restriction. Households and firms also should have the possibility to acquire reserves.

'CBDC' is a misnomer, again. The innovative part of CBDC is not its digital nature, but broad access. A more fitting name would be 'Reserves for All' (Niepelt 2015).

## What is the link between CBDC and the blockchain?

There is no direct connection. CBDC is widely accessible digital central bank money; many technologies may be used to deploy it. Digital central bank money could be stored in accounts (as reserves are), on prepaid cards, or on decentralised database structures, to name just a few options (BIS 2018).

Of course, the choice of technology would have implications for ease of use, liquidity, privacy features, etc.

## Would CBDC have macroeconomic effects?

This depends on the central bank. When issuing CBDC (without simultaneously retiring other liabilities), the central bank gains funds. As a matter of accounting these funds are invested, somewhere[1]. By passing the funds to the banking sector, the central bank has the option to insulate bank balance sheets even if households or firms reallocate funds from bank deposits to CBDC.

In fact, it can shield not only banks but the whole economy. The result that CBDC need not have any macroeconomic effects holds under broad conditions (Brunnermeier and Niepelt 2019).

It does not hold if CBDC-based payments require more or less resources than deposit-based payments; or if many transactions require deposits and cannot as easily be made with CBDC. More relevantly, CBDC could change macroeconomic outcomes if the central bank chose not to pass the funds through to commercial banks but to invest them elsewhere, for instance due to political constraints (Niepelt 2020).

## Would CBDC foster bank disintermediation and bank runs?

Not if the central bank passes the funds raised by issuing CBDC through to the banking sector, as described above. This pass-through policy renders explicit the implicit guarantees in present-day monetary regimes.

The argument that the introduction of CBDC would expose banks to a funding squeeze disregards the asset side of the central bank's balance sheet. But as a matter of accounting, the central bank must invest funds raised from CBDC issuance somewhere; the decision where to invest is key. Even if central banks were to opt against pass-through policies, it is not clear that the risk of bank runs would rise. Households and firms can swiftly move funds from bank to government accounts already today (in the US, through Treasury Direct). There is little concern that this could trigger bank runs.

## Why consider CBDC at all?

CBDC in combination with policies other than the pass-through policy outlined above would likely have macroeconomic consequences, both positive and negative. Moreover, it would have microeconomic effects.

## What opportunities does CBDC offer?

CBDC would spur competition in the payment industry. This would also lower transaction costs for international payments where lack of competition (often due to regulation), not technology is the bottleneck.

CBDC would strengthen the monetary policy transmission channel. Changes in central bank policy rates would more directly feed through to the rates faced by households and firms. Currently, deposit rates barely respond to monetary policy (Drechsler *et al*. 2017).

CBDC, if adopted, would reduce the 'too big to fail' problem. One motivation to support struggling banks derives from the fact that bank failure puts strain on the payment system – a key pillar of the economy. Since payment system failure is not an option, so is bank failure.

If many households and firms transacted using CBDC rather than deposits the social cost of bank failure would be lower, and so would be the motivation to provide state support. With less need for state support, regulatory constraints on banks could be relaxed.

CBDC would help maintain monetary sovereignty. It takes a lot for society to abandon the national currency. But if digital payment instruments issued by other monetary authorities (or a private intermediary such as the Libra Association) offer much more convenience or safety, a tipping point will be reached and the local currency will be dumped.

Such 'dollarisation' is a well understood phenomenon in countries with weak monetary institutions (De Nicolo et al. 2005). Countries issuing their 'own' CBDC (without restricting other payment options such as cash transactions) are less prone to suffer from dollarisation and its consequences, in areas ranging from public finances (seigniorage) to national security.

CBDC could reduce the risk of bank runs. With a (partial or full) pass-through policy, the central bank would replace some of the retail depositors that hold bank liabilities. As a large player, it would internalise run externalities and

could better stabilise the supply of bank funding. CBDC would resolve an awkward contradiction in many countries: while the public sector issues the legal tender, legal constraints on cash use effectively prevent households and firms from making larger payments with government issued money.

That is, the state prohibits citizens from using the state's money. With CBDC, households and firms could make all payments with legal tender even if the constraints on cash use remained in place.

## Where do the risks lie?

Many risks are political. A longer central bank balance sheet could invite demands from special interest groups (for example, for cheap funding of specific industries). A pass-through policy would also make the distributive effects of the monetary system more transparent. This could strengthen the resistance against bank support. Or, to the contrary, it could lead to stronger support for bank subsidies if they were perceived to relax funding constraints for households and firms.

Other risks are more subtle. Network effects might undermine the user base of cash once CBDC is introduced (Agur *et al*. 2019), and this might weaken the political support for cash. Some see this as a benefit rather than a risk because the abolition of cash would enable the central bank to lower interest rates far into negative territory without triggering cash withdrawals, thereby empowering monetary policy (Bordo and Levin 2017). Others who believe that cash provides a welcome protection against extreme monetary policies will disagree.

## Do the opportunities justify the risks?

This varies from country to country. The tipping point at which society could adopt a foreign currency is distant in some countries and nearer, or more threatening, in others. Some monetary authorities would welcome more foreigners holding the national currency (to generate seigniorage), while others would not because of possible

effects on the exchange rate. Lack of competition in the banking sector and limited financial inclusion are important policy problems in some parts of the world, but less pressing in others.

Finally, a private sector 'synthetic CBDC' (Adrian and Mancini-Griffoli 2019) invested in a portfolio of reserves would affect the demand for national currencies very differently, depending on whether they were included in the portfolio or not; accordingly, the fiscal and monetary implications of the synthetic CBDC would differ across countries.

Whether the opportunities justify the risks also depends on one's personal views. CBDC should be more attractive to those who favour a strong central bank and less regulation, at the cost of lengthening the public sector's balance sheet; and to those who reject the notion that central banks should privilege banks.

## Do central banks have a choice?

Many central banks may end up with a limited set of options. Although preparations for the launch of Libra have not proceeded according to plan, 2019 has shown that the status quo has ceased to be an option. Central banks and the BIS have understood.

Monetary authorities are keen to maintain control over the payment system as well as the financial sector more broadly and to defend the attractiveness of local currencies. *Nolens volens*, they will try to keep up with developments in the private sector and in other monetary areas; they will introduce 'Reserves for All' or promote synthetic CBDCs of their liking (Niepelt 2019). ■

**Dirk Niepelt is Director of the Study Center Gerzensee and Professor at the University of Bern**

*Endnotes*

*1. Unless the central bank hands out CBDC for free, as a 'helicopter drop'.*

*References*


*Adrian, T and T Mancini-Griffoli (2019), "The rise of digital currency", VoxEU.org, 28 August.*

*Agur, I, A Ari and G Dell'Ariccia (2019), "Designing central bank digital currencies", unpublished.*

*Bank for International Settlement (2018), Central bank digital currencies, Report of the Committee on Payments and Market Infrastructures and the Markets Committee, March.*

*Bank for International Settlement (2020), "Central bank group to assess potential cases for central bank digital currencies", press release, 21 January.*

*Bordo, MD and AT Levin (2017), "Central bank digital currency and the future of monetary policy," NBER working paper 23711.*

*Brunnermeier, MK and D Niepelt (2019), "On the equivalence of private and public money", Journal of Monetary Economics 106: 27-41.*

*De Nicolo, G, P Honohan and A Ize (2005), "Dollarization of bank deposits: Causes and consequences", Journal of Banking & Finance 29(7): 1697-1727.*

*Drechsler, I, A Savov and P Schnabl (2017), "The deposit channel of monetary policy", Quarterly Journal of Economics 132(4): 1819-1876.*

*Niepelt, D (2015), "Reserves for everyone—towards a new monetary regime?", VoxEU.org, 21 January.*

*Niepelt, D (2019), "Libra paves the way for central bank digital currency", VoxEU.org, 12 September.*

*Niepelt, D (2020), "Reserves for All? Central bank digital currency, deposits, and their (non)-equivalence", International Journal of Central Banking (forthcoming).*

*Petralia, K, T Philippon, T Rice and N Veron (2019), Banking disrupted? Financial intermediation in an era of*

*transformational technology*, *Geneva Reports on the World Economy 22, ICMB and CEPR.*
*Tobin, J (1985), "Financial innovation and deregulation in perspective", Bank of Japan Monetary and Economic Studies 3(2): 19-29.*
*Tobin, J (1987), "The case for preserving regulatory distinctions", Chapter 9 in Restructuring the Financial System, Proceedings of the Economic Policy Symposium, Jackson Hole, Federal Reserve Bank of Kansas City, pp. 167-183.*

*This article was originally published on VoxEU.org*

# WHY BVI?

- Compliance with international regulatory standards
- Competitive start-up costs
- Innovative legislation
- Internationally renowned commercial court
- No currency controls
- Qualified professional pool of practitioners
- Strong partnership between public and private sectors

JURISDICTION OF CHOICE

# BRITISH VIRGIN ISLANDS

**Pioneering, innovative and leading** the way in global business solutions, the **British Virgin Islands (BVI)** is an internationally respected business and finance centre with a proven committment to connect markets, empower clients and facilitate investment, trade and capital flow.


BVI Finance
*your international business partner*

3rd Floor, Cutlass Tower, Road Town, Tortola, BVI VG1110
T: +1 (284) 852-1957 E: info@bvifinance.vg
W: www.bvifinance.vg | www.bviglobalimpact.com

# A European carbon border tax: much pain, little gain

Georg Zachman and Ben McWilliams argue that the EC should not make the implementation of a carbon border adjustment mechanism into a must-have element of its climate policy

## Introduction

The European Union is preparing the world's most ambitious climate goal: to reduce emissions by about 40 percent over the next decade[1] and to become the world's first carbon neutral economy by 2050. To do this in an efficient way, the outline European Green Deal would increase the price all polluters in the EU must pay for their greenhouse-gas emissions.

One major element of the proposals would be the introduction of a carbon border adjustment mechanism. According to the European Green Deal plan, such a mechanism will be proposed *"for selected sectors, to reduce the risk of carbon leakage"*[2] if differences persist in levels of climate ambition worldwide (European Commission, 2019). The European Commission plans to make a proposal for a border adjustment mechanism in 2021.

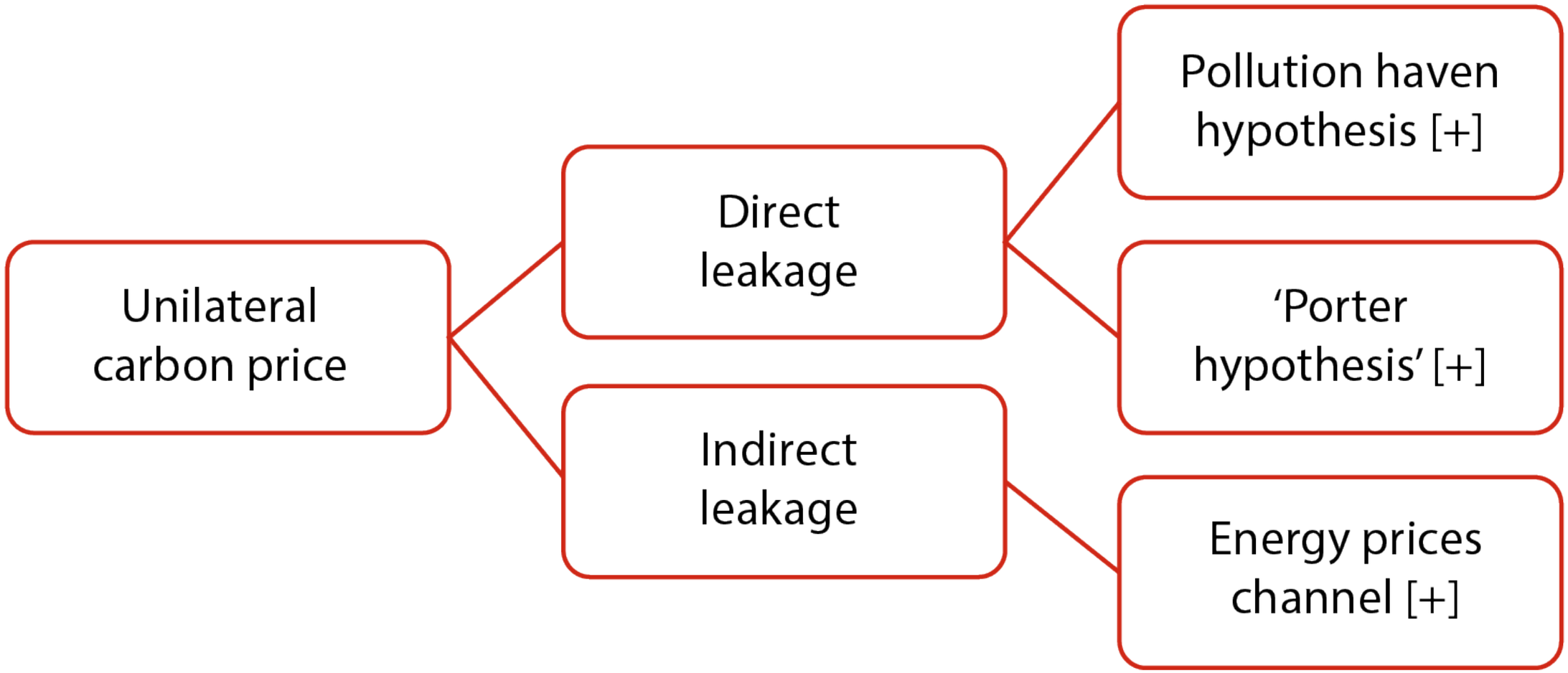
The EU should not make the introduction of a carbon border tax (CBT) that would tax the carbon embedded in imported products[3] into a must-have element of its climate policy. The existence of significant direct carbon leakage – which is the problem a CBT is designed to address – is mixed, and it would not be straightforward to design a CBT that is both politically/legally feasible and economically/environmentally meaningful.

Alternatives to CBTs should be considered (as we discuss later). The introduction of a CBT would be riskier, and would bring lower benefits, than alternative approaches to encourage global decarbonisation and preserve the competitiveness of EU industry during the transition to a zero-carbon economy.

## Deconstructing the evidence for carbon leakage

Carbon leakage describes the relocation by companies of their carbon-intensive production activities from regions with tight emission regulations (for example, high carbon prices) to regions with less stringent standards (for

**Figure 1. Theoretical channels of carbon leakage (+/- indicates positive or negative rates of leakage)**




*Source: Bruegel.*

example, lower carbon prices or no price on carbon). In such a scenario, stricter rules on emissions in one place fail to reduce overall emissions.

Carbon leakage deriving from more stringent unilateral climate policy should be differentiated from changes in trade patterns for other reasons – particularly the growth of imports from emerging economies, which increased the amount of embedded carbon irrespective of climate policy[4].

It is feared that, because of carbon leakage, stricter climate policies in the EU could lead to: (1) a loss of market share to foreign, more polluting, competitors, and (2) increasing emissions in other regions. This assumed leakage is at the core of arguments in favour of carbon border taxation (CBT).



*Ex-post studies of the ETS and other carbon pricing policies, have not yet found any significant evidence of carbon leakage*

## What makes the analysis so complicated?

An extensive literature has never been able to agree on the magnitude of carbon leakage for a certain environmental policy (for example, a €50/tonne $CO_2$ price).

Two extremes illustrate the uncertainty: in a worst-case scenario, an EU emission standard would kill a more-or-less carbon-efficient industry in the EU, leading that industry's products to be imported from countries with less carbon-efficient industries (and possibly also causing substantial trans- port emissions). The EU environmental standard would lead global emissions to increase under what is known as the pollution haven hypothesis.

In a best-case scenario, however, an EU environmental standard would stimulate the development of new, more efficient production processes in a sector, giving the EU a competitive edge and eventually replacing inefficient foreign production by cleaner EU production – known as the Porter hypothesis[5].

In addition, carbon leakage can operate through two channels:

- Direct leakage: in the short run, domestic carbon-intensive installations might reduce output, as output from equivalent foreign installations increases (operational leakage). In the long run, new capacities might primarily develop in countries with lower carbon prices (investment leakage). Both effects would lead to higher shares of carbon-intensive goods in imports.

- Indirect leakage, referred to in the literature as the international energy prices channel. In this situation, as EU climate policy leads to lower EU consumption of fossil fuels, global demand for fossil fuels would decline. As a result, fossil fuels prices fall. Lower prices encourage countries without climate policies to increase fossil-fuel consumption[6].

This distinction between direct and indirect leakage is important in the discussion of CBTs. A CBT might be effective in theory in mitigating direct leakage, but might have close to no impact on indirect leakage (Figure 1).

A multitude of studies have attempted to tackle these complexities and estimate the magnitude of leakage. Methodologies used range from ex-post econometric assessments of leakage in individual sectors, to ex-ante simulation of expected leakage based on large global equilibrium models.

## Ex-post empirical studies show no clear evidence for leakage

Ex-post empirical studies of the EU emissions trading system (ETS) and other sub-global carbon pricing policies, have not yet found any significant evidence of carbon leakage (Branger and Quirion, 2014).

For example, Naegele and Zaklan (2019) used data from the Global Trade Analysis Project and found no evidence that the EU ETS caused carbon leakage between 2004 and 2011 in European manufacturing sectors. Dechezlepretre *et al* (2019) used empirical evidence covering 2007-2014 from the Carbon Disclosure Project, which tracks the declared emissions of multinational businesses by geographical region.

Theoretically, multinational firms should be the most affected by carbon leakage. However, Dechezleprêtre *et al* (2019) found no evidence that the EU ETS has led to a displacement of carbon emissions from Europe to the rest of the world. World Bank (2019) concurred with these findings and concluded that there is little evidence that carbon pricing has resulted in the relocation to other regions of the production of carbon-intensive goods or of investment in such products. Competitiveness may remain a major concern for policymakers but *"these concerns should not be overstated"* (World Bank, 2019).

Costantini and Mazzanti (2012) used a gravity model to show evidence empirically for a strong Porter hypothesis – that innovation and productivity gains arise as a result of energy and environmental policies – in Europe from 1996 to 2007. They found that evidence for the Porter hypothesis varies depending on the sector and policy considered. Overall, environmental policies appear to have made EU exports more competitive.

Aichele and Felbermayr (2015) provided some empirical evidence for carbon leakage arising from countries' ratifications of the Kyoto Protocol. Their comparison of pre- and post-Kyoto periods (1997-2000 and 2004-2007) found that the imports of a Kyoto-committed country from an uncommitted exporter were about 8 percent higher than they would have been had the country not committed to the Kyoto Protocol. The carbon intensity of these imports was about 3 percent higher.

Ellis *et al* (2019) reviewed the empirical literature and concluded that limited competitiveness[7] effects had been found – any positive or negative effects have been small. The authors found that the only conclusive empirical evidence relates to innovation, where carbon pricing appears to have had a positive effect.

Thus, based on evidence from ex-post, empirical literature, there is no clear conclusion pointing to the existence of carbon leakage at the aggregate level. There might be several reasons for this, including that carbon pricing differentials have been relatively low so far, and that existing programmes have often included generous compensation schemes for exposed industries. At higher carbon pricing differentials, direct leakage might become more pronounced, either via the pollution-haven hypothesis or via the Porter hypothesis.

### Ex-ante modelling analysis shows the existence of limited carbon leakage, which is mainly indirect leakage

Researchers have also tried to understand ex-ante what the effects might be of a hypothetical future carbon price. Usually, they have used models[8] built on a wide base of socioeconomic, technological and other economic

assumptions, and have then looked to better understand the effects of altering a specific driver within an economy, such as the carbon price.

To analyse CBTs, global models have been used that offer insights into the interactions between sectors and countries through trade and fossil-fuel price channels. Such models have so far tended to find limited carbon leakage at the aggregate level.

For example, Böhringer *et al* (2012) summarised the findings of 12 advanced models. In a reference scenario in which a range of countries (Annex 1 of the Kyoto Agreement) agree a collective 20 percent emissions reduction, the mean average leakage effects are found to be 12 percent, falling to 8 percent with implementation of a CBT. This means that 12 percent of the emissions reductions achieved domestically by Annex 1 countries would be offset by an increase in emissions from non-Annex 1 countries – without implementation of a CBT[9].

The results suggest that a CBT could reduce the competitiveness disadvantages faced by the emissions-intensive and trade-exposed sectors. However, the global cost savings from a CBT would be small, with the burden of emissions abatement simply shifted to developing countries, exacerbating existing income differentials.

An Organisation for Economic Co-operation and Development literature review concluded that ex-ante studies find economy-wide leakage typically ranging from 5 percent to 20 percent[10] (Condon and Ignaciuk, 2013). Branger and Quirion (2014) performed a meta-analysis on 25 studies using 310 estimates of carbon leakage. They found a mean leakage of 14 percent without a CBT and 6 percent with a CBT[11].

A range of modelling studies have found that the indirect energy-price channel exceeds direct leakage (Fischer and Fox, 2012; Böhringer *et al* 2010; Kuik and Hofkes, 2010). Modelling results show that while some carbon leakage can

be combatted by a CBT, a CBT will never be completely effective in eliminating leakage, which will always persist to some extent via the indirect channel.

Bao *et al* (2012) provided a concrete example. They estimated the hypothetical impacts of a joint US and EU carbon tax on China's emissions. They noted the presence of indirect leakage and found that the emission reduction impacts of a hypothetical CBT in the US and the EU would be *"relatively small in China."* Increased emissions in China are driven by lower fossil-fuel prices, and therefore policies such as innovation and technology-transfer agreements would be more globally beneficial.

Furthermore, McKibben *et al* (2018) analysed the effects of a hypothetical carbon tax (starting at $27 in 2020 and rising until 2050) in the US. They found no evidence of carbon leakage. If anything, the slight slowing of the US economy appeared to result in lower emissions abroad (negative leakage). Interestingly, in one scenario, carbon taxation revenues were returned to households by lump-sum transfer, as advocated by 3,000 US economists (2018). In this scenario, the addition of a CBT actually reduced domestic output, contrary to its objective. This happened because the CBT (a tariff) raised the price of imports for American citizens, leading to weaker demand for imports and hence foreign currency. This caused an appreciation of the dollar, reducing American exports. The effect of the CBT on net exports was thus negligible, but noticeable in terms of reducing the overall volume of trade.

Overall, ex-ante models have tended to predict the existence of positive but limited carbon leakage at the aggregate level. Typically, the indirect energy prices channel dominates.

## Evidence of leakage in carbon-intensive sectors

Carbon leakage, if it exists, will be dominated by relatively few industries. Carbon intensive and trade exposed (CITE)

sectors are the most likely to be at risk of losing out, given the high carbon content of their products and their exposure to international markets.

High trade volumes increase competition and make firms less able to pass price increases through to consumers. The three main industrial sectors considered to be vulnerable to carbon leakage because of their participation in the ETS are steel, mineral products/cement and aluminium production.

Similarly to aggregate findings, ex-post empirical literature has tended to find little to no leakage in these sectors as a result of the ETS. For example, Branger *et al* (2017) estimated empirical regressions for cement and steel under the ETS and found no evidence that the ETS led to carbon leakage between 2005 and 2012. Healy *et al* (2018) found no leakage in the clinker and cement sectors. This is not surprising given the low emission prices and free allowances given to companies during the second phase of the ETS (2005-2012).

Dechezleprêtre and Sato (2017) reviewed ex-post studies on environmental regulations and their impact on particularly polluting and energy intensive sectors. They concluded that *"ambitious environmental policies can lead to small … adverse effects on trade, employment"* and that *"the effects tend to be concentrated on a subset of sectors for which environmental and energy regulatory costs are significant."* They also found strong evidence for environmental regulations promoting innovation in cleaner technologies, highlighting the uneven effects of carbon pricing by sector.

Ex-ante modelling tends to estimate more significant rates of leakage for CITE sectors. Kuik and Hofkes (2010) found a total leakage rate of 10.8 percent arising from the ETS. Of this, the steel and mineral products sectors were responsible for 5 percentage points.

More generally, leakage rates of between 8 percent and 90 percent were found for cement, aluminium, and steel and iron production when no measures are taken to address leakage (Cosbey *et al* 2019). Such a large range highlights the high degree of sensitivity of modelling results to complex underlying assumptions, and makes the interpretation of results difficult.

A literature review provided to the European Commission for the identification of sectors exposed to a significant risk of carbon leakage found sectoral estimates from ex-ante studies ranging from 2 percent to 73 percent of carbon leakage (Öko-Institut and Ecofys, 2013).

This range again highlights the complexities associated with modelling real-world policies. Öko-Institut and Ecofys (2013) attributed lower estimates to the assumption of continued measures aimed at protecting exposed sectors, while the higher rates seemed to be associated with rather simple modelling assumptions relating to underlying elasticities (eg. homogenous products), leading to over-estimation of leakage.

At higher carbon prices, especially higher global carbon pricing differentials, any leakage would likely be in CITE sectors. This is certainly one reason why the European Commission plans to focus any eventual CBT on selected sectors.

Zachmann and Cipollone (2013) showed that on average, energy-intensive sectors generate fewer jobs and less value added than other sectors, representing only slightly more than 10 percent of EU value added and employment.

The literature also highlights in particular that there are many factors beyond carbon pricing that determine how competitive a sector is. By reviewing ex-post results, Dechezleprêtre and Sato (2017) showed that aggregate

competitiveness effects arising from environmental regulation are small relative to the other determinants of trade (infrastructure, geography, availability of raw materials and skilled labour).

Depending on the type of leakage (operational vs investment), factors such as transportation, non-tariff costs, political risk, exchange rate concern, product differentiation, quality of capital, labour and energy available in an economy can all be expected to outweigh any leakage effects.

## Substantial energy price differentials had surprisingly small effects on the location of downstream sectors

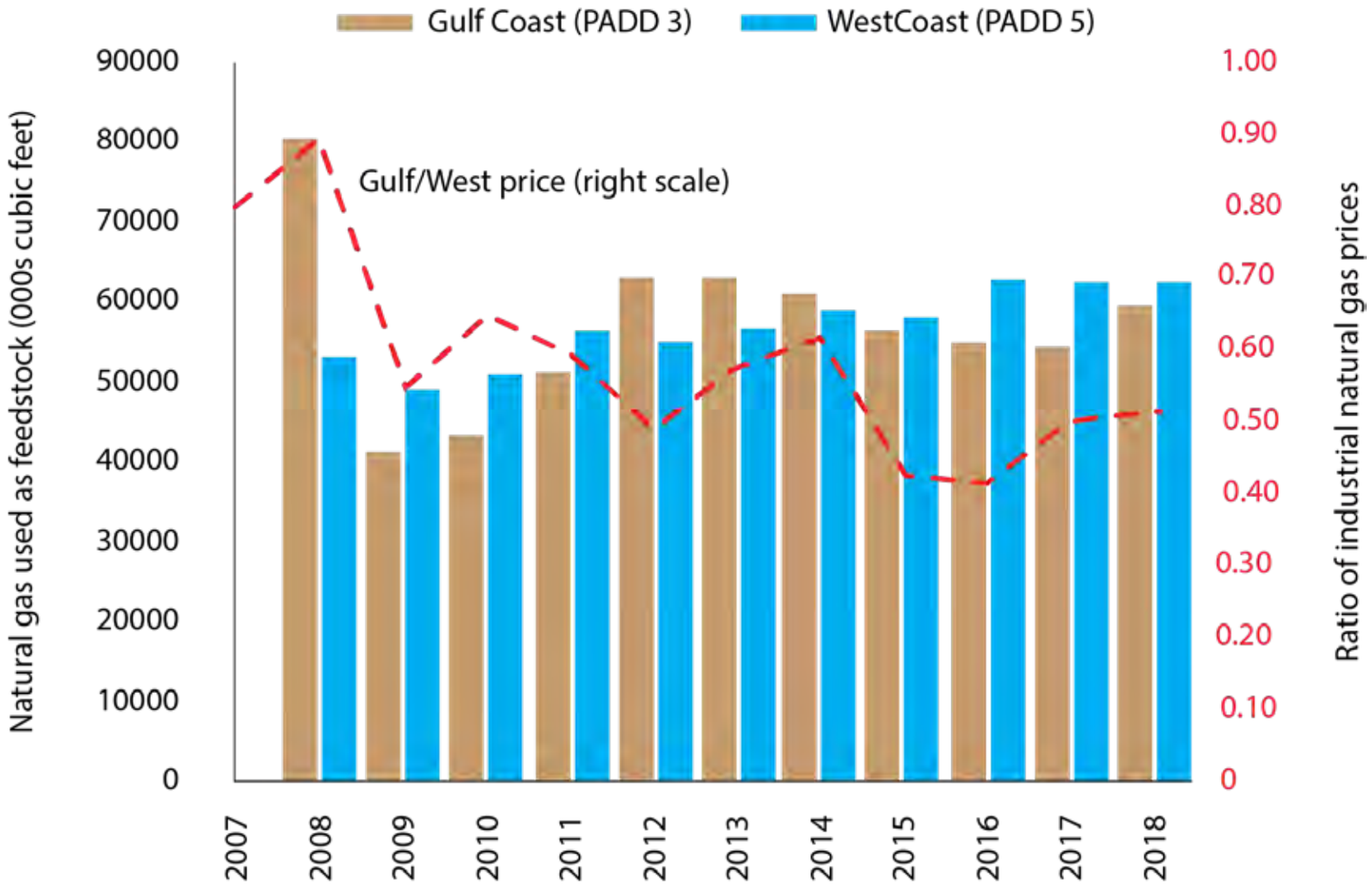
Given that carbon pricing differentials might not yet have been large enough to significantly influence competitiveness, energy price differentials could be used as a proxy for the expected effects of hypothetical carbon pricing.

Aldy and Pizer (2015) used US manufacturing industry data from 1974 to 2009, covering 450 sectors and sub-sectors. They estimated the effects of changing energy prices on domestic production and net imports for each of these sectors, with changes to net imports considered as the 'competitiveness effect'.

They found that for the most energy-intensive sectors (such as iron and steel, aluminium and cement), of the reduction in domestic production attributed to a rise in energy prices, only about one-sixth could be attributed to 'competitiveness effects'. Meanwhile, for sectors with median energy intensity there is no statistically significant effect of changing energy prices on net imports.

Results therefore suggest that buyers of products such as steel and aluminium respond to changing prices, but appear to do so not by shifting consumption to foreign substitutes, but in other ways, including by switching to other, less energy-intensive materials or by using less of the good in the manufacture of their final product.

## Figure 2. Natural gas used as feedstock for hydrogen production in US regions




*Source: Bruegel based on US Energy Information Administration, available at: https://www.eia.gov/dnav/pet/pet_pnp_feedng_k_a.htm and https://www.eia.gov/outlooks/steo/data/browser.*
*Note: Petroleum Administration for Defense Districts (PADDs) are used for natural gas volumes. We match these to natural gas prices from the US Energy Information Administration. PADD 3 corresponds to New Mexico, Texas, Arkansas, Louisiana, Mississippi and Alabama with the corresponding price data from Texas, Oklahoma, Arkansas and Louisiana. PADD5 corresponds to Washington, Oregon, California, Nevada, Arizona, Alaska and Hawaii. The corresponding natural gas price is for the same states without Nevada and Arizona.*

The authors suggest this might be because imports are imperfect substitutes for domestically produced products, or that other trade determinants limit substitution possibilities.

The response of industry to changing energy prices can be illustrated with another example from the US, showing how industrial prices for natural gas vary significantly.

One would expect that industries are more able to relocate within a country than between countries in response to changing energy prices. A major use for natural gas is as a feedstock for production of hydrogen, which is then combined with nitrogen to produce ammonia. This is done at facilities across the US.

Figure 2 shows that in spite of an almost 50 percent decrease over ten years in the price of natural gas along the Gulf Coast relative to the West coast price, the levels of natural gas consumed as feedstock in each region have not changed.

In conclusion, while CITE sectors might experience some carbon leakage as a result of strongly diverging carbon prices, the evidence indicates that the effects are likely to be smaller than certain economic models would suggest.

## A carbon border tax would be very difficult to implement

We have argued that there is little solid evidence for a risk of dramatic carbon leakage. The benefits of a carbon border tax as a means of addressing direct leakage would therefore be limited.

Furthermore, the implementation of a carbon border tax would be exceptionally difficult and potentially costly. Implementation could be done in two ways: (i) comprehensive coverage with all goods priced according to their carbon content, or (ii) limited implementation with only some carbon-intensive goods covered.

The European Commission currently favours the second approach, but it will be difficult to defend a strict division between selected and initially not-selected sectors, and a gradual expansion of coverage would be likely, once an effective sectoral CBT is implemented.

## A comprehensive carbon border adjustment

For a full-scale carbon border adjustment, it would in principle be necessary to establish the carbon emissions linked to each product. Ideally, all direct and indirect emissions along the entire value chain would need to be calculated. This raises a number of practical issues:

1. Companies might object to disclosing details of their supply chains which are often considered to be trade secrets;

2. For some inputs including electricity or transportation there are big differences between marginal and average emissions[12] and it is very difficult to make distinctions. For example, all aluminium smelters in a country where 95 percent of electricity is produced from coal might claim when exporting aluminium to the EU that they only use the 5 percent green electricity share;

3. A CBT will imply some trade deviation. Exporters can to some extent re-route their products from countries that levy carbon tariffs to unregulated markets. For example, steel exports from Ukraine to the EU might drop, but then Ukraine might export steel to the US, which in turn stops using its domestically produced relatively low-carbon steel and sells it to the EU[13];

4. A CBT can be a substantial non-tariff barrier. For small companies from less-developed countries

in particular, it will be very difficult to comply with complex rules of origin, leading to further sector concentration and discrimination against less-developed countries[14].

The complexity for importers could be reduced by setting default carbon values for each product and calculating the border adjustment based on these, while allowing importers to pay less if they can prove their imports are greener. In our view this will not prevent objections (i) to (iii), as listed above.

It would reduce concern about non-tariff barriers but would still discriminate against smaller/less-developed players. The incentives for more polluting firms to decarbonise will also be reduced. A firm will receive no economic benefit unless they are able to reduce carbon content below the benchmark, taking into account the economic cost of self-reporting.

Moreover, the setting of default carbon values will imply judgement calls similar to the benchmarks used for distributing free allowances in the ETS, which became a major lobbying battleground in Brussels.

One possibility would be to use the EU ETS benchmarks. Under the ETS, free emissions allowances are given to companies based on how well they perform against product-related benchmarks, with only the best 10 percent of performers receiving all allowances for free. Benchmarks (for example, 1.62 tonnes of $CO_2$ generated per tonne of ammonia produced) have been determined for more than 50 products[15].

Using such a well-established methodology, which has not so far been challenged at the World Trade Organization, could resolve some complicated technical questions at the beginning. But over time the question will arise whether the benchmarks should evolve in step with EU decarbonisation[16] or if the benchmark should be kept at its initial level[17].

## A carbon border adjustment covering selected sectors

Previous discussions about a CBT within the EU have focused only on CITE industries (Mehling *et al* 2019), in line with the general conclusion in the literature that a limited CBT is the most politically and legally feasible option, whilst also capturing the majority of any leakage benefits (Cosbey *et al* 2019).

This is because most industrial emissions stem from very few traded sectors[18]. Twelve sectors highlighted by the ETS as particularly polluting accounted for approximately 55 percent of EU industrial process and product-use emissions in 2018[19]. Logistically, applying a CBT only to these products would be significantly easier, as it would not require investigating complex value chains, and would avoid placing an additional administrative burden on all other products, which currently account for 98 percent of the EU's imports in terms of value[20].

The main problem with such an approach is that it could have a more damaging impact on EU competitiveness effects compared to no CBT at all. Putting a border-tax on specific carbon-intensive inputs (such as steel) could imply trade distortions for other parts of the value chain.

So if leakage is an issue, a selective carbon-border tax could result in a situation in which instead of importing steel from less-regulated countries, the EU will instead import downstream products from the steel value chain (such as nails) from those countries. This would lead to a higher loss in terms of value added and jobs. The Trump Administration's steel and aluminium tariffs have shown the potential impact. A White House report found that domestic steel capacity did not increase after the 25 percent tariff was introduced on 23 March 2018. At the same time, a 10 percent tariff was introduced on aluminium.

The reason for the lack of change in US production is that although imports of steel decreased after the imposition of the tariff, imports of certain steel products significantly increased. From June 2018 to May 2019, imports of steel

nails, tacks, drawing pins, corrugated nails, staples and similar articles increased by 33 percent, while imports of aluminium wire, cables, plaited bands and similar increased by 152 percent[21].

The result was detrimental to domestic demand for US-produced steel and aluminium[22]. The Trump Administration has now decided to extend tariffs further down the value chain, illustrating nicely the theory of 'cascading protectionism'[23]. Given the complexities of a more comprehensive CBT, it is not clear how easy it would be for the EU to engage in this game of chasing carbon down the value chain.

The closest to an explicit analysis of the magnitude of this effect we have been able to find comes from Burniaux *et al* (2012). The authors modelled unilateral climate policy by groups of countries (EU, Annex 1 Kyoto) with and without a CBT. They found that a CBT would have no effect on reducing the output losses associated with energy-intensive industries as a result of carbon taxation.

This is because any international competitiveness benefit is outweighed by the increased production costs that such firms face (because of the increased price of imported intermediate goods). Their results suggest that energy-intensive industries might not actually benefit from a limited CBT[24].

## Legal issues

The European Commission under Ursula von der Leyen has made it clear it wants a carbon border adjustment that is compatible with the rules of the WTO. The political reason for this is that the EU sees itself as a main beneficiary of the multilateral trade architecture (European Commission, 2015) and does not want to be seen to be undermining it. A CBT that is WTO-compliant is in principle possible, but rests on complex preconditions that will imply a trade-off between political feasibility and effectiveness[25].

Jennifer Hillman (2013) provided an overview of the challenges a CBT would face at the WTO. Article II.2 of the General Agreement on Tariffs and Trade requires any border tax to be implemented on 'like' products to those taxed domestically, and that the border tax cannot exceed the domestic tax rate (Article III.2). Determining whether products are the same creates a trade-off between ease of implementation and environmental effectiveness – for example, is steel the same product if produced by a blast furnace or an electric mill.

The carbon emissions for 'like' products can thus be drastically different, and to be effective, benchmarks would have to be determined for a whole host of products and variations of those products. Until now, the WTO has determined whether products are 'like' one another by *"examining their end use, consumer tastes and habits, and their physical characteristics, along with whether they compete with each other"* (Hillman, 2013).

There would arise a legal debate over how alike products produced via different methods are. Trachtman (2016) suggests that the best option for WTO compatibility would be a *"product-based tax that does not vary by reference to carbon intensity of production but is set at a fixed rate for specified categories of products"*[26].

In the event that a CBT was legally challenged and found to violate Articles II.2 or III.2, General Agreement on Tariffs and Trade exemptions can be applied for tariffs that *"protect human, animal, or plant life or health"* or when they are related *"to the conservation of exhaustible natural resources."* A CBT would likely meet these criteria, but explicit measures would have to be taken in the design of the tariff to highlight that it is implemented for global environmental purposes rather than to protect the economic competitiveness of EU firms (Hillman, 2013).

Furthermore, the United Nations Framework Convention on Climate Change (UNFCCC) rests on the principle of *"common but differentiated responsibilities and respective capabilities."* This implies that less-developed countries (and

possibly countries that contributed less to the current stock of greenhouse gases in the atmosphere) should not face the same mitigation burden as richer, developed countries.

A CBT which gives preferential treatment to clean domestic and foreign producers might unduly affect developing countries. Tensions between developed and developing countries in international climate negotiations have long existed and there is concern a CBT might significantly exacerbate this. The EU might therefore wish to design a CBT which to some extent excludes developing countries. This would again raise the trade-off between overall effectiveness and addressing the concerns of developing countries.

Böhringer *et al* (2016) showed that carbon border tariffs would exacerbate pre-existing income inequalities as richer countries shift the burden of emissions abatement to poorer countries. In a scenario in which OECD countries take action to reduce emissions and implement CBTs on all embodied carbon within imports, OECD countries would end up free riding on their own climate policies at the expense of the developing world, because of shifts in the global terms of trade.

Böhringer *et al* (2016) concluded that the *"main effect of carbon tariffs is to shift the economic burden of developed-world climate policies to the developing world",* while reducing the global cost-effectiveness of climate mitigation, based on numerous welfare estimations.

## Foreign political issues

The impact of a CBT on exporter countries will depend on whether the CBT is comprehensive or limited, and on the sectoral structure of the country. There might be a windfall profit for countries such as Costa Rica and Switzerland with clean fuel mixes, while India, South Africa and other countries with particularly carbon-intensive industries

would be disadvantaged (Figure 3). The latter countries would be negatively affected by a CBT and would likely strongly oppose such a measure.

The administrative costs of a CBT – especially if comprehensive, requiring the disclosure of value chain information – will be opposed by all of the EU's trading partners. The implementation cost of such non-tariff barriers has been estimated at up to $70,000 for the certification of one product with a complex supply chain (Persson, 2010)[27]. Calculating embedded carbon is an expensive process, which will favour larger producers in developed countries with more resources, benefiting from economies of scale.

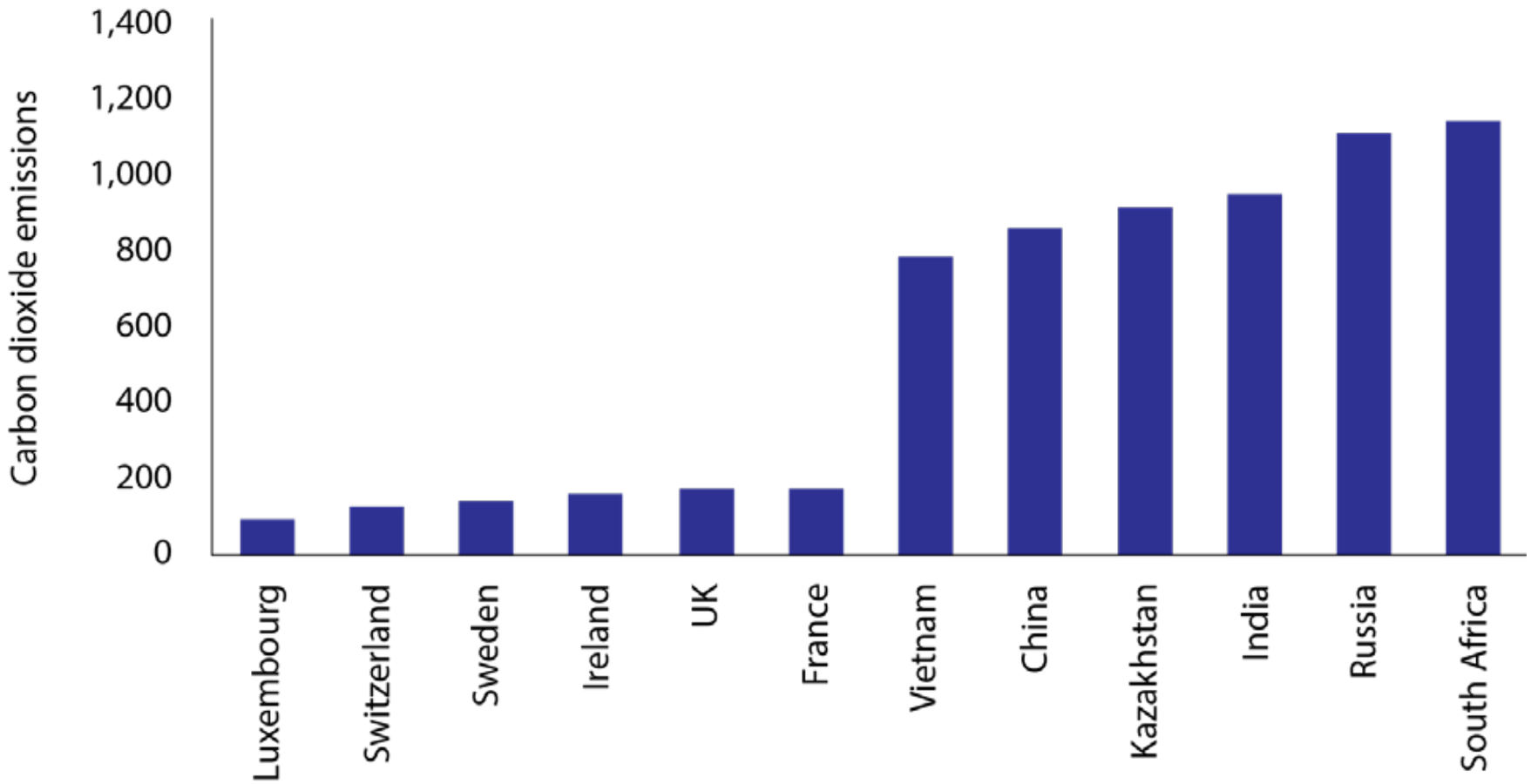
Moreover, a CBT might be seen as extraterritorial regulatory overreach by powerful countries that care a lot about their sovereignty. The narrative that the EU is introducing a CBT to trigger decarbonisation in other countries[28] is unlikely to help.

A proposal for the EU to retain revenue from the CBT for redistribution to industry or the economy would be particularly damaging in terms of legal compliance and cooperation with foreign partners. Powerful voices have already begun to express such sentiments.

Poland's prime minister, Mateusz Morawiecki, has suggested that revenues from a CBT could be used to fill the hole in the EU's budget following Brexit[29] (Krukowska, 2020). Such an argument blurs the distinction between a CBT as a measure designed for global environmental purposes and green protectionism.

As an advocate of free trade, the EU must be careful to steer clear of the argument that a CBT is a disguised restriction on intentional trade. Rather than accruing to the general budget, any EU CBT revenues should be sent back to developing countries affected by the tax. Because of the negative impacts for carbon-intensive exporters,

**Figure 3. Intensity of $CO_2$ emissions embodied in total gross exports of final products in 2015 (in tonnes per $ million for the six lowest and highest countries)**




*Source: OECD.*

the cost of compliance and fears of extraterritorial overreach, many of the EU's trade partners will be firmly opposed to an EU CBT. Other countries have already shown their willingness to retaliate in similar circumstances.

When the EU tried in 2012 to introduce carbon pricing for the full distance of flights arriving from outside the European Economic Area, the US, China and other countries quickly resisted (Sapir and Zachmann, 2012). The EU was forced to bury the proposal, in particular after reported Chinese threats to cancel Airbus orders[30] (Lewis, 2013). It is highly likely a unilateral EU CBT would trigger similar reactions[31].

The US would certainly strongly oppose – US commerce secretary, Wilbur Ross, has already said as much[32] (Tett *et al* 2020). One possible area for retaliation would be tariffs on automobiles, which could have a similar effect on the EU as the Chinese threat to Airbus in 2012. Introducing a CBT would thus require strong commitment and a coherent position from each EU country, in order to overcome the inevitable foreign opposition.

A wide international alliance with other countries that might join an EU initiative to introduce domestic climate policies, together with a jointly-designed CBT might alleviate some of the concerns[33]. But some countries, including the US and China, might have structural reasons to dislike such an approach (Böhringer and Rutherford, 2017).

Therefore, at best, it would require time, political capital and compromise on essential design elements, such as the desired carbon price, to develop such a coalition. At worst, such coalition- building will fail and leave the EU with the option of abandoning the idea of a CBT or doing it unilaterally.

## Domestic political issues

Different industries and different EU countries have different preferences with respect to a CBT. Export-oriented industries and countries fear a CBT might trigger retaliation[34] (Nienaber, 2019), while industries and countries

that fear foreign competition from carbon-intensive foreign suppliers might be interested in very strict border adjustments.

The design of a CBT implies decisions about which products to cover and how to set the adjustment for different products from different suppliers/countries. There cannot be an objectively optimal set-up and the choices will impact different countries and industries differently.

Spain, for example, might want to use the marginal carbon intensity of a country's fuel mix to calculate the adjustment for electricity imports, to protect itself against imports from Morocco, while Germany might want upstream emissions in natural gas imports not to be covered to reduce its gas import prices from Russia.

On other design elements, positions will also vary widely. Particularly difficult questions include:

- Will CBT revenues be returned to trade partners, used in the EU budget, or given to EU countries?

- Will existing leakage protections such as free allowances and indirect cost compensation be immediately abolished, phased out, or kept indefinitely?

- How long will a limited CBT last? Will it be limited to CITE sectors indefinitely, or will revision clauses be inserted allowing for the gradual extension of the CBT along value chains, turning it into a more comprehensive measure?

This suggests that compromises will lead to either reduced environmental effectiveness or less international/legal acceptability. Complex internal discussions will expend significant time and effort and risk political stalemate.

Moreover, when final decisions are made on a CBT, so much domestic political capital will have been invested that it will be very difficult to change/undo the design of the CBT as the international situation evolves. Table 1 provides a broad overview of the complexities.

## Alternatives are available

Putting a price on carbon contained in imports is not the only way to treat leakage concerns.

### Compensating trade-exposed polluters

One alternative is to compensate carbon-intensive domestic industries at risk of carbon leakage for the domestic carbon cost they face. This has been practiced under the EU ETS in two forms.

First, many companies were eligible to receive free emission allowances. The complex design of the allocation rules was supposed to ensure that companies have an incentive to reduce emissions, while being largely compensated for the carbon cost, in order to remain internationally competitive. The system likely led to significant overcompensation of carbon-intensive companies, which passed the market price of free allowances through to consumers[35].

The system also caused a fight over allocation rules and reduced the incentives for a deep transformation of the corresponding sectors. The second compensation mechanism was that the EU allowed governments to return some national ETS revenues to certain electricity-intensive companies.

The rules differed widely between countries and led to distortions in the internal market, in addition to most of the aforementioned problems[36]. Thus, we would advise against continued large-scale compensation schemes for carbon intensive producers.

## Table 1. Advantages/disadvantages for different elements of CBT

| | Selected advantages | Selected disadvantages |
|---|---|---|
| **Justification for CBT** | | |
| Competitiveness argument | Important in the domestic debate: industry wants protection from higher carbon prices | Not WTO compatible<br>Trade partners will be encouraged to retaliate<br>*Beggar-thy-neighbour* sentiment |
| Environmental argument | WTO compatible | Implies extra territoriality (no increase in foreign emissions) which might be politically sensitive<br>Carbon leakage evidence is not clear |
| Induce stricter climate policies abroad | Potential to reduce emissions abroad | Impede upon sovereignty concerns of other countries<br>Violates UNFCCC principle of 'common but differentiated' |
| **Coverage of CBT** | | |
| Complete value chain | Fair | Logistically difficult |
| Selected sectors | Easier to manage<br>Maximise | Trade deviation (steel nails); Incentive for 'cascading protectionism' with CBT moving up the value chain |

## Table 1. Advantages/disadvantages for different elements of CBT cont.

| | | |
|---|---|---|
| **Design elements** | | |
| Compute exact carbon emissions | Largest and fairest effects | |
| EU product Benchmarks [1t steel = 0.8t of $CO_2$] | Logistically easier than computing exact carbon emissions | No incentive for excessive polluters |
| | | Difficulties over how to adjust benchmarks over time |
| WTO Compliance | Defending the multilateral trade system is in the EU's interest | Reduced effectiveness |
| | *Sine qua non* for some member states | Will be challenged by trade partners regardless |
| Keeping the revenue | Adding to EU resources could help stabilize national macroeconomic shocks | Some EU member states oppose giving EU own resources |
| | | Generating revenues makes it difficult to claim purely environmental reasons undermining political and legal arguments for CBT |
| **Interaction with existing system** | | |
| CBT to replace free allowances | Free allowances were very distortive | As CBT will not be perfect, companies will lobby for allowances |
| | Maintaining two instruments will be difficult to defend legally and politically | Time-limited parallel scheme might be a solution |
| CBT to replace indirect cost compensation | ICC distorts internal market and international competition | As CBT will not be perfect, companies will lobby for allowances |
| | Maintaining two instruments will be difficult to defend legally and politically | CBT might not work further up the value chain -> argument for ICC |

*Source: Bruegel.*

## Supporting clean alternatives

A better alternative would be to support low-carbon production of products that are linked to high carbon emissions in their production. The EU would provide large-scale public support to the deployment of green steel, green cement or green aviation.

This would produce a double benefit. First, it would strengthen the long-term competitiveness of the EU in these currently high-carbon sectors.

Second, it could provide the world with the technologies needed for deep decarbonisation. The obvious blueprint is the renewable energy revolution that enabled unexpected cost reductions in wind and solar technology, and perhaps to a lesser extent the electric vehicle and batteries revolution that has also been supported by sizeable public programmes.

One approach to achieve such support is payments for low-carbon production. For steel, cement, pulp-and-paper, aluminium and other products, the EU could define emission benchmarks for disruptive low-carbon alternatives (for example, less than 0.75 tonnes of $CO_2$ per tonne of non-recycled steel, compared to an industry average of approximately 1.5 tonnes of $CO_2$).

Companies beating this benchmark would be given access to a fixed fund, potentially based on the auctioning of emission allowances that are currently distributed for free (at a carbon price of €40/tonne that would be €32.5 billion per year)[37]. Companies would receive a pro-rata allocation from the fund based on the amount of emissions they save compared to the benchmark.

he challenge would then be to define products and benchmarks in a way that would give companies flexibility in finding new solutions, such as new materials that meet the same demand, while closing loopholes that provide windfall profits to providers (for example, by recycling the same steel repeatedly and claiming the premium each time). The feed-in tariff system for renewables managed to deal with similar issues without being significantly derailed by WTO disputes[38].

If well designed, such a system could increase tenfold the incentive for emission reductions[39]. Such a competitive scheme to reduce emissions and develop new low-carbon technologies would be much more forward-looking than current schemes that compensate emission-intensive producers.

Measures to create markets for low-carbon alternatives can also be developed[40]. Similar to renewables support, a quota system for green products could be considered, in which the government sets the percentage of the product, such as steel, that must come from low-carbon sources and then allows the market to determine the cost.

Standards for products that can be used in the EU might be developed so that very carbon-intensive products are excluded. This might work best for products where the 'dirty' alternative can be clearly identified.

Contracts for difference are another support system for low-carbon alternatives[41]. These guarantee to investors in green projects a certain carbon price, which might be significantly above the market price. Contracts for difference are not linked to a measurable output, for example tonnes of green steel.

That makes the contracts easier to administer, but also results in only indirect incentives for the production of low-carbon products. So, an investor might benefit from the contract for difference initially obtained, irrespective of whether the green steel installation is fully used or not.

Public procurement represents a huge market in the EU for building materials and other products. Rules on public procurement should be designed in a way to better stimulate demand for low-carbon products.

If, as we argue, carbon leakage is not a massive problem for the majority of producers in currently carbon-intensive sectors, and over time alternative low-carbon products and production processes will become competitive, the best way to reconcile long-term competitiveness with decarbonisation becomes a question of timing.

While a CBT or allowances and compensation might buy time for incumbents, they will have political and financial costs and will delay the transition. Meanwhile, support for low-carbon alternatives might speed up the transformation and provide the EU with a lasting competitive edge in new sectors.

### Supporting global decarbonisation efforts

Active climate diplomacy should complement the EU's decarbonisation efforts. Pushing for a price on carbon, for example, can be linked to preferential treatment for countries, such as allowing Ukraine to participate in the EU's Energy Union. Current work to provide technical and financial support to countries that implement carbon pricing should be continued and can have substantial returns.

## Conclusion

Carbon leakage is real but limited and it should receive the political attention it merits but no more. All measures to address carbon leakage are imperfect, including carbon border taxes.

A CBT could be introduced in very different ways. The EU will have to choose between more efficient but highly complex and politically risky approaches, and almost ineffective but easily implementable mainly symbolic solutions.

Developing a CBT will however certainly expend significant amounts of human and political capital, whilst alienating and provoking international partners with whom cooperation is essential for successful decarbonisation.

Moreover, given the predominance of indirect leakage, and difficulties in measuring embedded carbon from foreign producers, it is not overwhelmingly clear that CBT would actually significantly address leakage.

The EU should therefore be careful not to fall into the trap of viewing a CBT as a carbon panacea, and should not put a CBT too high on its list of political priorities within the Green Deal. The EU must first begin to develop a series of more effective climate policies, such as a higher price on carbon, applied more widely, and broader support for low-carbon technologies.

Through such a strategy, Europe will be better placed to decarbonise internally and to spread this decarbonisation globally via the export of green technologies and know-how.

Whilst implementing such policies, the EU should closely monitor the risk of carbon leakage. If significant evidence arises that it is indeed becoming a substantial issue, the possibility and feasibility of a CBT could be further explored.

However, a focus on strengthening domestic policies, before resorting to a CBT, would hopefully offer solutions rather than problems to the EU's international partners. ■

**Georg Zachmann is a Senior Fellow, and Ben McWilliams is a Research Assistant, at Bruegel**

*Endnotes*

*1. A 50 to 55 percent emissions reduction in 2030 compared to 1990, as proposed by European Commission president Ursula von der Leyen, would be a reduction of about 40 percent compared to 2018, as 2018 emissions were already about 23 percent below 1990 values.*

*2. The quote continues: "This would ensure that the price of imports reflect more accurately their carbon content. This measure will be designed to comply with World Trade Organization rules and other international obligations of the EU. It would be an alternative to the measures that address the risk of carbon leakage in the EU's Emissions Trading System."*

*3. So far the European Commission has talked about an "adjustment mechanism", which has no clearly defined meaning. We focus on a broader form of carbon border tax, which could also be a special import duty, the obligation to buy EU permits for imports or a domestic consumption tax on the carbon content of imports. Some of the arguments will, however, also apply to other conceivable mechanisms (including carbon standards for imports or no trade agreements with countries without proper emission pricing).*

*4. The EU's territorial emissions were 22 percent lower in 2016 than in 1990, while consumption-based emissions were 17 percent lower in 2014 than in 1990. From 1990 to 2014, consumption-based emissions were consistently higher than territorial emissions, on average by 19 percent (Kartensen et al, 2018).*

*5. The Porter hypothesis, from the work of Michael Porter, says that well-designed environmental regulation can increase the competitiveness of firms. Regulation forces a reduction in pollution which might lead to improvements in the efficiency of resource use. The result would be to trigger innovation because firms are forced to become more efficient (Porter and van de Linde, 1995).*

*6. This effect is not restricted to energy, but might also be present for other carbon-intensive products, such as beef.*

*7. The authors used a range of variables as proxies for competitiveness: net imports, FDI, turnover, employment, profits.*

*8. Underlying carbon leakage results are Armington elasticities, which specify the degrees of substitution in demand for similar products produced in different countries. The error bands in estimation of these elasticities are very wide (see Aspalter, 2015, p55, who estimated the 95 percent confidence interval for primary metals between -1.921 and 1.211 for*

*the UK), while most models only use point estimates to derive their results.*
*9. This definition of carbon leakage is the same for the rest of the literature estimates presented: if one economy implements a domestic climate policy, carbon leakage would be the ratio of the increase in emissions outside that economy to the decrease in emissions that occurs within the economy.*
*10. See footnote 9.*
*11. The intuition being that according to models, CBT can have some effect in combatting leakage. Burniaux et al (2013), among others, confirmed this result. Branger and Quirion (2014) noted that computable general equilibrium models dominate results, and that these models estimate statistically significant higher leakage rates than other models. The likely explanation for this is that in computable general equilibrium models, a large portion of leakage usually derives from the indirect, energy price channel (Kuik and Hofkes, 2010; Condon and Ignaciuk, 2013).*
*12. Average emissions depend upon total production whilst marginal emissions depend upon the production source that provides flexibility to accommodate an extra unit of demand. For example, an electricity grid might on average provide relatively clean electricity but with flexibility provided by natural gas plants. Additional demand will then result in an increase in supply from natural gas. The operations of an aluminium plant would have low average emissions but very high marginal emissions.*
*13. In 2018, the US produced 68 percent of its steel using electric arc furnaces (with a relatively clean fuel mix), while Ukraine produced 70 percent of its steel using oxygen furnaces and 8 percent using open hearth. Rough estimates of the emissions associated with each production type are 0.2 to 0.4 tonnes of carbon dioxide equivalent (tCO2e) per tonne of recycled steel for electric arc furnaces, and 1.8 to 3.0 tCO2e per tonne virgin steel for oxygen furnaces (World Steel, 2019, p10; Carbon Trust, 2011, p11).*
*14. Special provisions for developing countries may be implemented to attempt to solve this problem, but would in themselves lead to further complications in designing such exemptions. Most pertinently, such provisions would appear to violate the 'most-favoured nation' principle under the WTO.*
*15. See https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0331&from=EN*

*16. If the benchmark is regularly updated in line with the best 10 percent of EU installations, the benchmark will steeply decline when the EU decarbonises – undermining the instrument.*
*17. Then trade partners will complain that the gradual improvements in technology they make are not properly reflected.*
*18. According to a European Commission (Regulation (EU) 2019/331) definition, these are: hot metal, aluminium, grey cement clinker, white cement clinker, lime, dolime, sintered dolime, adipic acid, soda ash, carbon black, ammonia, hydrogen.*
*19. Industrial process emissions are only a small proportion of total emissions. However, our calculations do not consider indirect emissions. Including indirect emissions from these sectors would also account for a significant proportion of overall emissions: see Monjon and Qurion (2011), who estimated that steel, cement, aluminium, and electricity accounted for 75 percent of emissions covered by the ETS.*
*20. Trade data from UN Comtrade for codes: 2521, 2523, 2606, 2803, 280410, 2814, 283620, 291712, 72.*
*21. Both figures are compared to the figures from the previous year: June 2017 to May 2018.*
*22. Domestic steel price increases because of a tariff on imports are not the same as domestic steel price increases because of a domestic carbon price. Under imperfect competition, the former will increase the market power of domestic producers, leading to higher prices but not massively increased production. The latter will put more competitive pressure on domestic producers, causing some of the burden of the carbon tax to result in lower rents for capital owners.*
*23. Bown (2020) highlighted that even more cascading protectionism has occurred in the USA as a result of upstream steel and aluminium industries lobbying for antidumping measures. An estimated $5 billion of additional goods has faced antidumping measures since March 2018.*
*24. The industries they consider as emissions intensive are: chemicals, nonferrous metals, fabricated metal products, iron and steel, pulp and paper, non-metallic mineral products.*
*25. See Horn and Sapir (2013). Amon the issues they raise are principles of international allocation of jurisdiction, fears of evolution into protectionist measures, and providing evidence that any CBT would be internationally fair.*
*26. Such an approach would be difficult to reconcile with the WTO 'like products' Article II.2, as it is not the system*

*currently applied for EU production.*
*27. It should be noted that were the EU to pursue a more limited form of CBT only for particular heavy industries, costs may be lower.*
*28. Ursula von der Leyen's January 2020 speech at the World Economic Forum in Davos, which touched on a CBT, triggered media responses such as: M Khan and G Rachman 'Davos 2020: Ursula von der Leyen warns China to price carbon or face tax', 22 January 2020, Financial Times.*
*29. See E Krukowska, 'Carbon Border Tax in Europe Gets Backing From Polish Premier', 6 February 2020, Bloomberg.*
*30. See B Lewis, 'Exclusive-Airbus to China: We support you, please buy our jets', 13 May 2013, Reuters.*
*31. Zhao Yingmin, China's vice environment minister, said in 2019: "We need to prevent unilateralism and protectionism from hurting global growth expectations and the will of countries to combat climate change together." See C Cadell, 'China says $CO_2$ border tax will damage global climate change fight', 29 November 2019, Reuters.*
*32. See G Tett, C Giles and J Politi, 'US threatens retaliation against EU over carbon tax', 26 January 2020, Financial Times.*
*33. See Victor (2015) for the arguments for an alliance, or club. The proposal from Nordhaus (2015) was to raise uniform percentage tariffs on all imports from countries which are outside of the club, ie. tariffs not linked to carbon emissions. This may be even more difficult to reconcile with WTO rules than a CBT.*
*34. See M Nienaber, 'German industry sounds alarm over EU carbon border tax', 25 September 2019, Reuters.*
*35. Zachmann et al (2018, p84) calculated that between 2013 and 2017 this transfer amounted to €45 billion.*
*36. For example, Italy provided no such compensation, while Germany returned €202 million in 2017 (See Marcu et al 2019, p24).*
*37. The EU ETS Innovation Fund already builds on a similar logic, using a share of the revenues of the ETS to support low-carbon technologies in sectors covered by the ETS (Article 10bis, §8 of Directive (EU) 2018/410). However, available funding will only correspond to the market value of at least 450 million allowances for the period 2021 to 2030, amounting to approximately €10 billion over ten years.*
*38. Some provisions – such as local content provisions – were however ruled incompatible with WTO rules. See*

https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds426_e.htm.
39. Initial implicit carbon prices of renewables support schemes were up to €1,250 per tonne in 2000.
40. See, for example, OECD (2019); Agora (2019); Neuhoff (2018).
41. See, for example, Sartor and Bataille (2019) or Zachmann (2015).

References

3000 US Economists (2019) 'Economists Statement on Carbon Dividends', available at https://clcouncil.org/economists-statement/
Agora (2019) 'Climate-Neutral Industry (Executive Summary): Key Technologies and Policy Options for Steel, Chemicals and Cement', Agora Energiewende and Wuppertal Institute
Aichele, R and G Felbermayr (2015) 'Kyoto and carbon leakage: An empirical analysis of the carbon content of bilateral trade', The Review of Economics and Statistics, vol 97(1): 104-115
Aldy, J and A Pizer (2011) 'The Competitiveness Impacts of Climate Change Mitigation Policies', NBER Working Paper No.17705, National Bureau of Economic Research
Aspalter, L (2016) 'Estimating Industry-level Armington Elasticities for EMU Countries', Department of Economics Working Paper no.127, Vienna University of Economics and Business
Bao, Q, T Ling, ZX Zhang, H Qiao and S Wang (2012) 'Impacts of border carbon adjustments on China's sectoral emissions: simulations with a dynamic computable general equilibrium model', China Economic Review vol 23: 77-94
Böhringer, C and T Rutherford (2017) 'Paris after Trump: An inconvenient insight', Oldenburg Discussion Papers in Economics vol 400-17
Böhringer, C, E Balistreri and T Rutherford (2012) 'The role of border carbon adjustment in unilateral climate policy: Overview of an Energy Modeling Forum Study', Energy Economics vol 3(2): S97-S110
Böhringer, C, J Carbone and T Rutherford (2012a) 'Unilateral Climate Policy Design: Efficiency and Equity Implications of

*Alternative Instruments to Reduce Carbon Leakage', Energy Economics, vol 34(2): S208-S217*
*Böhringer, C, J Carbone and T Rutherford (2016) 'Embodied Carbon Tariffs', The Scandinavian Journal of Economics vol 120(1)*
*Böhringer, C, C Fischer and K Rosendahl (2010) 'The Global Effects of Subglobal Climate Policies', Discussion Papers 634, Statistics Norway*
*Bown, C (2020) 'Trump's steel and aluminium tariffs are cascading out of control', PIIE Blog, 4 February, Peterson Institute for International Economics*
*Branger, F and P Quirion (2014) 'Would border carbon adjustments prevent carbon leakage and heavy industry competitiveness losses?' Ecological Economics, Elsevier, vol 99: 29-39*
*Branger, F, P Quirion and J Chevallier (2017) 'Carbon Leakage and Competitiveness of Cement and Steel Industries under the EU ETS: Much Ado About Nothing', The Energy Journal vol 0(3)*
*Burniaux, J-M, J Chateau and R Duval (2013) 'Is there a case for carbon-based border adjustment? An applied general equilibrium analysis', Applied Economics vol 45(16): 2231-2240*
*Carbon Trust (2011) International Carbon Flows: Steel, available at https://www.carbontrust.com/ resources/ international-carbon-flows*
*Condon, M and A Ignaciuk (2013) 'Border Carbon Adjustment and International Trade: A Literature Review', OECD Trade and Environment Working Papers, no.2013/06, Organisation for Economic Co-operation and Development*
*Cosbey, A, S Droege, C Fischer and C. Munnings (2019) 'Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs from the Literature', Review of Environmental Economics and Policy, vol 13(1): 3-22*
*Costantini, V and M Mazzanti (2012) 'On the green and innovative side of trade competitiveness? The impacts of environmental policies and innovation on EU exports', Research Policy vol 41(1): 132-153*
*Dechezleprêtre, A and M Sato (2017) 'The Impacts of Environmental Regulations on Competitiveness', Review of Environmental Economics and Policy vol 11(2): 183-206*

*Dechezleprêtre, A, C Gennaioli, R Martin, M Muûls and T Stoerk (2019) 'Searching for carbon leaks in multinational companies', Working Paper No. 165, Grantham Research Institute on Climate Change and the Environment*
*Ellis, J, D Nachtigall and F Venmans (2019) 'Carbon pricing and competitiveness: Are they at odds?' OECD Environment Working Papers no. 152, Organisation for Economic Co-operation and Development*
*European Commission (2015) 'Trade for all: Towards a more responsible trade and investment policy', COM/2015/0497 final*
*European Commission (2019) 'The European Green Deal', COM(2019) 640 final*
*Fischer, C and A Fox (2012) 'Comparing policies to combat emissions leakage: Border carbon adjustments versus rebates', Journal of Environmental Economics and Management, vol 64(2): 199-216*
*Healy, S, K Schumacher and W Eichhammer (2018) 'Analysis of Carbon Leakage under Phase III of the EU Emissions Trading System: Trading Patterns in the Cement and Aluminium Sectors', Energies vol 11(5)*
*Hillman, J (2013) 'Changing Climate for Carbon Taxes: Who's Afraid of the WTO?' Climate & Energy Policy Paper Series, July, German Marshall Fund of the United States*
*Horn, H and A Sapir (2013) 'Can Border Carbon Taxes Fit Into the Global Trade Regime', Policy Brief 2013/06, Bruegel*
*Kartensen, J, GP Peters and RM Andrew (2018) 'Trends of the EU's territorial and consumption-based emissions from 1990 to 2016', Climatic Change vol 151: 131-142*
*Kuik, O and M Hofkes (2010) 'Border adjustment for European emissions trading: Competitiveness and carbon leakage', Energy Policy vol 38(4): 1741-1748*
*Marcu, A, E Alberola, J-Y Caneill, M Mazzoni, S Schleicher, C Vailles, W Stoefs, D. Vangenechten and F Cecchetti (2019) 2019 State of the EU ETS Report, ERCST, Wegener Center, ICIS, I4CE and Ecoact*
*McKibben, W, A Morris, P Wilcoxen and W Liu (2018) 'The role of Border Carbon Adjustments in a US Carbon Tax', Climate Change Economics vol 9(1)*
*Mehling, M, H van Asselt, K Das, S Droege and C Verkuijl (2019) 'Designing Border Carbon Adjustments for Enhanced Climate Action', American Journal of International Law vol 113(3) 433-481*

*Monjon, S and P Quirion (2011) 'Addressing leakage in the EU ETS: Border adjustment or output-based allocation?' Ecological Economics vol 70(11): 1957-1971*
*Naegele, H and A Zaklan (2019) 'Does the EU ETS cause carbon leakage in European manufacturing?' Journal of Environmental Economics and Management vol 93: 125-147*
*Neuhoff, K, O Chiappinelli, C Bataille, M Haußner, R Ismer, E Joltreau and J Stede (2018) Filling gaps in the policy package to decarbonise production and use of materials, Report June 2018, Climate Strategies – DIW Berlin*
*Nordhaus, W (2015) 'Climate Clubs: Overcoming Free-riding in International Climate Policy', American Economic Review vol 105(4): 1339-70*
*OECD (2019) 'Low and zero emissions in the steel and cement industries', Issue Paper, Organisation for Economic Co-operation and Development*
*Öko-Institut and Ecofys (2013) Support to the Commission for the determination of the list of sectors and subsectors deemed to be exposed to a significant risk of carbon leakage for the years 2015-2019, Final Report*
*Persson, S (2010) 'Practical Aspects of Border Carbon Adjustment Measures: Using a Trade Facilitation Perspective to Assess Trade Costs', Issue Paper no.13, International Centre for Trade and Sustainable Development*
*Porter, M and C van der Linde (1995) 'Toward a new conception of the environment-competitiveness relationship', Journal of Environmental Perspectives vol 9(4): 97-118*
*Sapir, A and G Zachmann (2012) 'EU Carbon levy: try to avoid air turbulences', Bruegel Blog, 15 March, Bruegel*
*Sartor, O (2013) 'Carbon Leakage in the Primary Aluminium Sector: what Evidence after 6.5 Years of the EU ETS?' USAEE Working Paper no 13-106*
*Sartor, O and C Bataille (2019) Decarbonising basic materials in Europe, IDDRI Study no 6, Institute for Sustainable Development and International Relations*
*Trachtman, J (2016) 'WTO Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitiveness Effects of Carbon Taxes', Resources for the Future Discussion Paper 16-03*
*Victor, D (2015) 'The Case for Climate Clubs', E15 Initiative, Geneva*

*World Bank (2019) Report of the High-Level Commission on Carbon Pricing and Competitiveness, World Bank Group*
*World Steel (2019) World Steel in Figures 2019, World Steel Association*
*Zachmann, G (2015) 'Making low-carbon technology support smarter', Policy Brief 2015/02, Bruegel Zachmann, G and V Cipollone (2013) 'Energy Competiveness' in R Veugelers (ed) Manufacturing Europe's future, Blueprint 21, Bruegel*
*Zachmann, G, G Fredriksson and G Claeys (2018) The Distributional Effects of Climate Policies, Blueprint 28, Bruegel*

*This article is based on Zachmann, G and B McWilliams (2020) 'A European carbon border tax: much pain, little gain', Policy Contribution 05/2020, Bruegel*

# Climate change and the financial sector

Climate change constitutes a major challenge. Christine Lagarde writes that central banks need to devote greater attention to its impacts

Climate change constitutes a major challenge, causing both threats and opportunities that will significantly affect the economy and the financial sector, depending on which carbon emission scenario eventually unfolds.

That is why central banks need to devote greater attention to understanding the impact of climate change, including its implications for inflation dynamics. At the ECB, the ongoing review of our monetary policy strategy creates an opportunity to reflect on how to address sustainability considerations within our monetary policy framework.

Today, however, I will focus my remarks on climate change-related risks for the financial sector. Broadly speaking, the main risks fall into three categories: risks stemming from disregard, from delay and from deficiency.

## Risks from disregarding climate change

Disregarding the implications of climate change can generate significant risks for the financial sector. Total insurance losses for weather-related events reached 0.1% of GDP in 2018, with total economic losses approximately double that amount.

The number of catastrophes caused by natural hazards increased from 249 in 1980 to 820 in 2019, peaking at 848 in 2018. Adjusting for inflation, overall economic losses increased from around USD 60 billion in 1980, to USD 150 billion in 2019, with a peak of USD 350 billion in 2018[1].

According to the Intergovernmental Panel on Climate Change, global warming of 1.5°C above pre-industrial times is likely to bring about substantial changes in our climate, increasing the likelihood of more extreme weather conditions[2].

As a result, insurance and economic losses caused by climate-related events are likely to start trending upwards as a share of GDP[3]. Insurance and reinsurance companies need to continue to ensure that risk pricing remains appropriate and that reserves are adequate to cover expected losses.

Banks also need to consider the risks such events create for their credit exposures. Losses can arise from both direct damage and from the effects that potentially higher maintenance costs, disruption and lower labour productivity could have on profitability and hence default risk.



*The transition to a carbon-neutral economy provides opportunities, not just risks*

## Risks from delaying the response to climate change

The second source of risk for the financial sector arises from the pathway taken to a carbon-neutral world. Achieving the transition almost certainly requires intervention by public authorities through regulation and taxation. Early and coordinated action can help deliver a smooth transition for the economy.

But if that intervention is delayed, the reduction in emissions may have to be sharper, resulting in a disorderly, disjointed and more disruptive transition for the economy. Certain economic activities may quickly be rendered obsolete, leading to a re-pricing of assets and the risk that some will become stranded.

It is vital, then, for financial institutions to understand the risks on their balance sheets. Greater disclosure by companies on their climate exposure is a prerequisite, bolstering the ability of market participants and financial institutions to carry out appropriate risk assessment.

Disclosures by financial institutions themselves suggest that there is some way to go.

Recent analysis of the 12 largest banks and 14 largest insurers in the euro area shows that a majority disclose the impact of their business travel, commuting and other energy usage. Yet most of their exposure to climate-related risk is likely to stem from their financial activities. Only 5 out of the 26 partially disclose the impact of their financial assets, and none of them provide full disclosure[4].

The Eurosystem is now reviewing the extent to which climate-related risks are understood and priced by the market and is paying close attention to how credit-rating agencies incorporate such risks into their assessments of creditworthiness. We will continue to evaluate the implications for our own management of risk, in particular

through our collateral framework. ECB Banking Supervision is assessing banks' approaches to climate risks and developing supervisory expectations on those risks.

Preparatory work is also under way for a macroprudential stress test to assess climate-related risks, with the first results expected by the end of the year. The stress test framework aims to assess how climate-related risks propagate through the real economy and the financial system.

The stress test will draw on granular information, possibly including geographical location and carbon footprint, and focus on 90 significant institutions across the euro area. Importantly, it will also at some stage model how dynamic interactions can amplify the effects, for example if banks react to losses by deleveraging.

## Risks from deficiency in the provision of finance

Which leads me to my final category of risk: deficiency. The financial sector will be pivotal in mobilising the necessary financial resources for the transition and in helping our economies to cope through adaptation and mitigation. It is vital that it provides finance of sufficient quantity and quality for the task.

High insurance coverage and deep capital markets help mitigate the macroeconomic impact of disasters[5]. This matters at a microeconomic level, too, where a lack of effective access to insurance and finance can lead to a disproportionately greater impact of disasters on poorer households[6]. In the absence of insurance, households will have to rely more on precautionary saving or government transfers.

Substantial investment is likely to be required to underpin the energy transition, with some estimates running to hundreds of billions of euro each year in the European Union alone[7]. Meeting that challenge requires contributions from both the public and private sector.

The European Union has been at the forefront of the global push to substantially reduce carbon emissions. In December 2019, the European Commission proposed a European Green Deal, subsequently endorsed by the European Council, that calls for zero net emissions of greenhouse gasses by 2050. This goal enjoys broad public[8] and political support, and the concrete measures required to meet it are now being fleshed out.

Another field where the European Union has taken the lead internationally is on the issuance of green bonds. The European Investment Bank was the first issuer of green bonds in 2007. In 2018, 31% of the financing it provided was oriented towards climate mitigation and adaptation.

That has helped foster a growing market for green bonds within Europe. European entities account for around half of global issuance of green bonds, and around 42% of the global market is denominated in euro[9]. Indeed, green bonds are now approaching 10% of total euro-denominated bond issuance.

The European Union also launched a comprehensive action plan in 2018 to promote sustainable finance. That plan is already bearing fruit, including the recent agreement on the taxonomy framework for assessing the sustainability of economic activities. The taxonomy represents an important step towards categorising green investments on a sound and consistent basis and will help underpin further market developments in green finance.

But a common approach is needed to mobilise global funding for the transition, while at the same time remaining vigilant against attempts to green wash. Unnecessary fragmentation in regulation will impair the sustainable growth of green finance.

## Conclusion

The transition to a carbon-neutral economy provides opportunities, not just risks. By shifting the horizon away

from the short term and contributing to a more sustainable economic trajectory, the financial sector can become a powerful force acting in our collective best interest. The future path for carbon emissions and the climate is uncertain, but it remains within our power to influence it. As Lyndon B Johnson said, *"yesterday is not ours to recover, but tomorrow is ours to win or lose."*[10] ■

**Christine Lagarde is President of the European Central Bank**



*Endnotes*

*1. Source: Munich Re NatCatSERVICE. To an extent, that increase also reflects a greater concentration of economic activity in regions vulnerable to natural hazards.*

*2. Intergovernmental Panel on Climate Change (2018), Special report – Global Warming of 1.5°C.*

*3. See European Commission (2014), "Climate Impacts in Europe – The JRC Peseta II Project", JRC Scientific and Policy Reports.*

*4. See Carbone S, Giuzio M and Mikkonen K (2019), "Climate risk-related disclosures of banks and insurers and their market impact", Financial Stability Review, ECB, November.*

*5. See von Peter, G, von Dahlen, S and Saxena, S (2012), "Unmitigated disasters? New evidence on the macroeconomic cost of natural catastrophes", BIS Working Papers, No 394, Bank for International Settlements; Noy, I (2009), "The macroeconomic consequences of disasters", Journal of Development Economics, 88(2), pp. 221-231.*

*6. See, for example, Carter, M, Little, P, Mogues, T and Negatu, W (2007), "Poverty Traps and Natural Disasters in Ethiopia and Honduras," World Development, 35(5), pp. 835-856; Nazrul Islam, S and Winkel, J (2017), "Climate Change and Social Inequality," Working Papers, No 152, United Nations, Department of Economics and Social Affairs.*

*7. According to the European Commission, achieving the Paris Agreement targets requires up to €260 billion of additional*

*investment per year.*
*8. 79% of Europeans see climate change as a very serious problem. 92% – and more than 8 in 10 people in each member state – agree that emissions should be reduced to a minimum in order to make the EU climate-neutral by 2050. See Special Eurobarometer 490 – climate change, European Commission, April 2019.*
*9. Source: Dealogic.*
*10. Johnson, LB (1963), Thanksgiving Day Address to the Nation, Washington, November 29.*

*This article is based on a speech delivered at the launch of the COP 26 Private Finance Agenda, London, 27 February 2020*

*World Commerce Review is pleased to announce that Euro Exim Bank Ltd has been awarded the Best Use of Digital Technology in Banking 2020.*

*The World Commerce Review awards celebrate achievement, innovation and excellence across several fields of endeavour. Our award programs are tailored to provide a comprehensive analysis of the very best in each market.*

*The WCR awards are recognised as the principal indications of professional conduct and excellence.*

*The selection panel took into account product innovation, on-going customer support and best practice criteria as well as a continuing commitment to deploying the best possible solutions for the benefit of their clients.*

# Climate risks to European banks

Alexander Lehmann looks at a new era of stress tests that take into account potential climate-related risks

Several European central banks have begun assessing the impact of adverse climate scenarios on banks' capital. Comparable work at EU or euro area level has evolved more slowly. Supervisors need build up a distinct and more complex type of analysis, and should engage with banks now.

The release of a proposed methodology for assessing climate risks within UK banks and insurers by the Bank of England just before Christmas has fuelled calls for a similar 'climate stress test' for European banks.

That climate risks should be a significant concern for financial supervisors is no longer in doubt. The central bank Network for Greening the Financial System ('NGFS' consisting of now 54 institutions) last year already called for climate-related risks to be integrated into standard financial stability monitoring and supervision.

The French and Dutch central banks have conducted quantitative top-down studies and found a substantial potential risk. In the case of the Dutch study, a disruptive climate scenario was shown to reduce insurance sector portfolio values by up to 11 per cent, and banks' core equity ratio by about 4 percentage points.



## Well-defined shocks in the EU stress tests

Stress tests have become the main tool to assess the impact of external shocks on the EU banking system. They are still a relatively new instrument, first used across the EU in 2011, and most publicly in the comprehensive assessment ahead of the ECB taking on its new responsibilities in 2014.

Unlike the US, the EU adopted a bottom-up approach. From the start, banks were given much greater discretion in using their internal models in simulating the impact of the adverse scenario defined by supervisors. This was subject to some limited constraints, for instance in precluding unrealistic asset disposals.

In essence, a single EU exercise has been trying to meet two conflicting objectives: of banks which need to communicate resilience under their own business models to investors; and of supervisors which require a single consistent methodology to gauge the need for additional capital requirements under the so-called pillar 2 approach.

This resulted in an increasingly costly and complex iteration between the EBA and the ECB on the one hand, and the banks and their advisors on the other.



*Climate risks will add an additional layer to risk management*

Following the ongoing round, stress tests are now due for a significant revamp. In late January, the EBA proposed that future stress tests be split into a top-down exercise led by the supervisor, and a parallel bank-led process that relies on bank-specific internal models to a greater extent (see EBA website).

## Climate risks are different

Stress tests simulate a single adverse macroeconomic shock that is defined by the EBA, ESRB and national authorities. Country-specific assumptions for key macro variables given banks a clear pathway over a three year horizon. As was again made clear by a comprehensive new report from the BIS and Banque de France, climate change defies such timelines.

Even though the timing is unclear, a combination of transition risks (from a re-pricing of carbon-based technologies), and physical risks (from increasingly frequent severe weather and climate patterns) is now certain to materialize. There are also more drastic scenarios of predominant physical risks ('no policy action') or transition risks ('too late, too sudden').

Either way, there are likely to be sudden impacts ('tipping points') and complex spillovers between corporate, household and sovereign balance sheets. Outcomes are highly dependent on policy action in key polluting countries in the near term, though also on private sectors mitigation, and technological innovation.

## The agenda for EU supervisors, banks and investors

The recent EBA work programme on sustainable finance committed the agency to develop a dedicated climate-related stress tests. This year a voluntary sensitivity analysis is planned, though by 2021 standards for disclosure are to be put in place. Plans for incorporating environmental, social, and governance (ESG) risks into supervision are more tentative, and maty not be taken up until 2024.

The first priority for EU supervisors should be to develop plausible common scenarios and share these with banks. Scenario analysis is common in large multinational firms, but what is often a 30-year time-horizon is certain to exceed the planning range of most financial firms.

The Bank of England's proposed assessment, for instance, anticipates three scenarios: timely policy measures that will limit global temperature rise to below 2ºC; delayed action only in ten years' time which ultimately succeeds in a similar limitation, though at that point proves highly destabilizing; and no significant policy action which results in substantial temperature increases, and sharp increase in physical risks (damaging weather events, such as storms or floods). Climate scenarios have already been simulated in the insurance sectors of several EU countries and the UK. But they would challenge banks in many ways.

Second, a realistic ambition needs to set in light of the uncertain and drawn-out nature of climate risks. A climate stress would not have the same degree of granularity as is the case currently. As in the BoE proposal initially, the focus should be only on credit losses, not on a comprehensive assessment of the health of a financial firm, its income and capital.

Early on, such analysis (an 'exploratory scenario' in the terminology of the Bank of England) should not be the basis for capital requirements at bank level. A so-called temperature alignment score could be a helpful and public measure of convergence by individual firms towards the commitment made by states under the Paris Climate Agreement: how much would the world warm based on that firm's exposures?

Within EU banks climate risks will add an additional layer to risk management. The already complex workaround supervisory stress tests, of course, will need to continue and is essential for bank soundness. But the conventional

credit risk analysis based on bank-internal models is not suited to climate risks. Historical correlations embedded in bank models simply cannot capture large and complex risks which have not materialized to date.

Banks should not expect that supervisors will accept assumptions of a rapid divestment from carbon-intensive sectors or an adapted business model. The Bank of England proposes to assess the impact on individual exposures in a constant (static) portfolio of assets in a first-round, and allowing a change in the firms' business model only in a subsequent exercise. This approach would be in line with the supervisor-driven approach that limits bank-specific flexibility.

Investors, for their part, should not see future EU climate stress tests as offering the same degree of apparent precision that they have come to expect of stress tests. But disclosure and market discipline will be key incentives for changing portfolios and business models. ESG disclosure under the new EU guidelines on non-financial reporting will need to be quickly rolled out by governments (this has already happened with French state-owned companies, and ESG disclosure will be mandatory in the UK from 2022). Our understanding of climate risks in banks will depend on knowing those across the entire real sector. ■

**Alexander Lehmann is a Non-Resident Fellow at Bruegel**

*This article was originally published on Bruegel*

# Biodiversity: what is at stake?

Biodiversity loss is a serious risk to business. Aleksandar Rankovic and Juliette Landry review an action agenda to curb biodiversity loss

China will host the 15th Conference of the Parties (COP) of the Convention on Biological Diversity (CBD) in October 2020. The international community expects COP15 to see the adoption of an ambitious *"post-2020 global biodiversity framework"* that will become the international reference for the development of policies dedicated to curb biodiversity loss.

However, greater ambition and actions can no longer only count on the commitments of states. 'Non-state actors', and the private sector among them, have a crucial role in the process, and the CBD has even developed a tool in that perspective: the *Sharm El-Sheikh to Kunming Action Agenda for Nature and People*. What is the purpose of the action agenda? What is the opportunity raised here? What is at stake more exactly?

## Serious threats to worldwide societies, including business

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) released its *Global Assessment Report* in May 2019. The report points out accelerated species extinction and warns of the possible extinction in the coming decades of somewhere between 500,000 and one million species.

Furthermore, it is important to note that the Global Assessment does not identify any positive trends at the global level. Direct and indirect drivers of biodiversity loss are intensifying; current goals are very not likely to be met; and, in a few words, nature is falling apart.

Implications for worldwide societies are significant, and business is not exempted. The *2020 Global Risks Report* issued by the World Economic Forum (WEF) reveals that biodiversity loss is the third perceived global risk in terms of impact, and the fourth in terms of likelihood. Risks are tremendous on many aspects. The report refers to the IPBES assessment: food insecurity, health risks, aggravation of climate change, but also business risks.

In May 2019, the OECD assessed biodiversity loss impacts and risks for business and financial organisations, in its report to the French G7 Presidency and the Environment Ministers' Meeting. Globally, ecosystem services, that is to say 'services' provided by ecosystems (and biodiversity) are estimated to provide between USD 125 to 140 trillion per year, one and a half time the global GDP.

The OECD also presented the costs of inaction, representing USD 4 to 20 trillion per year in losses of ecosystem services, from 1997 to 2011. Biodiversity loss, and ultimately the loss of ecosystem services, is an increasing and exponential risk because, for instance, of economic losses from disasters.



*... mobilisation of both states and non-state actors is necessary to ensure that the post-2020 global biodiversity framework will be implemented on the ground, and bear fruit*

Therefore, biodiversity loss will affect the private sector. However, as mentioned by the WEF in its *Global Risks Report*, *"nature-related risks are undervalued in business decision-making."*

## On the path towards COP15

To prepare the final text that will be adopted at COP15, a preliminary document opened for discussions and negotiations was drafted and published in January. This zero draft proposes goals and targets for the 2030 and 2050, as well as some first elements of a policy framework dedicated to implementation.

The document proposes twenty action-oriented targets, divided into three categories:

- Reducing threats to biodiversity;
- Meeting people's needs through sustainable use and benefit sharing;
- Tools and solutions for implementation and mainstreaming.

The first category naturally includes conservation targets, eg. increasing protected areas, but also aims at addressing the most important drivers for biodiversity loss that were identified by the IPBES global assessment report, such as land and sea use change, overexploitation of species, or pollution.

For instance, the draft proposes a 50% reduction of three major pollutant families (nutrients, biocides, plastics). The second category of targets explicitly links biodiversity targets to development targets, eg. food security, access to clean water and livelihood, thus advocating for sustainable use and trade.

Finally, tools and solutions for implementation aims at, inter alia, eliminating harmful subsidies, reforming economic sectors, and promoting sustainable lifestyles through education and other incentives. This category also displays the necessity to mainstream biodiversity into all sectors, to increase sustainable practices, for instance along supply chains.

## Why do we need a biodiversity 'action agenda'?

The idea of a biodiversity action agenda is part of a longer-term trend to strengthen the mobilisation of non-state actors in and around international environmental policies. These initiatives have an important strategic dimension: they exist to create, reinforce and maintain the ambition of multilateral discussions, but also to complement them, to accompany their implementation, and even to act as a relay.

Action agendas have thus been created for the Global Compact (2000), the Johannesburg Summit Type II Partnerships (2002), the Rio+20 Global Registry of Voluntary Commitments (2012) and, more recently, the Global Climate Action Agenda (2014), the Sendai Framework for Disaster Risk Reduction (2015) and the Ocean Commitment Registry for the implementation of SDG 14 (2017).

Both for the development of the post-2020 framework, and for its implementation, increase this kind of mobilization is of utmost importance. In practice, an Action Agenda can fulfil at least four functions, before or after major international negotiations, all of which apply in the case of biodiversity:

- **Aligning imaginaries towards change:** the aim here is to align expectations, by making signals converge through mobilising all types of actors and from all sectors, and by staging/enhancing their commitments. This is notably important for actors who do not usually make commitments on biodiversity (and this feature of the Action Agenda thus also serves as an attraction function).

The aim prior to COP15 would be to signal that change is happening, and that the course of history is that of a change towards protecting biodiversity in policies and in socio-economic sectors; and to disseminate the message that there is much to gain by being involved in this transition, and much to lose by not being part of it.

- **Putting pressure on parties:** such a mobilisation can provide positive pressure to the negotiating process, signaling to political leaders that large numbers of actors are ready to take action for biodiversity and are calling for an ambitious international framework, that would facilitate their actions.

- **Enabling difficult discussions and initiatives:** an action agenda can also be used to organise and structure discussions and coalitions on issues that are difficult to tackle head-on in the constrained framework of multilateralism, while providing these initiatives visibility and proximity to negotiations.

- **Catalysing and channeling energies:** an action agenda can have a catalytic effect that facilitates the strengthening of existing coalitions and/or the launch of new ones.

At the same time, a close proximity to the negotiating arena avoids the loss of energy and ensures that such initiatives fulfil their potential in terms of helping to achieve the global objectives determined within multilateral frameworks.

The Global Climate Action Agenda provides a suitable reference in this regard. Launched in Lima in 2014 by the Peruvian and French Presidencies of COP20 and COP21, the Lima-Paris Action Agenda (LPAA) was primarily intended to demonstrate that the commitments of non-state actors could contribute to the achievement of goals to limit global warming, particularly by helping to bridge the 'ambition gap' by 2020.

Due to the considerable involvement of the presidencies, along with effective support from the UN Secretary-General and the UNFCCC Secretariat, the LPAA helped raise awareness and mobilise different groups of actors that now include 12,396 stakeholders (scientists, business and finance sectors, communities, NGOs).

The process consisted of a series of events focused on sectoral themes, which have enabled the formalisation of practical initiatives, the profiles of which have been raised through the registration of voluntary commitments on an online platform known as NAZCA (Non-State Actor Zone for Climate Action), set up by the UNFCCC Secretariat.

Actors directly involved in the organisation of COP21 have acknowledged that the LPAA constituted a driving force in the negotiations leading to Paris, having enabled the *"development of alliances and multi-partner coalitions which act, move forward, energise and influence States and vice versa."*[1]

## A translation into the language of biodiversity: the Sharm El-Sheikh to Kunming action agenda

The *Sharm El-Sheikh to Kunming Action Agenda for Nature and People* was launched in November 2018 during the COP14 of the Convention on Biological Diversity (CBD). The announcement came in response to calls from some states and many non-state actors[2], to support the adoption of an ambitious biodiversity framework at COP15. A dedicated web platform went online in March 2019.

The action agenda, as defined at COP14, currently has three objectives:

- Raise public awareness about the urgent need to stem biodiversity loss and restore biodiversity health for the sake of humanity and the global ecosystem;

- Inspire and help implement nature-based solutions to meet key global challenges, addressing societal goals through the protection, restoration and sustainable management of ecosystems. Nature-based solutions help in providing food, clean air and water, or in preventing diseases and natural disasters, while safeguarding biodiversity;

- Catalyse cooperative initiatives across sectors and stakeholders in support of the global biodiversity goals. The establishment of this agenda is also an opportunity to look for concrete points of collaboration, beyond the rigid framework of the conventions, in the implementation of international regimes for the protection of the environment, on biodiversity, climate, and the oceans.

The platform is opened to non-governmental or subnational organisations but also to the private sector or to individuals, and encourages those actors to submit 'biodiversity commitments'.

But as for now, this mobilisation is not at scale. As mentioned in the OECD report, finance flows harmful to biodiversity represent USD 500 billion per year, whereas biodiversity-relevant spending only represents USD 49 billion. Though it is urgent to reform economic sectors and promote biodiversity-relevant practices, and to redirect investments and financial flows, the Action Agenda Platform only counts less than 90 commitments, nearly one year after its launch.

In addition, most of those commitments are issued by academic and research institutes. The platform thus needs to be taken over by business and financial organisations to ensure its operationalization and concrete results on the road to the COP 15.

## A momentum from business and financial organisations

The post-2020 global biodiversity framework is likely to help frame reforms on economic sectors and subsidies. Parties to the CBD, that is to say governments, will have to redirect their incentives in order to comply with their commitments.

Nevertheless, the implementation of such targets is not ensured, as many obstacles are still on the path to success and achievement. There is an important necessity to develop a joint momentum from both public and private stakeholders.

Together, they should address the enormous gap between global finance needed to achieve the post-2020 global biodiversity framework and the actual and current financial flows, investing in the many existing opportunities for biodiversity and ecosystems.

Biodiversity and the process leading to COP15 of the CDB is increasingly high on the international agenda. The second session of pre-negotiations was held in Rome, last February. Parties mainly discussed the drafted targets and goals, but also first propositions on implementation mechanisms, before the release of a new version in June.

The results of the talks, taking place in Cali, Colombia, in July, will shape the last working basis for negotiation at COP15. However, prior to this, mobilisation of both states and non-state actors is necessary to ensure that the post-2020 global biodiversity framework will be implemented on the ground, and bear fruit. ■

**Aleksandar Rankovic is the Coordinator, and Juliette Landry is a Research Fellow, on International Biodiversity Governance at the Institute for Sustainable Development and International Relations (IDDRI, Sciences Po, Paris)**

*Endnotes*

*1. Ourbak, T (2017). Analyse rétrospective de la COP 21 et de l'Accord de Paris : un exemple de diplomatie multilatérale exportable, Expert report, MAEDI, p. 14.*

*2. Rankovic, A, Maljean-Dubois, S, Wemaere, M, Laurans, Y (2019). An Action Agenda for biodiversity: Expectations and issues in the short and medium terms, IDDRI, Issue Brief N°04/19. https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue Iddri/D%C3%A9cryptage/201904-IB0419EN_action agenda CBD.pdf*


# Iceland for your next event?

## RAISE YOUR SPIRIT AND CAPTURE THE ENERGY


The power of Iceland lies in the energetic source of nature, culture and local mindset. All these elements serve as the perfect backdrop for a memorable and effective event. Visitors claim it is the island's energy, diversity and authenticity that gives the country an otherworldliness and spiritual inspiration.

The capital city Reykjavik is nestled by stunning nature and you can choose from various meeting facilities that offer revitalizing views. Just outside the city limits are natural wonders waiting to be explored.

MEET IN REYKJAVÍK
Reykjavík Convention Bureau

*Our attentive team at Meet in Reykjavik is ready to help and our wide network of suppliers offers the resources and know-how to design unforgettable events.*

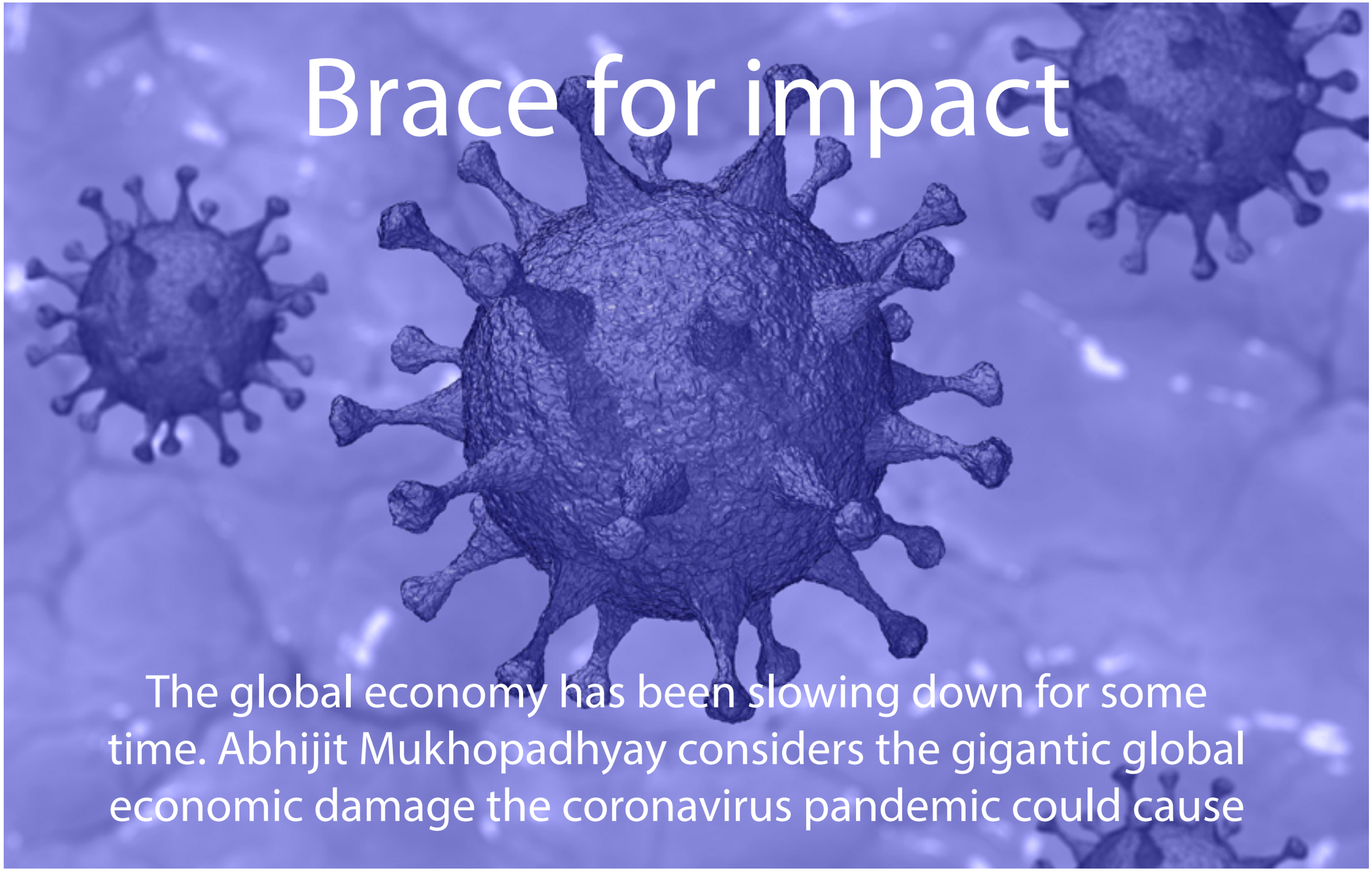
Download our app for pictures and videos.

Available on the App Store

ANDROID APP ON Google play

conference@meetinreykjavik.is / Tel: +354 527 6666 / Sóltún 26, 105 Reykjavík, Iceland / **www.meetinreykjavik.is**

# Brace for impact



The global economy has been slowing down for some time. Abhijit Mukhopadhyay considers the gigantic global economic damage the coronavirus pandemic could cause

## A decelerating world economy toppled by COVID-19

In January 2020 the International Monetary Fund (IMF) *World Economic Outlook Report* projected global growth to rise from an estimated 2.9% in 2019 to 3.3% in 2020, and subsequently to 3.4% in 2021.

This was done after a downward revision of 0.1 percentage point for 2019 and 2020, and 0.2 percentage point for 2021 to its projected figures of growth in the *October Outlook*.

The downward revision has been done due to negative reports of growth in a few emerging economies, including India – apart from trade tensions existing worldwide. The *January Outlook* also recognised tentative positive signs of manufacturing and global trade bottoming out, favourable outcome of US-China trade negotiations, and diminished signs of a no-deal Brexit[1].

Before these IMF growth projections came out, by the end of December 2019 in the Chinese city of Wuhan a strange flu suddenly appeared – reportedly all initial affected patients were somehow related to a 'wet market' in the city. The Chinese administration, in its usual denying reflex action, immediately tried to hush up these happenings, only to wake up to the enormity of the threat later.

The disease has turned out to be a novel strain of coronavirus or COVID-19. More than 156,700 cases have been confirmed since the outbreak and the number of deaths has risen to 5,800 across 114 countries and is increasing every day[2]. The spread is now across the continents, and the scenario in countries like Italy, Iran and the USA – outside China – is quite threatening.

The intercontinental nature of this rapid spread of the virus has finally prompted World Health Organization (WHO) to declare COVID-19 as a pandemic on 11 March 2020[3]. UNCTAD envisioned a probable global economy output loss

of $1 trillion, compared to the forecast made in September 2019. Another extreme 'Doomsday scenario' involves a 0.5% growth in world economy, and that would imply a clear $2 trillion hit in 2020[4].

Even at the beginning of February a few have been hoping for a contained global scenario for this outbreak. However, the current situation has made it amply clear that a contained scenario is out of question. Different countries of the world are trying to cope with different measures of 'social distancing' via lockdown, restricted movements and various methods of mitigation.

In short, these imply a serious disruption in trading, economic and business activities everywhere in the world. The shock will surely be felt in global economic growth as well. The big question now is – how much economic disruption will there be?



*A pandemic of this scale also needs internationally coordinated actions across countries and continents*

**Table 1. Impact of COVID-19 on global economy: two possible scenarios**

| Base scenario: temporary blow | Domino scenario: broader contagion |
|---|---|
| • Severe, short-lived downturn in China – where GDP growth would fall below 5% in 2020 after 6.1% in 2019, but would recover to 6.4% in 2021.<br>• In Japan, Korea, Australia also growth would be hit hard, followed by gradual recovery.<br>• Impact less severe in other economies but still would get hit by drop in confidence and supply chain disruption. | • Intensity of China impact repeated in northern advanced economies severely hitting confidence, travel and spending.<br>• Global growth could drop to 1.5% in 2020, half the rate projected before the outbreak or even lower.<br>• Recovery much more delayed and gradual through 2021. |

*Source: OECD Economic Outlook, Interim Report, March 2020*

## A broader COVID-19 contagion and rampant disruption likely

The *OECD Interim Report* this month on COVID-19 classifies possible scenarios in two future categories – baseline and a domino scenario. As news of a greater number of cases and deaths are pouring in, it looks like the world is definitely heading towards a domino scenario, where global economy might even take the entire next year to recover.

Global trade remained weak even before the COVID-19 outbreak (Figure 1). As a result, standard indicators like container port traffic, air freight traffic and air passenger traffic dipped significantly in 2019. GDP and trade projections for the US, China and the world have been worse earlier, but improved significantly after Phase One

agreement between the US and China, with the hope that situation may improve in 2020 (Panel B of Figure 1). However, the worldwide spread of coronavirus changes everything now.

As trade weakened, global GDP growth also lost its momentum – particularly after 2017. Four advanced economic zones (Australia, Eurozone, Japan, the UK and the US) experienced a deepening fall in their Purchasing Managers' Index, signifying acute slowdown after 2017 (Figure 2). Panel B shows the absolute dip in both new manufacturing and services orders since middle of 2017. The fall in orders accelerated further in 2019 before showing slight marginal turnaround in the end of the year.

So, the overall economic, business and trade dynamics were already in the red zone for the last two years or so. The COVID-19 outbreak could not have arrived at a more inopportune moment for the global economy.

## How bad the will be the effect on the world economy?

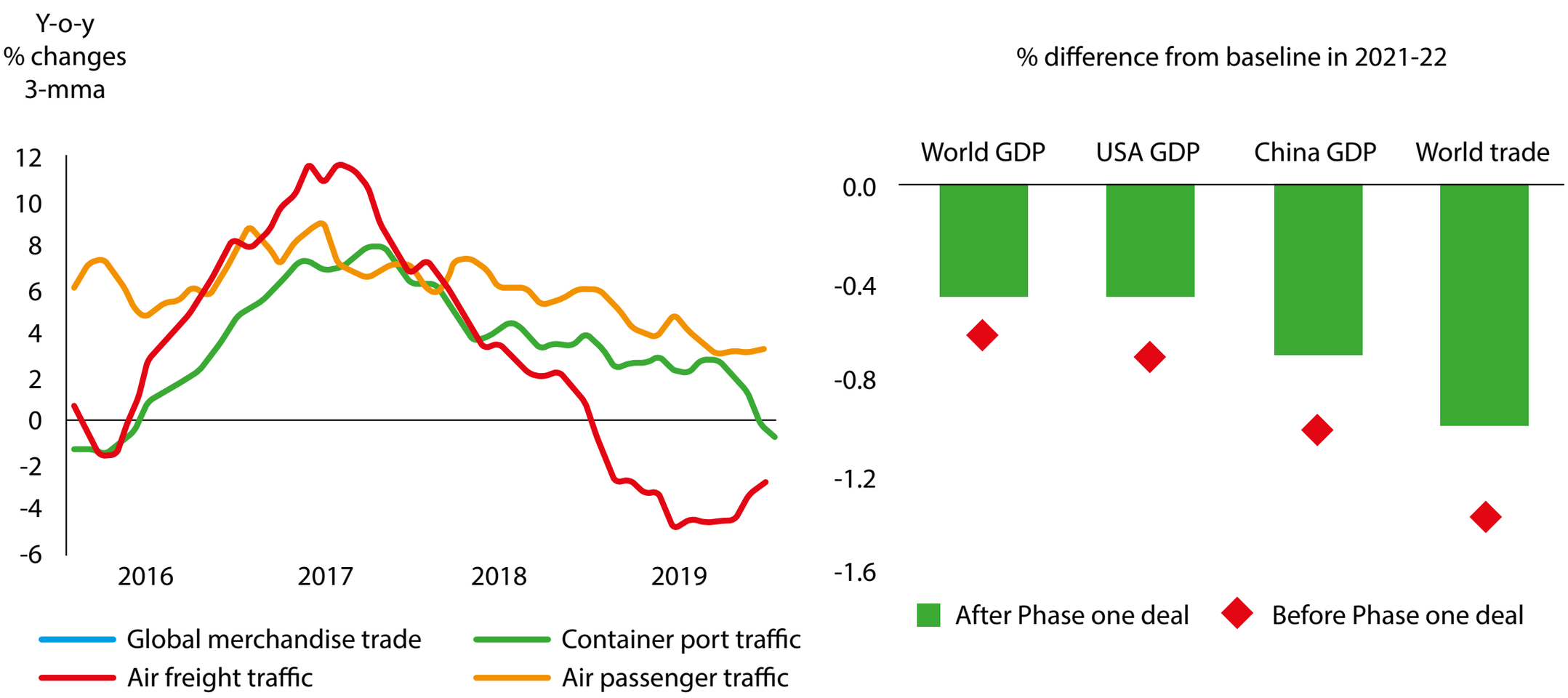
The OECD *Report*[5] created the domino scenario (broader contagion) assuming the countries affected by COVID-19 would represent over 70% of global GDP (in PPP terms). Key additional shocks considered in this scenario include:

- Domestic demand in most other Asia-Pacific economies, including Japan and Korea, and private consumption in the advanced northern hemisphere economies reduced by 2% (relative to baseline) in the second and third quarters of 2020.

- Global equity prices and non-food commodity prices lowered by 20% in the first nine months of 2020.

- Heightened uncertainty modelled via an increase of 50 basis points in investment risk premia in all countries in 2020.

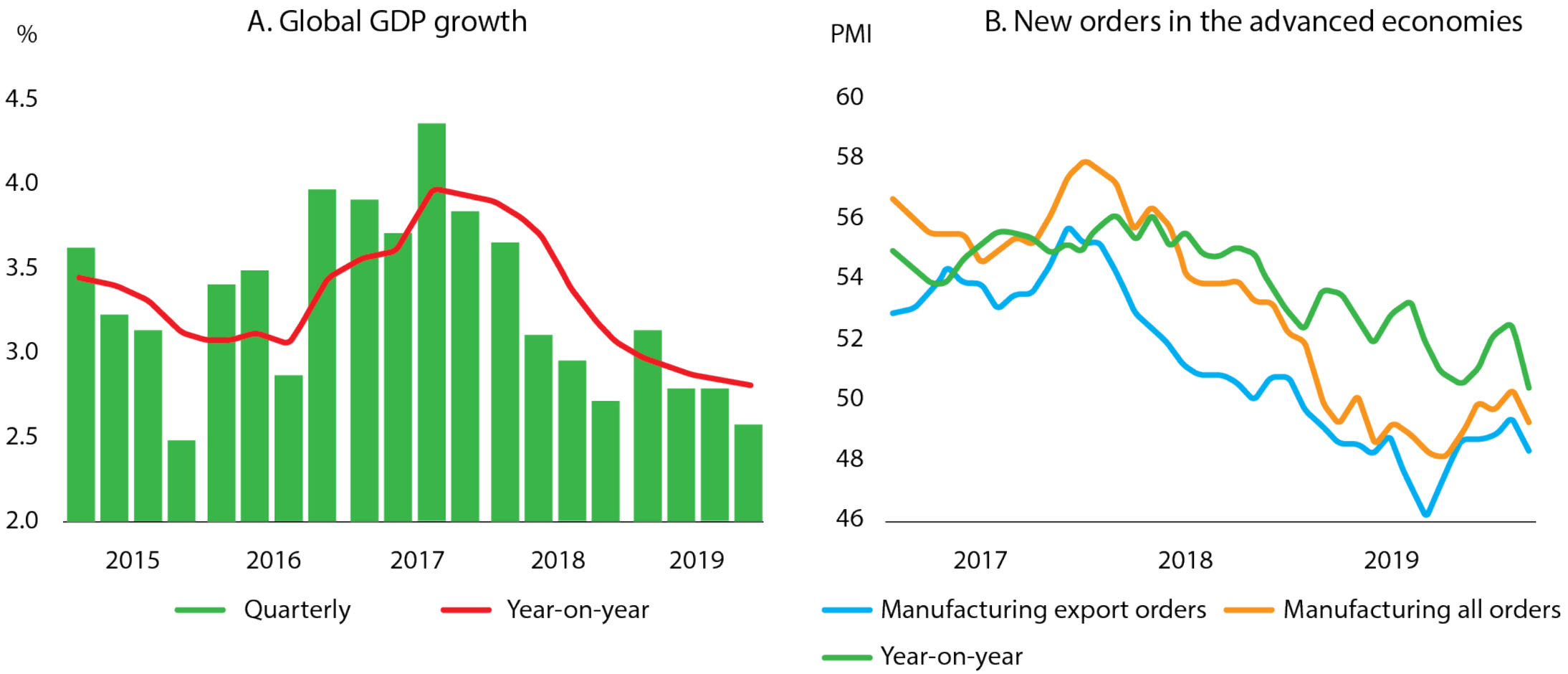
## Figure 1. Global trade remained weak even before COVID-19




*Source: OECD Economic Outlook, Interim Report, March 2020*

** Estimates in Panel B show the combined impact of the changes in bilateral tariffs implemented by the US and China in 2019 prior to and after the Phase One Agreement and a global rise of 50 basis points in investment risk premia that persists for three years before slowly fading thereafter. All tariff shocks are maintained for six years. Impact assessment based on simulations.*

## Figure 2. Global growth also lost momentum earlier




*Source: OECD Economic Outlook, Interim Report, March 2020*
** GDP at constant prices on a PPP (Purchasing Power Parity) basis. Data for fourth quarter of 2019 are estimates. The advanced economy PMI (Purchasing Managers' Index) series are a PPP-weighted average for Australia, Euro Zone, Japan, the UK and the US.*

In that kind of a broader contagion, economic impact would be severe in all major regions and country groupings (Figure 3). China, the epicentre of the outbreak, would be hit the most for obvious reasons, but other Asia-Pacific countries would be impacted as badly – the dip in their GDP may be 1.6% or more. The G-20 would be the next, followed by North America, other major commodity exporter countries and Europe. Negative impact on the world GDP can be 1.5% or more in this scenario.

Stock markets across the world crashed in March after the WHO declared the spread of coronavirus an emergency (and subsequently a pandemic) (Figure 4). Major world stock market indices like the Dow Jones, Nikkei and FTSE 100 all crashed through the month of March.

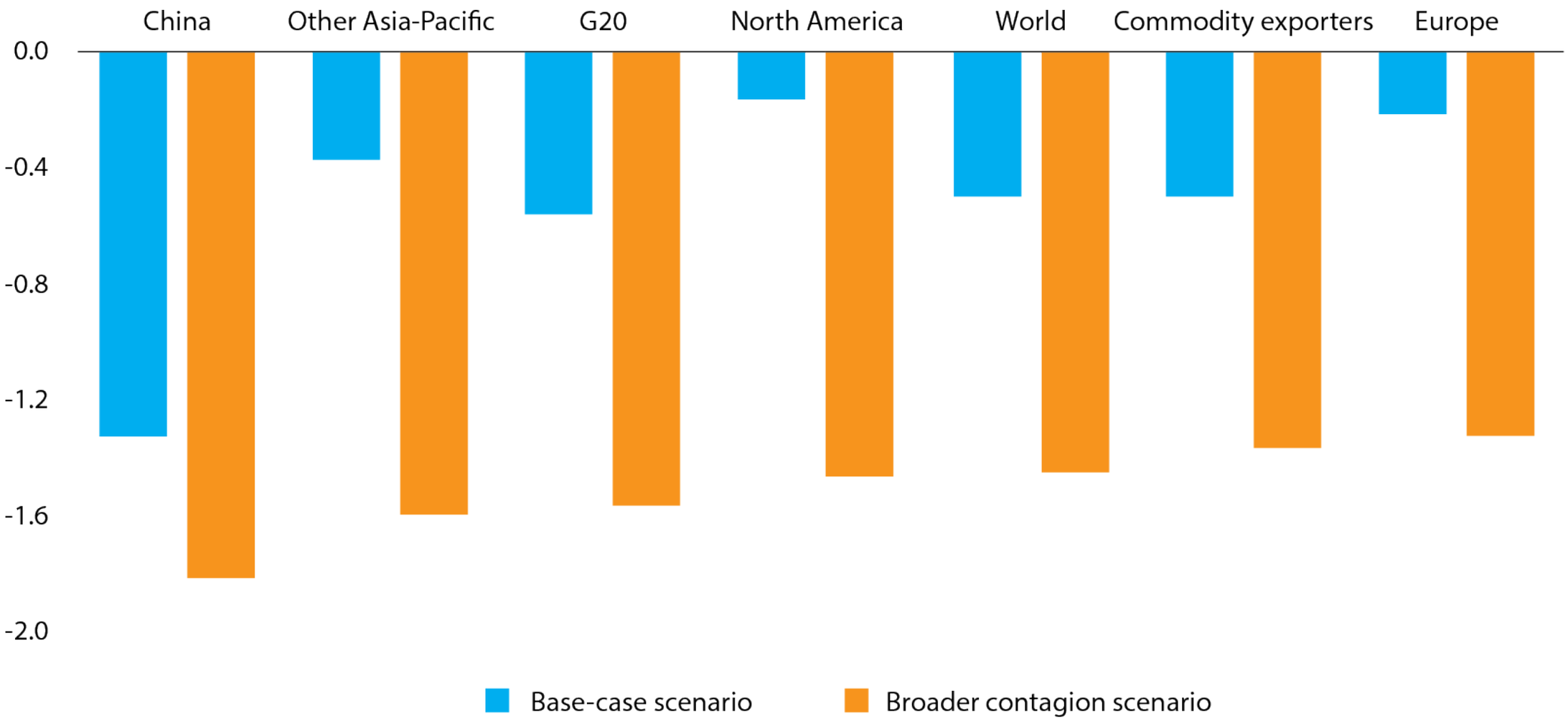
However, the glaring anomaly in the overall trend comes from China. While elsewhere in the world (including the USA and the Europe) the virus is spreading rapidly, China is trying to get back to work after somehow dealing with the initial jolt of the outbreak. Factories and restaurants are re-opening their doors, and the investors are looking into a probable big stimulus package from the Chinese government. And the result is – China is currently the best performing stock market in the world, though six weeks ago from the present time it was the worst[6].

## Global economic disruption will follow the Chinese pattern

Figure 5 shows China's current integration in global value chains across sectors, measured by the Grubel-Llyod Index (GLI). The importance of Chinese manufacturing in many global value chains is an axiomatic truth in today's world. As the figure shows, it is particularly pivotal in precision instruments, machinery, automotive and communication equipment value chains – among others.

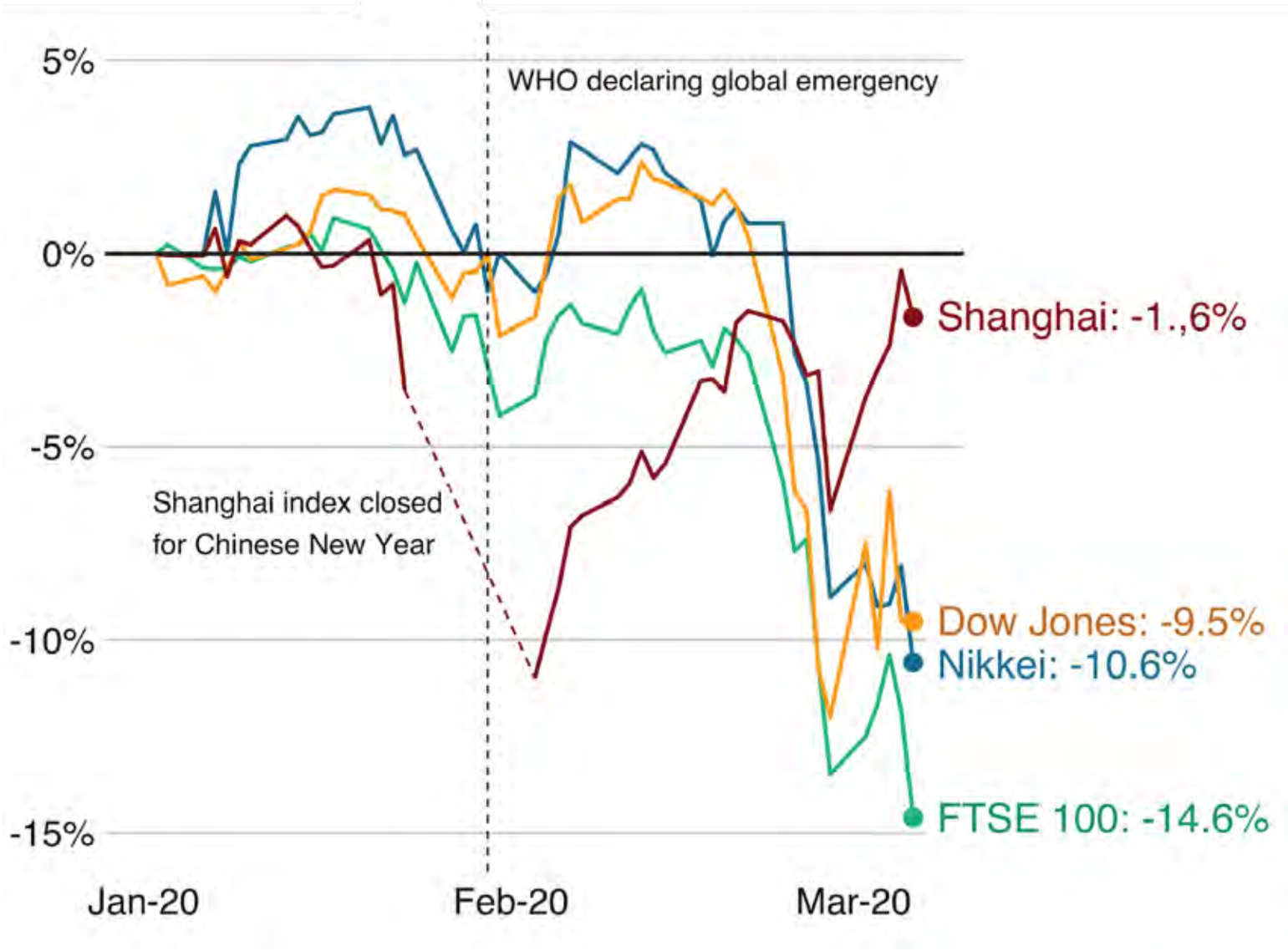
In simple words, any significant disruption in China in these value chains will affect producers in the rest of the world. Restrictive measures to contain COVID-19 would definitely disrupt and negatively affect the output of

## Figure 3. Illustrative coronavirus scenarios: Change in GDP growth in 2020 relative to baseline (in percentage points)



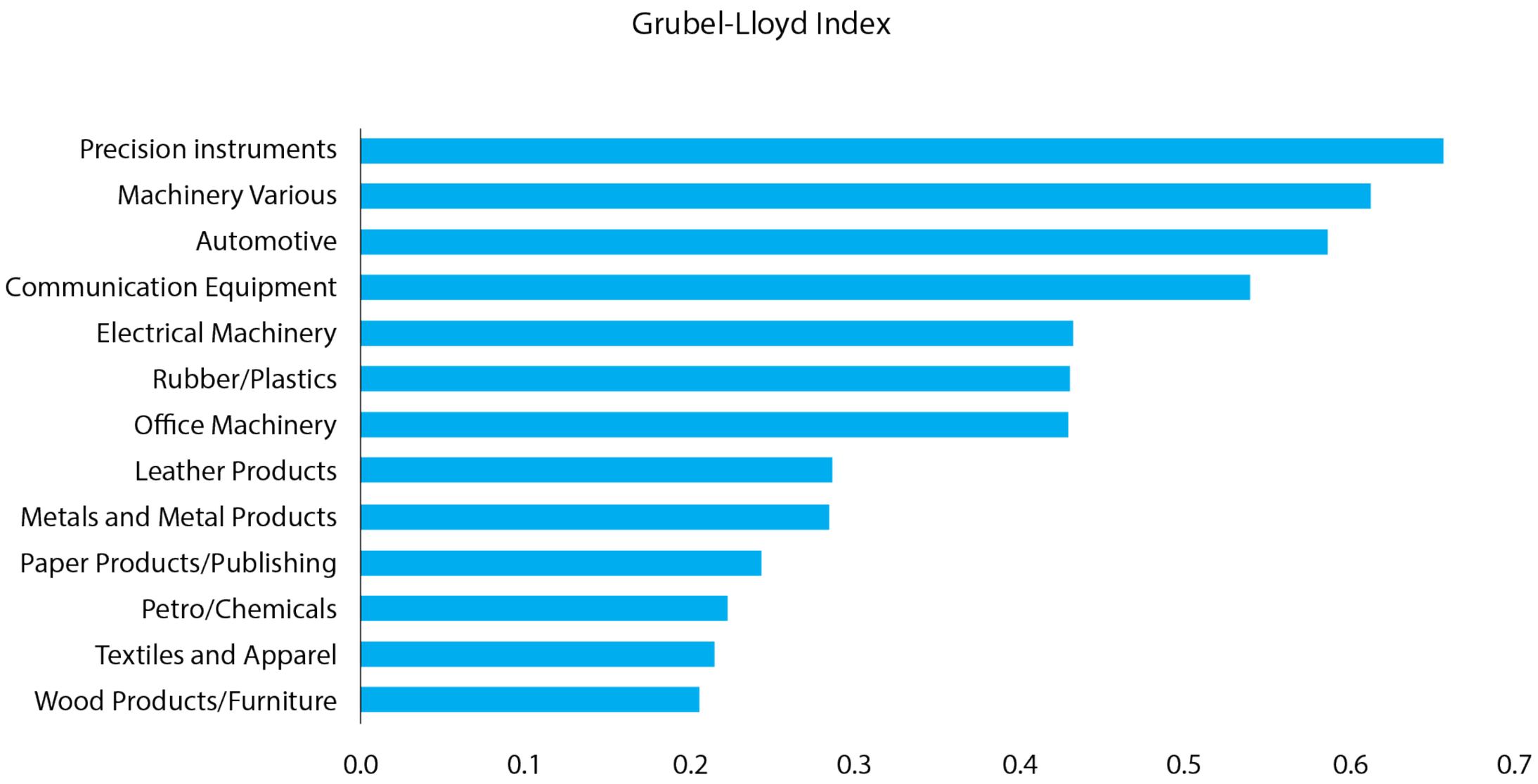

*Source: OECD Economic Outlook, Interim Report, March 2020*
** Simulated impact of weaker domestic demand, lower commodity and equity prices and higher uncertainty. Base-case scenario with the virus outbreak centred in China; broader contagion scenario with the outbreak spreading significantly in other parts of the Asia-Pacific region, Europe and North America. Commodity exporters include Argentina, Brazil, Chile, Russia, South Africa and other non-OECD oil producing economies.*

## Figure 4. Coronavirus impact on stock markets




*Source: BBC News*[7]

**Figure 5. China integration in global value chains, by sector (in terms of Grubel-Lloyd Index)**




*Source: UNCTAD[8]*
** Grubel-Lloyd Index (GLI) measures intra-industry trade of a particular product.*

producers elsewhere in the world. The slowdown pattern elsewhere in the world is also likely to be similar to China's slowdown.

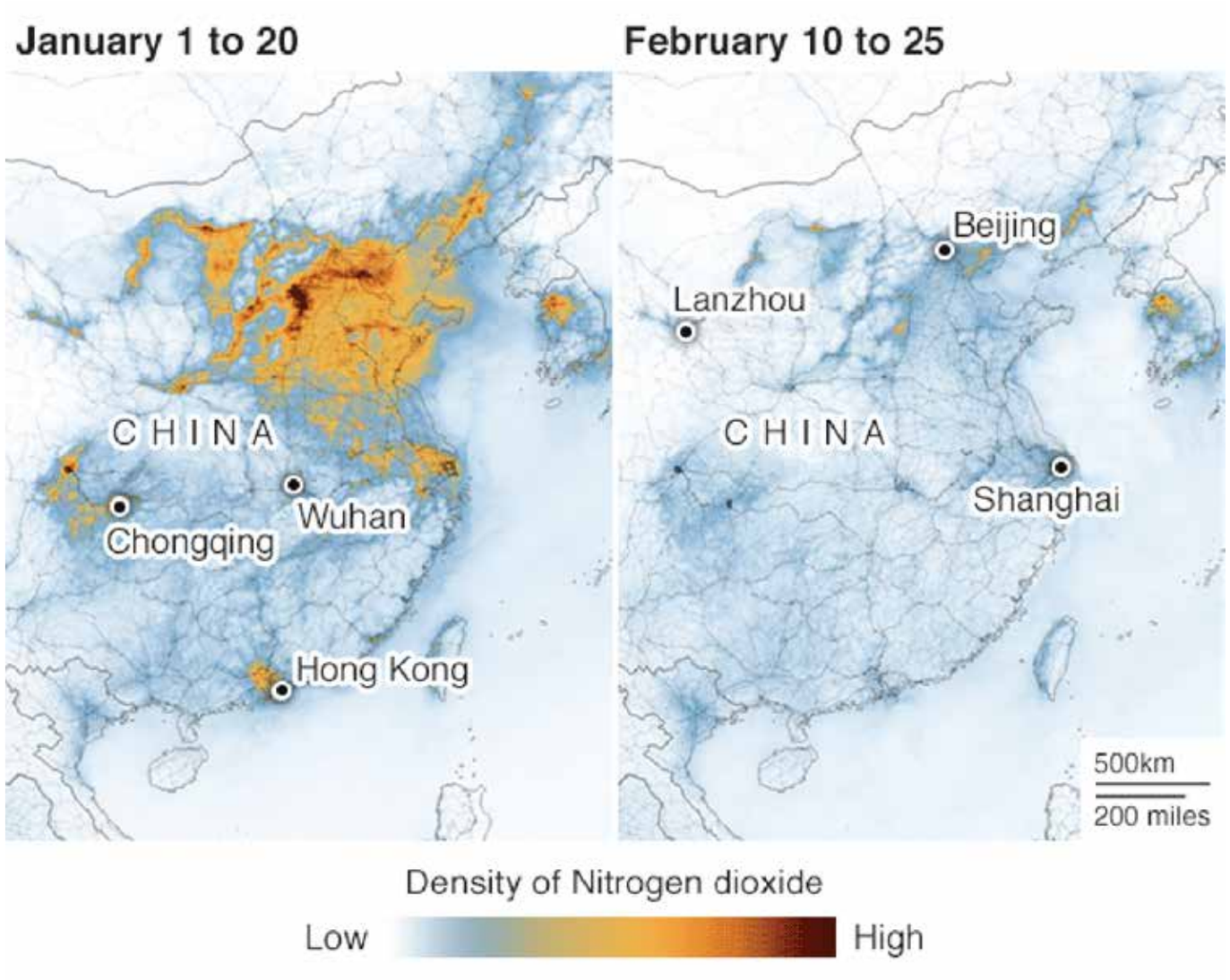
Another important point to be noted here is that even where the global value chain integration of China is relatively smaller, there are sectors dominated by the Chinese producers. One example can be textiles and apparel sector – it has relatively less value of global value chain integration, but the fact is that China is one of the major producers of textiles products. Less value chain integration actually means that Chinese textile is self-sufficient and production process is end-to-end – from raw material to finished textile products.

Satellite images acquired from various sources, including NASA, show drastic fall in the level of pollution in China – specifically around affected Wuhan city and other major Chinese cities like Beijing, Shanghai and Hong Kong (Figure 6).

Nitrogen dioxide level in the lower atmosphere, as can be seen, almost vanished in the month of February, compared to January 2020 level. This demonstrates the effect of slightly delayed lockdown the Chinese government imposed. But the enormity of the shutdown can be realised if the vanishing of nitrogen dioxide just in a month is considered. Being the manufacturing powerhouse of the world, the sheer scale of such industrial shutdown in China is bound to create tremors in other manufacturing hubs of the world.

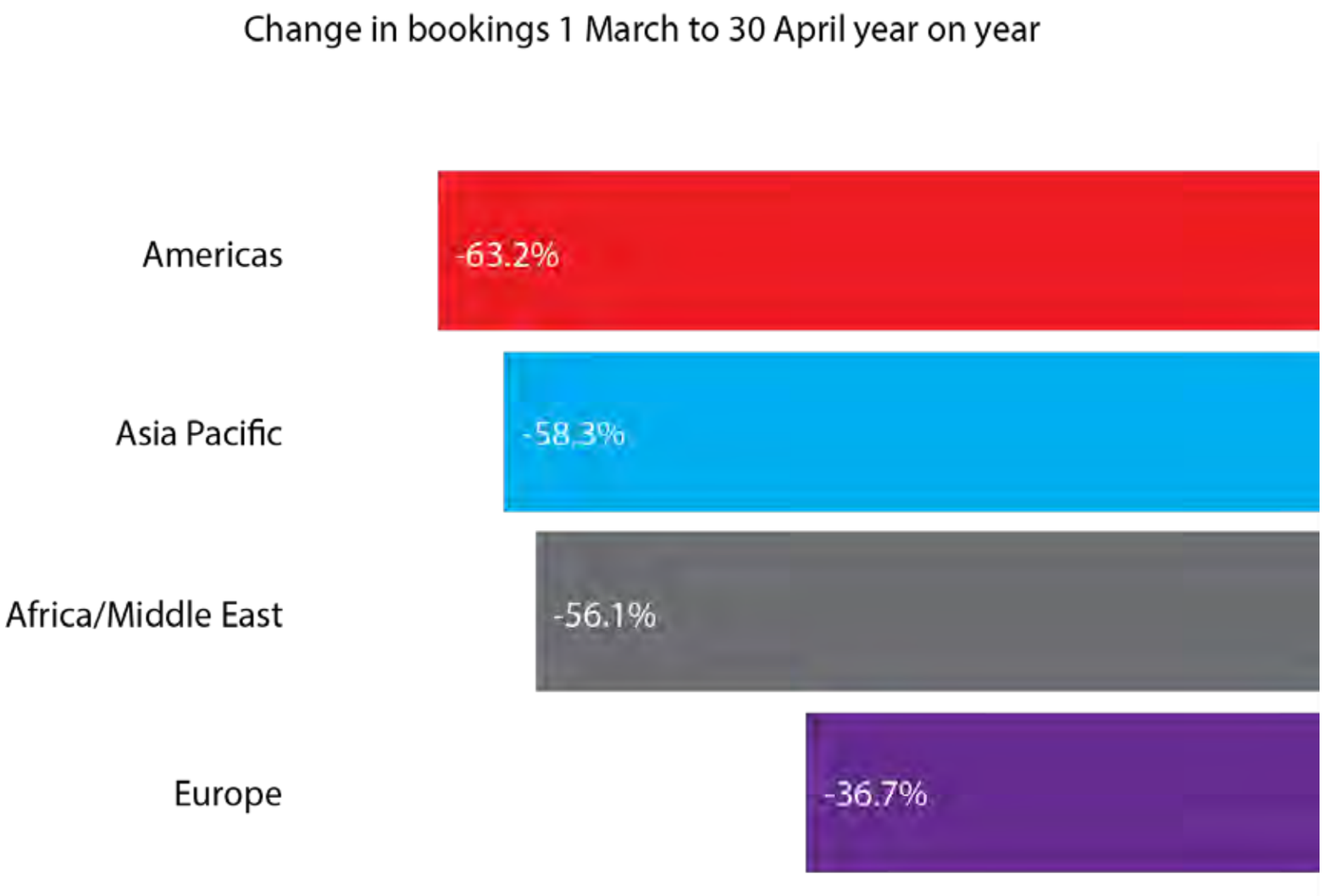
Among the hardest hit sectors, primary is travel. Restrictions imposed at different countries are likely to reduce the number of international travellers drastically. Change in bookings of Chinese travellers across continents show drastic drops (Figure 7).

## Figure 6. Satellite images show drastic fall in pollution in China amidst slowdown




** Pollution shown in terms of nitrogen dioxide level in lower atmosphere.*
*Source: BBC News[9]*

## Figure 7. Number of Chinese travellers to all destinations have fallen sharply




*Source: BBC News*[10]

For example, there have been 415,000 visits from China to the UK in the preceding 12 months to September 2019. Chinese travellers spend three times more than an average tourist to the UK at £1,680. A fall in the number of tourists would obviously impact the airline, hospitality and other associated industries.

As mentioned earlier, the world economy has been experiencing a slowdown in demand, and China was no exception. Car sales growth going into the negative in 2019 is one indicator of that. However, the most alarming aspect is that after the coronavirus outbreak in the first two weeks of February 2020 Chinese car sales dropped by a whopping -92% (Figure 8).

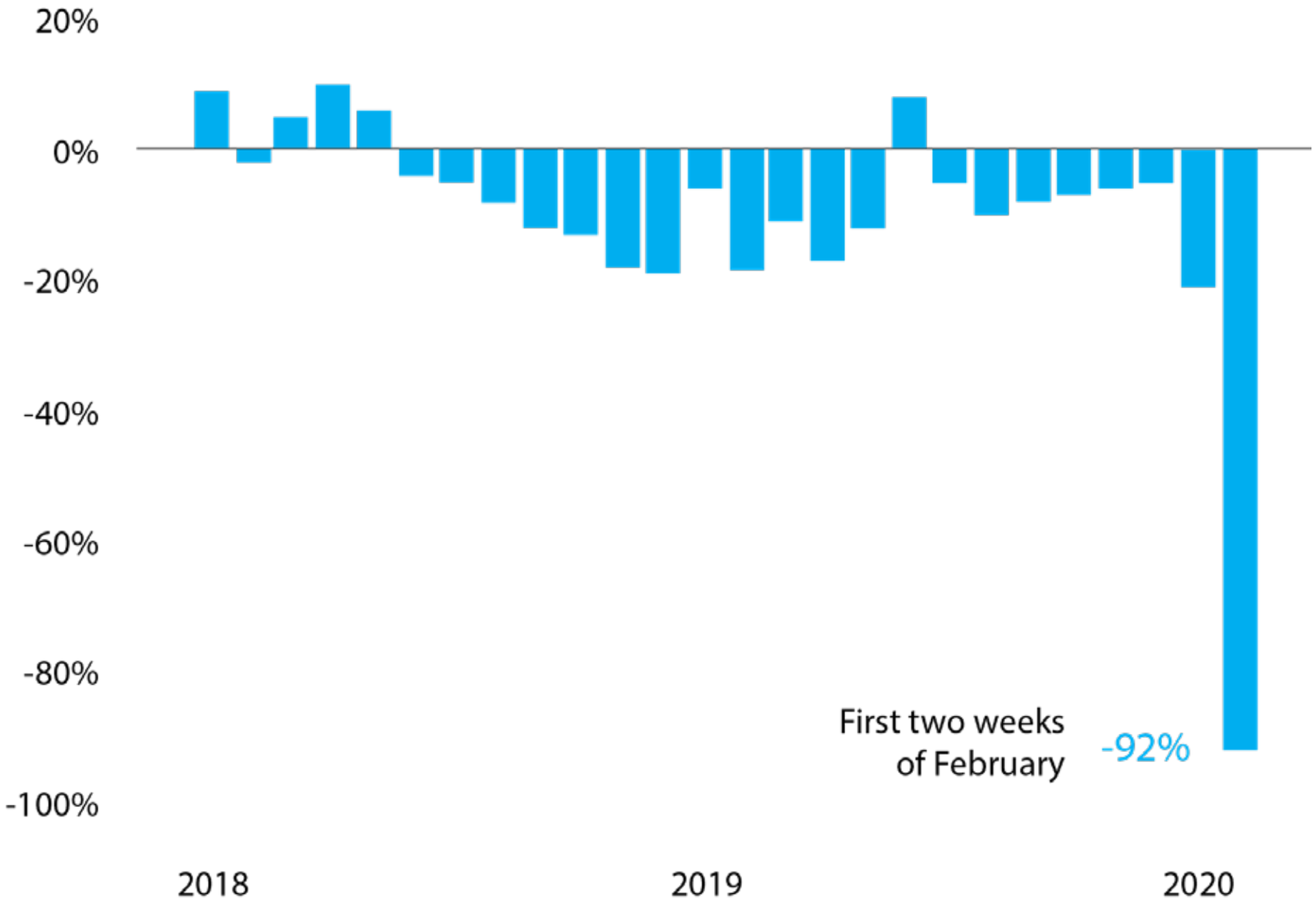
More upper-end carmakers, like Tesla or Geely, are now selling cars online as customers generally are staying away from the showrooms. Restaurants and other shops related recreation, shopping malls, movie business are also among other sectors which are immediately and badly hit.

## Conclusion

To stop any epidemic (in this case, a larger historic pandemic) economic costs have to be paid. There is not much of a choice. However, the already existing slowdown across global economy has made the situation worse. The governments of different countries across the world have their immediate job cut out – the foremost being protecting the health and income of the most vulnerable sections.

In China, the poorest are paying the steepest price of this outbreak – in terms of death, health hazard and economic survival. A pandemic of this scale also needs internationally coordinated actions across countries and continents. Once these short-term humanitarian goals are achieved, only then longer-term policy actions to boost economic recovery will come.

## Figure 8. Car sales in China drop sharply in 2020




*Source: BBC News*

Unfortunately, current tidings from different corners of the world belies these concerns – both short-term and long-term. This outbreak has exposed the limitations of the existing models of healthcare followed in most of the countries.

Even in macroeconomic terms, all these will translate into economic damages of epic proportions. Instead of closing our eyes to that stark reality, it is better to brace for that impact, and bring humanitarian, societal and economic recoveries firmly into the agenda of a post-pandemic world. ■

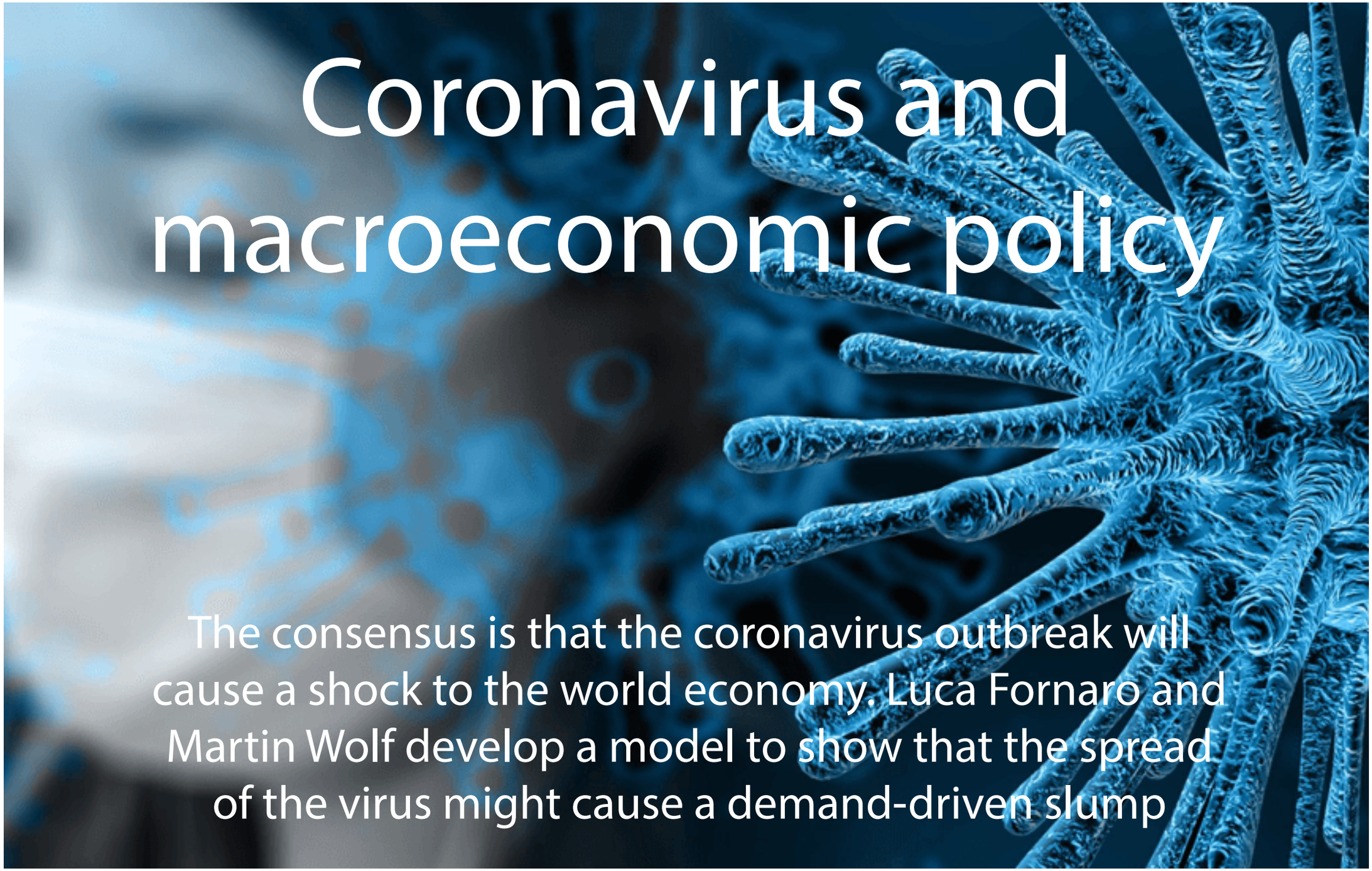
**Abhijit Mukhopadhyay is a Senior Fellow (Economy and Growth) at the Observer Research Foundation, New Delhi**



*Endnotes*

*1. IMF (2020), "World Economic Outlook Update", 20 January*
*2. The Telegraph (2020), "What is coronavirus, how did it start and could the outbreak grow bigger?", 15 March, available at https://www.telegraph.co.uk/news/2020/03/15/what-coronavirus-how-outbreak-start-covid-19-pandemic/*
*3. WHO (2020), "Director-General's opening remarks at the briefing on COVID-19", 11 March, available at https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020*
*4. UN News (2020), "Coronavirus update: COVID-19 likely to cost economy $1 trillion during 2020, says UN trade agency", 9 March, available at https://news.un.org/en/story/2020/03/1059011*
*5. OECD (2020), "Interim Economic Assessment – Coronavirus: The world economy at risk", 2 March, available at https://www.oecd.org/economic-outlook/*
*6. The Economist (2020), "Daily Chart: Control of the coronavirus gives China the world's best-performing stockmarket",*

*14 March, available at https://www.economist.com/graphic-detail/2020/03/14/control-of-the-coronavirus-gives-china-the-worlds-best-performing-stockmarket*
*7. BBC News (2020), "Coronavirus: Eight charts on how it has shaken economies", 6 March, available at https://www.bbc.com/news/business-51706225*
*8. UNCTAD (2020), "Technical Note: Global trade impact of the Coronavirus (COVID-19) Epidemic", 4 March, available at https://unctad.org/en/PublicationsLibrary/ditcinf2020d1.pdf*
*9. BBC News (2020), op. cit.*
*10. BBC News (2020), Ibid*



# Coronavirus and macroeconomic policy

The consensus is that the coronavirus outbreak will cause a shock to the world economy. Luca Fornaro and Martin Wolf develop a model to show that the spread of the virus might cause a demand-driven slump

The consensus is that the coronavirus outbreak will cause a negative supply shock to the world economy, by forcing factories to shut down and disrupting global supply chains. This column develops a simple model to show that the spread of the virus might cause a demand-driven slump, give rise to a supply-demand doom loop, and open the door to stagnation traps induced by pessimistic animal spirits.

As we write, the COVID-19 coronavirus is spreading throughout the globe. Besides its impact on public health, this coronavirus outbreak is likely to have significant economic consequences. The consensus is that the virus will cause a negative supply shock to the world economy, by forcing factories to shut down and disrupting global supply chains (OECD 2020).

But how deep and persistent is this supply disruption going to be? Will aggregate demand be affected? How should monetary policy respond? What about fiscal policy?

In Fornaro and Wolf (2020), we look at these questions through the lens of a simple model. We focus on the (hopefully pessimistic) possibility that the supply disruption caused by COVID-19 will be severe and persistent[1]. We show that the spread of the virus might cause a demand-driven slump, give rise to a supply-demand doom loop, and open the door to stagnation traps induced by pessimistic animal spirits.

## The impact of coronavirus on aggregate demand

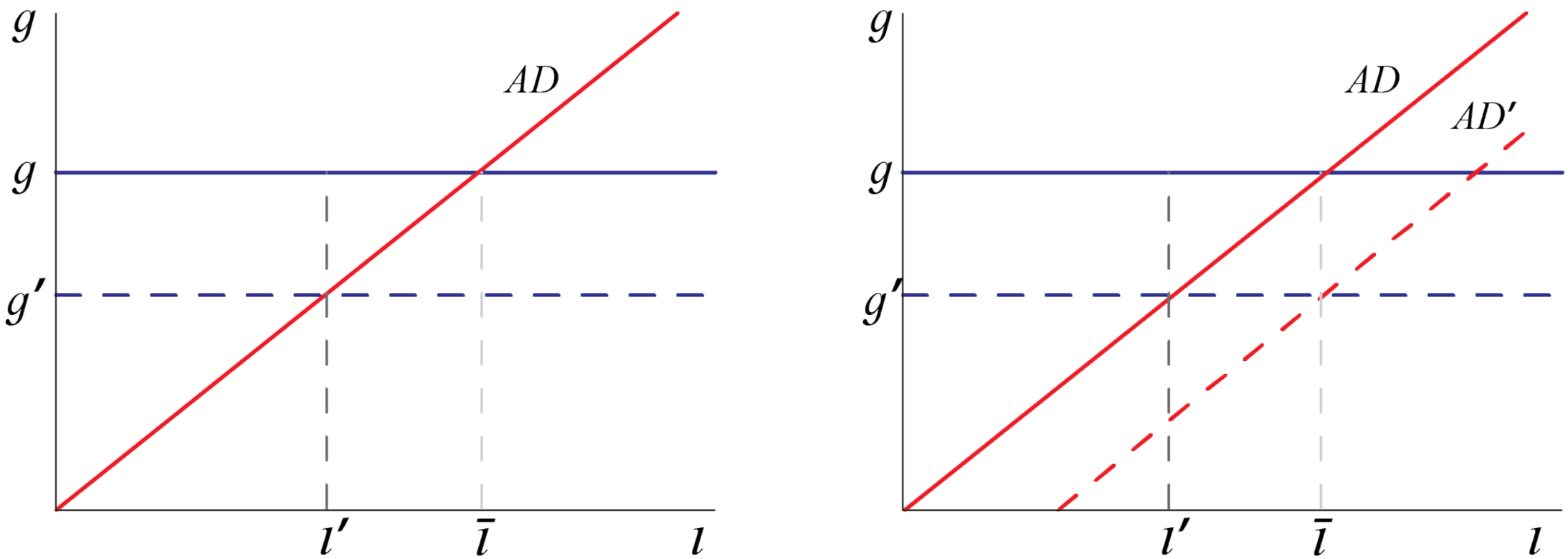
We take as our starting point a stripped-down version of the standard New Keynesian model (Gali 2009). As in the Keynesian tradition, employment and output are determined by aggregate demand. In turn, aggregate demand depends positively on productivity growth.

The reason for this is that faster productivity growth boosts agents' expectations of future income, inducing them to spend more in the present (Lorenzoni 2009). This effect gives rise to a positive relationship between productivity growth ($g$) and employment ($l$), illustrated by the $AD$ curve in Figure 1.

Imagine that the economy is initially at full employment (point ($g$, ī)). Then suppose that the coronavirus epidemic causes a persistent drop in productivity growth, from $g$ to $g'$. As illustrated by the left panel of Figure 1, the result is lower demand and the emergence of involuntary unemployment ($l$< ī). The lesson is that the coronavirus epidemic, through its negative impact on agents' expectations of future productivity growth, might induce a demand-driven recession[2].

*Besides its impact on public health, this coronavirus outbreak is likely to have significant economic consequences*

## Figure 1. Impact of coronavirus on aggregate demand




*Note: Employment on horizontal axis; productivity growth on vertical axis.*

**Figure 2. The supply-demand doom loop**

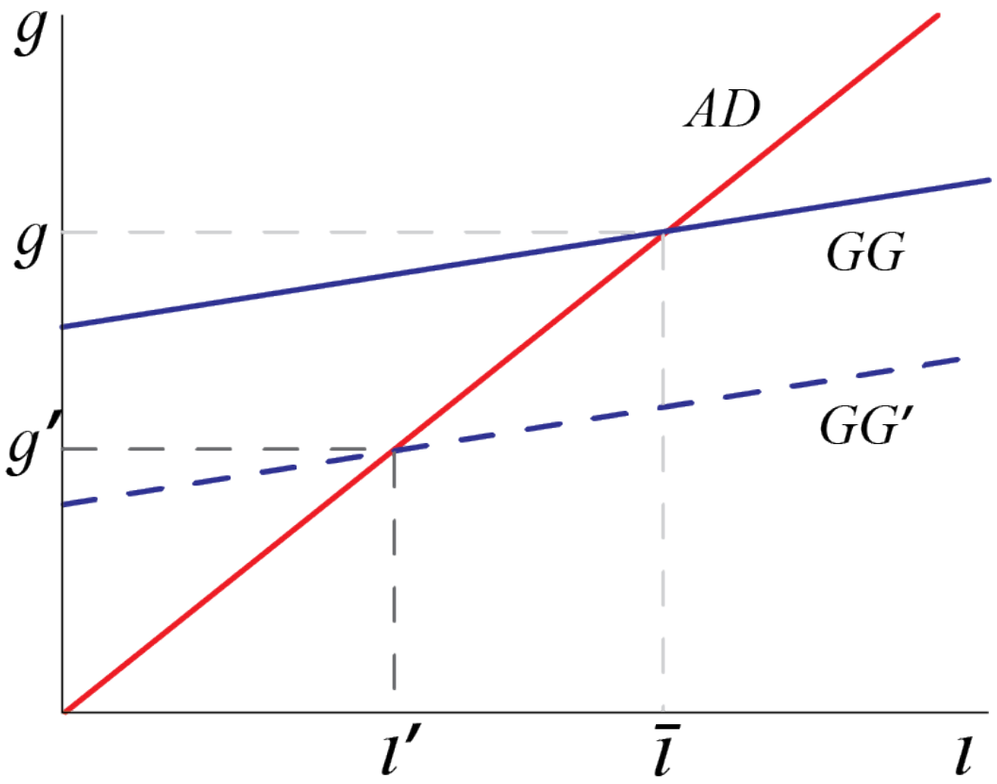
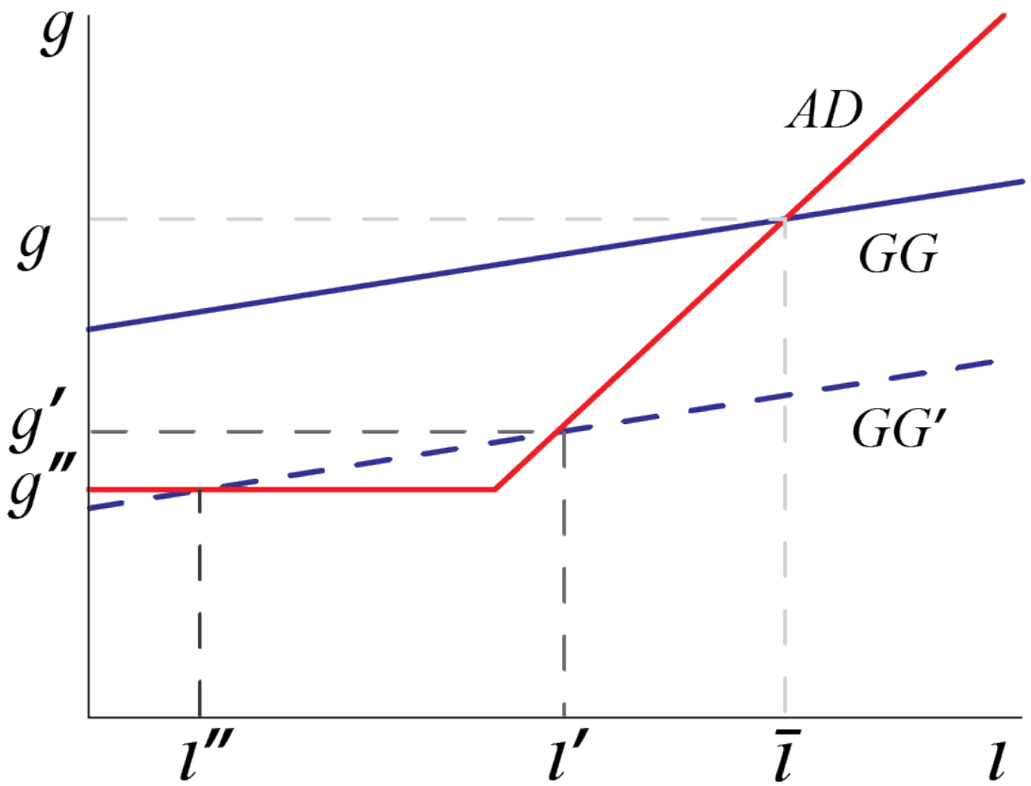



**Figure 3. Animal spirits and stagnation traps**



Now suppose that the central bank reacts by lowering the policy rate. This intervention sustains aggregate demand, by inducing agents to increase borrowing and spending. Graphically, this corresponds to a rightward shift of the $AD$ curve to $AD'$. If the monetary stimulus is strong enough, full employment is restored, as illustrated by the right panel of Figure 1.

The model thus lends support to the idea that central banks might need to respond to the COVID-19 outbreak by easing monetary policy[3]. Of course, this policy might conflict with the zero lower bound on interest rates. We will return to this point shortly.

## The supply-demand doom loop[4]

In reality, productivity growth is at least in part driven by firms' investment. In turn, investment decisions depend on aggregate demand – when demand is strong, the return from investment tends to be high; weak aggregate demand, conversely, depresses firms' incentives to invest.

This effect gives rise to a positive relationship between productivity growth and aggregate demand, captured by the *GG* curve in Figure 2. The equilibrium is now determined by the intersection of two upward-sloping curves. This signals the presence of amplification effects.

Let's again assume that the coronavirus spread generates a persistent negative supply shock, captured by a downward shift of the *GG* curve to *GG'*. What is interesting, is that now a supply-demand doom loop takes place. As before, the initial negative supply shock depresses aggregate demand.

But now, lower demand induces firms to cut back on their investment, which generates an endogenous drop in productivity growth. Lower productivity growth, in turn, causes a further cut in demand, which again lowers

productivity growth. This vicious spiral, or supply-demand doom loop, amplifies the impact of the initial supply shock on employment and productivity growth.

Now, monetary expansions have a multiplier effect on demand and employment. Suppose that the central bank eases monetary policy to increase aggregate demand. Higher demand, in turn, induces firms to increase investment. This sustains consumers' expectations of future income, leading to a further rise in demand, and so on. Monetary easing can thus reverse the supply-demand doom loop.

## Animal spirits and stagnation traps

Up to this point, we have abstracted from the zero lower bound constraint on monetary policy. Once the zero lower bound binds, the impact of shifts in demand on output and employment are magnified, because conventional monetary policy can no longer act as a shock absorber.

In fact, as shown in Figure 3, the $AD$ curve now exhibits a kink. The horizontal portion of the $AD$ curve captures cases in which monetary policy is constrained by the zero lower bound and the economy experiences a liquidity trap.

Once again, suppose that the coronavirus reduces productivity growth, making the GG curve shift down to *GG′*. There are now two intersections between the $AD$ and *GG′* curves, meaning that two equilibria are possible. The first equilibrium, corresponding to the point ($l'$, $g'$), has already been described. The second equilibrium, corresponding to the point ($l''$,$g''$), is new.

In this equilibrium the economy is stuck in a liquidity trap, and both growth and employment are depressed ($l'' < l'$ and $g'' < g'$). This second equilibrium can then be thought of as a stagnation trap (Benigno and Fornaro 2018).

Note that nothing fundamental determines which equilibrium materializes. Indeed, agents can coordinate their expectations on either of the two equilibria. This means that pessimistic animal spirits can push the economy into a stagnation trap.

To see how this can happen, imagine that agents become pessimistic about future productivity growth. Due to the zero lower bound, the central bank cannot counteract the associated drop in demand. As a result, employment and economic activity drop. Firms react by cutting investment, which negatively affects productivity growth. Initial pessimistic expectations of weak growth thus become self-fulfilling.

Importantly, this self-fulfilling feedback loop can take place only if the fundamentals of the economy are sufficiently weak (notice that the equilibrium is unique before the coronavirus epidemic causes a drop in *GG*). The coronavirus epidemic, therefore, can open the door to expectation-driven stagnation traps precisely by weakening the growth fundamentals of the economy.

Which policy interventions can prevent a stagnation trap from taking place? There is little that conventional monetary policy can do, since the policy rate is constrained by the zero lower bound. Luckily, fiscal policy – and in particular, policies that sustain investment – can be of help.

Imagine that the government reacts to the coronavirus outbreak by subsidising firms' investment, or by starting a public investment program. These policies make the *GG* curve shift upward, because they increase investment and productivity growth for given aggregate demand. If this shift is large enough, the stagnation trap equilibrium disappears.

In economic terms, this means that a sufficiently aggressive policy intervention to sustain investment can rule out stagnation traps. A timid intervention, however, will not do the job (think about a small upward shift of the *GG* curve).

In sum, our analysis suggests that the supply disruption caused by the coronavirus epidemic, if it turns out to be persistent, might cause a severe slump driven by weak aggregate demand.

In this case, drastic policy interventions – both monetary and fiscal – might be needed to prevent the negative supply shock triggered by the coronavirus spread from severely affecting employment and productivity.■

**Luca Fornaro is a Junior Researcher at CREI, Adjunct Professor at Universitat Pompeu Fabra (UPF), and Research Professor at the Barcelona GSE. Martin Wolf is an Assistant Professor at the University of Vienna**



*Endnotes*

*1. To be clear, we have no reasons to believe that this scenario is more plausible than other – more optimistic – ones. It might very well be, in fact, that the virus ends up causing a relatively mild and short-lived global recession, followed by a V-shaped recovery (Wren-Lewis 2020). Given the huge uncertainty surrounding the future evolution of the epidemic, however, we find worth exploring the macroeconomic implications of more pessimistic scenarios.*

*2. This is just an application of the analysis in Lorenzoni (2009), who shows that bad news about future productivity can generate recessions driven by lack of aggregate demand.*

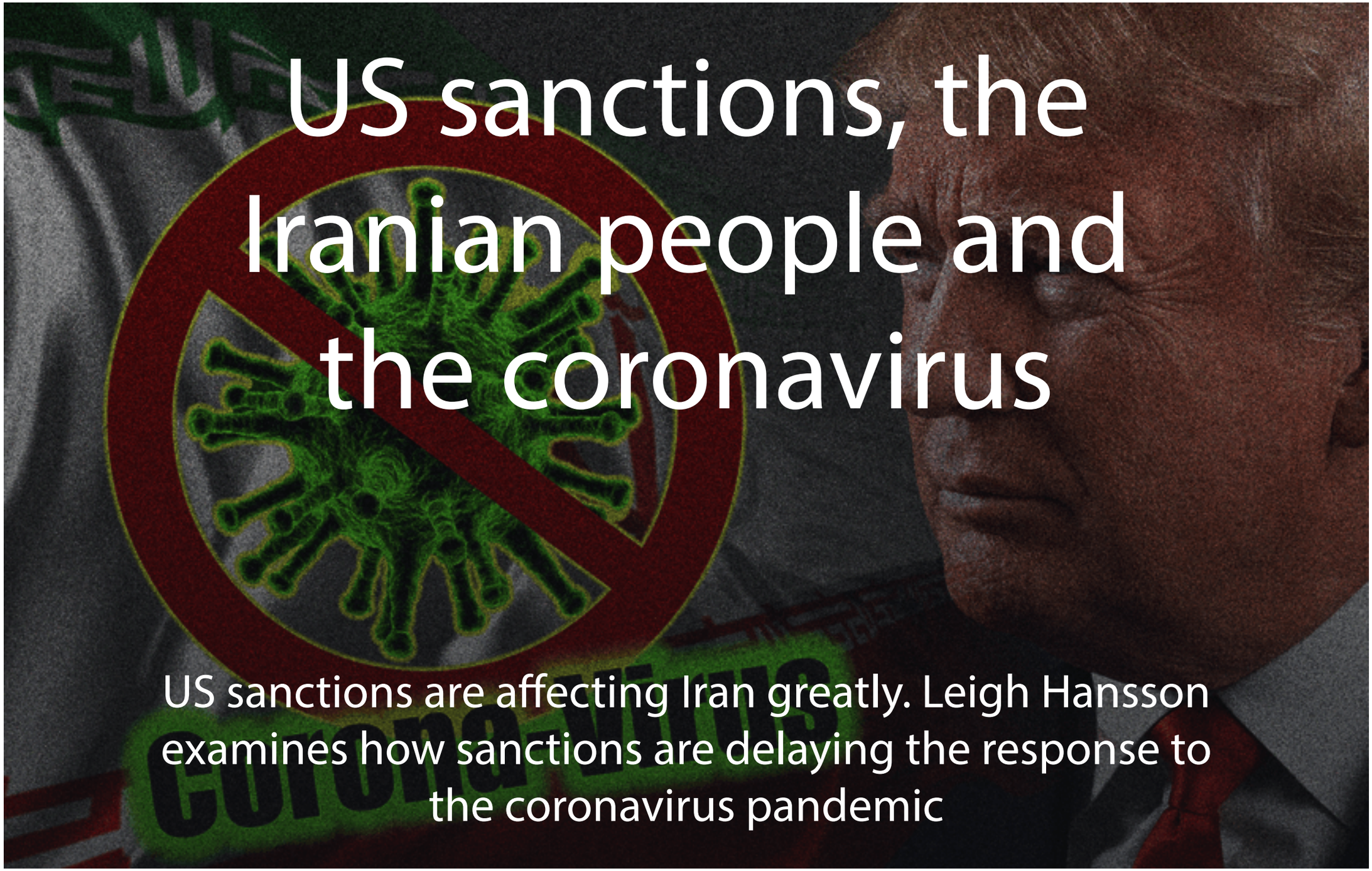
*3. Restoring full employment, however, is likely to come at the cost of overshooting the inflation target. This happens because lower productivity growth puts upward pressure on firms' marginal costs and inflation.*
*4. The analysis in this section, and the following one, draws heavily on the Keynesian growth literature, and in particular on Benigno and Fornaro (2018).*

*References*

*Benigno, G and L Fornaro (2018), "Stagnation traps," Review of Economic Studies 85(3): 1425-1470.*
*Fornaro, L and M Wolf (2020), "Covid-19 Coronavirus and Macroeconomic Policy: Some Analytical Notes", manuscript*
*Gali, J (2009), Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework, Princeton University Press.*
*Lorenzoni, G (2009), "A theory of demand shocks," American Economic Review 99(5): 2050-84.*
*OECD (2020), Economic Outlook, Interim Report March 2020.*
*Wren-Lewis, S (2020) "The economic effects of a pandemic".*

*This article was originally published on VoxEU.org*

# US sanctions, the Iranian people and the coronavirus




US sanctions are affecting Iran greatly. Leigh Hansson examines how sanctions are delaying the response to the coronavirus pandemic

Shaping sanctions to inflict maximum damage to Iran's regime and strategic sectors while minimizing humanitarian fallout has long presented a challenge for US policymakers. The spread of the coronavirus disease (COVID-19) to Iran has elevated the urgency of this challenge for the US and is forcing Washington to make difficult choices. This column explains US sanctions laws affecting Iran's import of medical supplies and considers potential developments to this area of trade in 2020.

## COVID-19-related medical imports delayed

Iran is one of the countries that has been hit hardest by COVID-19, with its relatively high percentage of cases per capita, deaths per case, and cases among the political elite[1]. Yet, the import of COVID-19 testing kits, critical at this stage of the pandemic, has been delayed due to uncertainty surrounding the requirements for receiving payments out of Iran.

This seemingly preventable international trade issue resulted from the nature of the US sanctions against Iran, the fear of the international banking community of making costly errors, and decisions by both countries with the regard to the use of the humanitarian exception to the sanctions.

## A comprehensive program based on deep-seated mutual animosity

The US first imposed sanctions against Iran in 1979, when Iranian students seized the American embassy in Tehran and took fifty-two American diplomats and citizens hostage. During that same chaotic year, an Islamic revolution also ejected from power the US-allied Shah of Iran and replaced his regime with a theocracy that turned the country into a leading member of the world's anti-American axis.

As the clerical regime became more entrenched and better able to disrupt American foreign policy, first in the Middle East but eventually as far as Latin America, the US has responded with a sanctions program that continues to increase in both comprehensiveness of scope and vigorousness of enforcement.

The Trump Administration dubbed its approach to Iran a *"maximum pressure"* strategy, and its main architect promised to *"squeeze* [the Iranians] *until the pips squeak."*[2] Sanctions now span industrial, financial, military and scientific restrictions in their attempt to curb Iran's sponsorship of terrorism, authoritarianism and pursuit of nuclear weapons.

*Where a path to providing humanitarian aid to the Iranian people exists, it is often not discernable to the banks and other companies on which the execution of humanitarian exports depends*

As applied to sectors of Iran's economy deemed strategically valuable, the sanctions have extended globally even to non-US persons in countries with little or no relation to the US-Iran conflict. Korean marine insurers, South African mining firms and German car part manufacturers must decide whether to sell their products to Iranian or American companies because transactions connected to these industries of Iran (among certain others) trigger US *"blocking sanctions."*

These sanctions can effectively exclude non-US persons from the entire US economic and financial systems by prohibiting US persons (ie. US citizens, permanent residents of the US, and companies registered in the US) from almost all transactions with such persons and freezing any assets they may have in the US.

Since Iran is one of four countries upon which the US has declared a complete trade embargo (along with Cuba, North Korea and Syria), sanctions are even more onerous when there is a US nexus. US persons are barred from virtually all dealings with Iran. Further, US sanctions liability arises from the use of US dollars in transactions that themselves would be not prohibited by the sanctions.

## The humanitarian exception and the CBI obstacle

The US sanctions program, while quite comprehensive, has for the past twenty years[3] allowed humanitarian aid to reach the Iranian people[4]. The US Department of the Treasury's Office of Foreign Assets Control (OFAC), the main regulatory body that governs US sanctions programs, implemented this exception by issuing general licenses[5] that allow US persons and non-US persons to export food, agricultural commodities, medicine and medical devices to Iran from the US or elsewhere, subject to certain requirements and exceptions[6].

The US permits a variety of forms of payment for goods exported to Iran pursuant to the humanitarian exception. These forms of payments include (i) payment of cash in advance, (ii) sales on an open account provided that the

creditor cannot transfer the account receivable, (iii) financing by a third-party (ie. non-US, non-Iranian) financial institution and (iv) letter of credit issued by an Iranian financial institution blocked under Iran-related sanctions if such letter of credit is confirmed by a US or third-party financial institution[7].

In practice, it is very difficult for a non-Iranian to receive money out of Iran without involvement of the Central Bank of Iran (CBI), due to CBI's possession of the foreign reserves in which exporters want to be paid[8]. The US imposed blocking sanctions on CBI in February 2012 due to its *"deceptive practices"* and *"deficiencies in Iran's anti-money laundering regime."*[9]

These sanctions triggered potential liability for non-US persons transacting with CBI, unless the transaction involved exports of humanitarian goods, and for US persons in all transactions with CBI, humanitarian goods not excepted.

A more recent imposition of sanctions on CBI, however, has also given rise to US sanctions liability for non-US persons for using CBI even in trades that would otherwise be authorized by the humanitarian exception. On September 20, 2019, OFAC announced that it would designate CBI pursuant to OFAC's main counterterrorism authority, Executive Order 13224, because *"Iran's Central Bank has provided billions of dollars to the Islamic Revolutionary Guards Corps (IRGC), its Qods Force (IRGC-QF) and its terrorist proxy, Hizballah."*[10]

This designation is different than the 2012 one because the regulation governing payment for goods traded under the humanitarian exception state that a person *"who is designated or otherwise subject to any sanctions under, the terrorism, proliferation of weapons of mass destruction, or narcotics trafficking programs"* cannot be involved in an authorized humanitarian trade[11].

Several months later, OFAC reversed course and issued a general license that permits use of the humanitarian exception despite involvement by CBI in the transaction[12].

Under these circumstances, it is hardly surprising that exporters of medical supplies and non-Iranian correspondent banks are uncertain as to the status of CBI and payment under the humanitarian exception. This confusion coupled with the Trump Administration's policy of maximum pressure on Iran through rigid enforcement of US sanctions laws has caused significant apprehension to taking part in Iran-related transactions, even when they appear to be authorized.

Obstacles to selling humanitarian goods to Iran at this time due to US sanctions are exacerbated[13] by a recent decision by the Financial Action Taskforce, a Paris-based global anti-money laundering watchdog, to add Iran back to its terrorism financing blacklist after three years of warnings[14].

## Special action due to the spread of COVID-19

In addition to keeping a humanitarian export channel open at all times (albeit, as discussed above, plagued by serious practical obstacles) the US has also historically allowed humanitarian donations when a natural disaster strikes Iran.

Following the Bam earthquake in Iran in December 2003, OFAC temporarily allowed US persons to make donations to nongovernmental organizations that aided affected Iranians. In August 2012, OFAC issued a similar authorization to temporarily allow US-based NGOs to transfer funds to Iran used for relief efforts in the aftermath of the East Azerbaijan earthquakes.

Similarly, in response to the spread of COVID-19 in Iran, the State Department has expressed its desire to assist the Iranian people in this challenging time,[15] and OFAC has released guidance stating that donations of humanitarian goods such as medical supplies are permitted, provided that such donations are not made to the government of Iran or any individual or entity that OFAC has specially designated or blocked under its sanctions authorities[16].

While CBI is not an obstacle in this scenario given the lack of payments, the role of another instrument of the Iranian government creates similar problems. Iran's Social Security Organisation (SSO) is managing the response to the COVID-19 outbreak, including the testing of potentially infected individuals and caring for those diagnosed. The parent agency of SSO is the government's Ministry of Welfare and Social Security.

A member of the Iranian government's organizational umbrella, this institution's central role in the management of the COVID-19 outbreak presents an obstacle to making authorized donations similar to the one presented by the central role of CBI in Iran's foreign exchanges.



## An alternative arrangement

Two weeks ago, the US and Switzerland finalized the terms of an alternative arrangement for facilitating humanitarian trade with Iran. The Swiss Humanitarian Trade Arrangement (SHTA), which was first announced around the time that CBI was designated for terror finance and then tested in trial over the early months of this year,[17] is designed to bypass CBI and *"help ensure that humanitarian goods continue to reach the Iranian people without diversion by the regime,"* according to Treasury Secretary Mnuchin[18].

While limited to Swiss companies, the new arrangement reduces barriers to humanitarian exports because of the assurances provided by the US Treasury Department that transactions compliant under the SHTA will not give

rise to US sanctions liability. Compliance under the SHTA will require Swiss banks and Swiss exporters to conduct enhanced due diligence on Iranian counterparts in line with the standards promulgated by FATF.

The Swiss companies will need to provide detailed information about the transaction, their business activities, and their Iranian counterparts to Switzerland's State Secretariat for Economic Affairs (SECO). SECO will share such information with the US Treasury Department.

## Looking ahead

The US sanctions program against Iran, now over forty years old, is as robust in scale and rigid in application as ever before. The maximum pressure strategy by the US, combined with the heavy use by Iran's economy and society of institutions connected to the government of Iran, which enable Tehran's support for terrorism and other malign activities, has created very little room for the humanitarian channel to operate.

The SHTA, while only available to Swiss companies, creates some expanded opportunities for engaging in lawful humanitarian trade with Iran. Since the SHTA just recently launched after months of planning, it is unlikely that the arrangement will be expanded or duplicated this year.

Where a path to providing humanitarian aid to the Iranian people exists, it is often not discernable to the banks and other companies on which the execution of humanitarian exports depends. Moreover, compliance professionals of such companies might determine that, given confusion as to the lawfulness of such transactions (as seen by the changing status of CBI) and steep costs of being sanctioned, the benefit of making or facilitating such exports is not worth the risk they present.

Building a strong compliance department or hiring outside counsel with expertise in sanctions is invaluable for companies seeking to operate in this space. ■

**Leigh Hansson is a partner in Reed Smith LLP's Global Regulatory Enforcement group based in London and Washington, DC**

*Author's note: the contents of this communication are for informational purposes only and do not constitute legal advice.*

*Endnotes*

*1. Graeme Wood, "Iran Has Far More Coronavirus Cases Than It Is Letting On," The Atlantic (Mar. 3, 2020), available at https://www.theatlantic.com/ideas/archive/2020/03/irans-coronavirus-problem-lot-worse-it-seems/607663/*

*2. "U.S. to step up sanctions on Iran, 'squeeze them until the pips squeak,'" Reuters (Nov. 13, 2018), available at https://www.reuters.com/article/us-asean-summit-bolton/u-s-to-step-up-sanctions-on-iran-squeeze-them-until-the-pips-squeak-idUSKCN1NI0KZ*

*3. The US Congress passed the Trade Sanctions Reform and Export Enhancements Act of 2000 (TSRA) in the wake of the oil-for-food scandal in Iraq. TSRA prohibits the use of sanctions to target humanitarian goods unless there are entities involved in the trade of such goods that are subject to counterterrorism efforts.*

*4. Some other categories of interactions with Iranians, such as academic exchanges and certain publishing activities, are also permitted exceptions.*

*5. General licenses can be relied upon without application to OFAC. Transactions not authorized by a general license might be authorized by a specific license from OFAC, which can be applied for by completing an online form.*

*6. See, eg. "Clarifying Guidance, Humanitarian Assistance and Related Exports to the Iranian People", Department of the Treasury (Feb. 6, 2013), available at https://www.treasury.gov/resource-center/sanctions/Programs/Documents/hum_exp_iran.pdf; "Guidance on the Sale of Food, Agricultural Commodities, Medicine, and Medical Devices by Non-U.S. Persons to Iran," Department of the Treasury (July 25, 2013), available at https://www.treasury.gov/resource-center/sanctions/Programs/Documents/iran_guidance_med.pdf*

*7. 31 CFR § 560.532 - Payment for and financing of exports and reexports of agricultural commodities, medicine, and medical devices, and certain related software and services.*

*8. See generally, Tyler Cullis and Amir Handjani, "The Anatomy of Humanitarian Trade With Iran," Lawfare (May 14, 2019), available at https://www.lawfareblog.com/anatomy-humanitarian-trade-iran*

*9. Executive Order 13599 (Blocking Property of the Government of Iran and Iranian Financial Institutions).*

*10. "Treasury Sanctions Iran's Central Bank and National Development Fund", OFAC Press Releases (Sep. 20, 2019), available at https://home.treasury.gov/news/press-releases/sm780*

*11. 31 CFR § 560.530(d)(5).*

*12. OFAC General License No. 8 (Authorizing Certain Humanitarian Trade Transactions Involving the Central Bank of Iran).*

*13. "Iran's Import of COVID-19 Test Kits Hampered by US Sanctions, FATF Blacklisting," Iran Front Page (Feb. 24, 2020), available at https://ifpnews.com/irans-import-of-covid-19-test-kits-hampered-by-us-sanctions-fatf-blacklisting*

*14. John Irish, Leigh Thomas, "Global watchdog places Iran on terrorism financing blacklist," Reuters (Feb. 21, 2020), available at https://www.reuters.com/article/us-iran-fatf/global-watchdog-places-iran-on-terrorism-financing-blacklist-idUSKBN20F1Z6*

*15. Michael R Pompeo, "United States Offers Assistance to the Iranian People," US Department of State Press Releases (Feb. 28, 2020), available at https://www.state.gov/united-states-offers-assistance-to-the-iranian-people/*

*16. OFAC FAQ 828.*

*17. During the trial operations, pharmaceutical giant Novartis supplied Iran with cancer medicine and medicines needed for organ transplants. "Swiss humanitarian channel with Iran open for business," Swiss Info (Feb. 27, 2020), available at*

*https://www.swissinfo.ch/eng/trade-agreement_swiss-humanitarian-channel-with-iran-open-for-business/45584196*
*18. "United States and Switzerland Finalize the Swiss Humanitarian Trade Arrangement," OFAC Press Releases (Feb. 27, 2020), available at https://home.treasury.gov/news/press-releases/sm919*