WORLD COMMERCE REVIEW

EU ePub
Spring 2020

European autonomy will reshape the business environmant, Christine Lagarde writes

Antti Tulonen considers the next steps in connecting Europe and Asia

Vitor Gaspar on the debate about fiscal rules architecture in the eurozone

THE GLOBAL TRADE AND FINANCE PLATFORM

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

CONTENTS

CONTENTS

CONTENTS

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 ambitions reshaping the business environment

Christine Lagarde describes how the goals of European autonomy and addressing climate risk will shape the business environment in Europe, reiterating the need to work together

The environment facing European business today is characterised by both uncertainty in the short term and a changing landscape in the longer term. The short-term uncertainties are mainly related to global risks – trade, geopolitical and now the outbreak of the coronavirus and its potential effect on global growth.

Over the last two years, the euro area economy has been quite resilient to global shocks, with our accommodative monetary policy supporting employment and consumption. And, though GDP growth in the last quarter was weak, it was broadly in line with our expectations.

But while the threat of a trade war between the United States and China appears to have receded, the coronavirus adds a new layer of uncertainty. So we're continuing to monitor closely how these risks develop and how they feed into our central scenario for the economy.

In the face of these uncertainties, the ECB's forward guidance on interest rates and asset purchases acts as an effective automatic stabiliser. The longer-term picture is different. Ambitious proposals are gathering momentum within Europe today and look set to profoundly reshape the environment for business.

In particular, two big ambitions are pervading many aspects of policymaking in ways that create change, but also opportunity:

- the goal to build real *"European autonomy"*;
- and the aim to urgently fight the consequences of climate change.

I know that, as business leaders, you naturally seek the new opportunities that emerge for your companies in such times. So I'd like to talk about how I see these ambitions evolving, and where they intersect with the tasks and priorities of the ECB.

European autonomy

We all have a sense of the world around us moving more quickly. The post-war global order is fracturing, tensions between great powers are rising and technological change is transforming the way we produce, distribute and consume.

We are all stakeholders in the future of Europe, and in the future of our planet. The task ahead of us is clear – and there's no time to lose

This environment clearly exposes Europe to new types of risk, as demonstrated today, for example, by the turn towards protectionist policies and the increasing use of sanctions. So it's no surprise that the ambition of building 'European autonomy' is gaining traction and has been gathering momentum in various policy areas.

Where this overlaps most with the ECB is the international role of the euro. Issuing an international currency confers obligations, but it also creates opportunities. It lowers external financing costs – the so-called 'exorbitant privilege'. It helps shield domestic prices against volatile exchange rates.

It strengthens monetary policy autonomy. And it can help reduce vulnerabilities, such as the potential to be denied access to the financial and payment systems of others[1]. Of course, autonomy should be seen not as an alternative but as a robust complement to global cooperation, which is of utmost importance.

But in Europe's case, while the international use of the euro has stabilised in recent years, it still lags some way behind the dollar, even for European trade. Around half of the euro area's international trade is invoiced in euro. Most of the oil we buy is denominated in foreign currency.

So, European policymakers are showing renewed interest in strengthening the euro's global role – and this coincides with the ECB's tasks. We know from history that deep and liquid financial markets are one of the most important factors to enable a currency to attain international status.

In fact, research shows that capital market depth was by far the most important driver helping the US dollar to overtake the pound sterling in the interwar period[2]. Capital markets in Europe, however, remain heavily segmented and financial integration has actually gone into reverse. Today it is only around half its pre-crisis peak[3].

So, if we truly want to boost the euro's international role, it's essential that governments and regulators are committed to building a genuine capital markets union. And here the ECB can contribute, in particular by providing safe and innovative market infrastructures under European jurisdiction, and by acting as an accelerator in payments solutions.

Already Europe has gone a long way in this direction. In 2018, for example, we launched TARGET Instant Payment Settlement (TIPS) – a Europe-wide instant payments service. But these achievements are not sufficient for us to consider our payments landscape autonomous – especially in the retail space where payments are becoming more digital and non-European solutions dominate.

At the end of 2016, for example, more than two-thirds of credit card transactions in Europe were made using international cards[4]. This underlines the need to fully implement the recently re-launched pan-European retail payments strategy.

The challenge for us now, in other words, is to remain at the forefront of innovation, both to respond to changing consumer demand and to strengthen Europe's place in the world. And this will include exploring, with other central banks, the risks and opportunities of issuing central bank digital currencies and the conceptual options available.

Another aspect that's crucial for the effectiveness of our market infrastructures is resilience against the new risks in today's world – namely cyber threats. Industry estimates for 2018 already put the global cost of cyber attacks at between USD 45 billion and USD 654 billion[5]. And, as an operator of critical infrastructures, the ECB obviously takes such threats very seriously.

But cyber risk is becoming important for financial stability, too. As forthcoming analysis from the European Systemic Risk Board shows, there are plausible channels through which a cyber attack could morph into a serious financial crisis[6].

An operational outage that, say, destroys or encrypts the balance accounts of a major financial institution could trigger a liquidity crisis, and history shows that liquidity crises can quickly become systemic crises. So the ECB is well aware that it has a duty to be prepared and to act pre-emptively.

For example, our banking supervision already requires all significant institutions to report cyber incidents immediately, so that we can react quickly in the event of a major incident. This is an area, again, where we intend to stay at the forefront of developments – both to fulfil our own mandate and to discharge our wider responsibility to Europe.

Climate change

The second big ambition reshaping the landscape for business is the mission to fight the consequences of climate change. We are entering an era where climate risk will play a much more central role in public policies, be it via regulation, taxation or the focus of public spending.

We are already seeing this in the plans for a European Green Deal, and several national governments have recently adopted large green investment packages. In keeping with this, climate change will be a key part of our ongoing strategy review. Though we're still in the early phases of this process, I see two broad areas where we can move forward.

The first is filling the knowledge gap. We need to extend our knowledge about the macroeconomic effects of climate change, in particular in key areas like inflation, productivity and trade. A recent study found that, out of approximately 77,000 articles published in top economics journals, less than 60 have been on climate change[7].

So the ECB will also strive to deepen its analysis and its modelling in this field. What we do know so far suggests that climate change will affect monetary policy. For instance, research on natural disasters suggests that climatic events could make inflation more volatile, especially in the short run[8]. And over time, mitigation strategies such as carbon taxes could have significant and persistent effects on relative prices.

In other words, bringing climate change more fundamentally into our analysis and strategy is not 'mission creep': climate change is also a price stability risk.

The second area where we can already make progress is on properly reflecting climate risks. There's a growing awareness today that banks and financial institutions are exposed to material climate risks. These include physical risks from natural disasters and climate change, and they include risks from a disorderly climate transition.

These risks are not distinct, because rising physical risks make a disorderly transition more likely – a combination Mark Carney has termed *"the tragedy of the horizon."*[9] So it's crucial that both the public and the private sector take these risks into account more systematically, for instance by setting higher standards for climate risk disclosure.

We're already seeing progress in the private sector, especially among large investors, and France is leading the way at the country level[10]. The Commission's Green Deal agenda sees European standards on disclosure being tabled in the course of 2020.

At the ECB, we will also do our part – and we are already starting to promote climate risk disclosure across our range of tasks. For example, we're examining the disclosure standards we will need in order to incorporate climate issues into the risk assessment of our collateral framework.

ECB staff have also started working on a comprehensive climate risk stress-testing framework, which is due to be ready by the end of the year. And our banking supervisors are assessing banks' climate risk disclosures and examining how those risks should be embedded in the supervisory process.

This is an area where Europe has an opportunity to lead the world, both as a global standard setter and as a centre of green finance. And this could support other policy goals.

The EU is already the largest international market for green bonds: European entities account for around 50% of global issuance and around 44% of the global market is in euro. As green finance grows, it could provide another avenue through which to bolster the capital markets union and cement the euro's international role.

Conclusion

The world is changing in ways that are challenging the certainties of the past. It's a shifting environment for business and for policy. But it's one that we can master. The attitude we must strive for is one of cooperation without compromise – being open to the world, but assertive in defending our values and our interests.

That means forging ahead in fields that are vital to us, like environmental sustainability. It means taking steps to reduce our common vulnerabilities and increase our autonomy. And it means working together – as policymakers, businesses and Europeans.

If we are to strengthen the global standing of our currency, we need our banks and our regulators to act in a European way. If we are to fight climate change, we need our large firms to be pioneers and leaders on disclosure and green investment.

This is an ambitious agenda – but it's also, in truth, a self-evident one. We are all stakeholders in the future of Europe, and in the future of our planet. The task ahead of us is clear – and there's no time to lose. ■

Christine Lagarde is the President of the European Central Bank

Endnotes

1. See Gräb, J and Mehl, A (2019), "The benefits and costs of the international role of the euro at 20", The international role of the euro, ECB, June 2019.

2. Eichengreen, B, Mehl, A and Chiţu, L (2017), How Global Currencies Work: Past, Present and Future, Princeton University Press.

3. On the basis of the ECB's quantity-based indicator of financial integration.

4. ECB (2019), Card payments in Europe – current landscape and future prospects: a Eurosystem perspective, April.

5. European Systemic Risk Board (2020), Systemic Cyber Risk, forthcoming.

6. European Systemic Risk Board, op. cit.

7. Oswald, A and Stern, N. (2019), "Why are economists letting down the world on climate change?", VoxEu contribution, 17 September 2019.

8. Parker, M (2018), "The impact of disasters on inflation", Economics of Disasters and Climate Change, 2(1), pp. 21-48.

9. See Carney, M (2015), "Breaking the tragedy of the horizon – climate change and financial stability", speech given at

Lloyd's of London, 29 September.
10. Art. 173-VI of the Law on Energy Transition for Green Growth.

This article is based on a speech delivered after receiving the Grand Prix de l'Économie 2019 from Les Echos, Paris, 5 February 2020

The future of fiscal rules in the euro area

Creating a central fiscal capacity is one of the three critical unfinished jobs to complete the euro area architecture, Vitor Gaspar argues

The IMF has been engaged with members countries on the introduction or improvement of fiscal rules. We have also been looking at cross-country experiences with fiscal rules. It goes without saying that we have been participating in the debate on fiscal rules as well as the broader subject of euro area architecture.

Our views are public. For example, in his September 2018 speech, Poul Thomsen, the director of the European Department, has used a powerful image. He argued that the euro area should have full public and private risk-sharing mechanisms. But, in parallel, risk sharing must be accompanied by risk reduction. Many countries will not support risk sharing in the absence of risk reduction.

More generally, IMF staff has identified three crucial elements (see also Berger, Dell'Ariccia, and Obstfeld, 2018):

- Completion of the banking union. Some important progress has been made, including the creation of a single supervisor and a single resolution mechanism. But the banking union also requires a European Deposit Insurance Scheme.

- Integrated single European capital market. This is crucial for making the financial system in Europe more resilient. To fully unlock the potential of capital markets there is need to increase information transparency, move to more efficient insolvency regimes and to simplified and harmonized withholding tax rules.

- Central fiscal capacity. A central fiscal capacity at the euro area level would strengthen the ability to deploy fiscal policy, complementing monetary policy, in case of significant euro area-wide downside dynamics. It would also help countries stabilize their economies in downturns.

Progress on these reforms is essential but has been too slow. And there is no political agreement on the way forward.

European integration and the euro reflect political priorities. The completion of the euro area reform agenda depends on the European politics. The solution will likely go well beyond economics and finance.

My piece is organized as follows:

- First, I will focus on the original rationale for having fiscal rules.

- Second, I will discuss some important lessons we have learned over the last thirty years and identify some open issues.

The euro area architecture requires the completion of banking union, capital markets union and a central fiscal capacity

- Third, I will present some policy options.

- In the last section, I will conclude.

Also to note: I will focus on supranational fiscal rules and on the euro area. I may slip and occasionally use Europe or European Union in a loose way.

Why fiscal rules in the euro area?

In general, fiscal rules are necessary to offset biases in fiscal policy conducted according to day-to-day politics. The most relevant are deficit and debt biases. In most advanced economies, public debt ratios have been on an increasing path one business cycle to the next. Such half-century increases in public debt are unprecedented in peace time.

In the late 1980s, countries were starting to change their macroeconomic policy frameworks in fundamental ways. New Zealand provides an early and pioneering example. It passed its Public Finance Act and its Reserve Bank Act in 1989. That was the year when the *Delors Report* was adopted.

Reforms in New Zealand and other countries reflected a fair amount of consensus on the superiority of a stability-oriented macroeconomic policy framework. In such framework, an independent monetary policy would be responsible for delivering price stability. Sometimes employment or economic activity were on par with price stability. But, in any case, by maintaining price stability, over the medium term, monetary policy would keep output close to potential.

Monetary policy would achieve such goals by systematically deciding on policy interest rates. In this it followed an old insight from Wicksell. In such a context, fiscal policy contributed to stability mainly through automatic stabilizers and by preserving sound public finances. Only in extreme cases of a severe and prolonged recession did expansionary discretionary fiscal policy offer any promise.

What about the euro area? In my view, at the time, the case for fiscal rules was stronger. With monetary unification, the elimination of exchange risk, would make sovereign bonds, from participating countries, into closer substitutes. If one considers the limiting case of perfect substitutability, the public bond market of the euro area would become a common pool (Detken, Gaspar and Winkler, 2004).

The consequences from fiscal profligacy would be muted in the large European market. At the same time, there would be negative international spillovers associated with bond market turbulence and financial instability. Lamfalussy (in the *Delors Report*) argued that market discipline alone would not suffice. Rules were necessary for stability.

Risks were associated with high levels of debt and deficits and hence the rules would have the form of upper limits. That was the vision that shaped the Maastricht Treaty. The latter also encompassed such important rules as 'no bail-out' of sovereigns and the prohibition of monetary financing.

Let me recall that I personally started my involvement in European economic and monetary issues when the *Delors Report* had just come out in 1989. I remember very lively discussion on whether the *Delors Report* would be 'a' basis for the forthcoming negotiations or 'the' basis. 'A' won. I was then involved in the Maastricht negotiations representing my country, Portugal. Later, I became chairman of the alternates of the Monetary Committee.

In that context, we helped prepare many important pieces of legislation, including the first version of the Stability and Growth Pact. In 1989, I joined the European Central Bank (ECB) SDG research. I was involved in the setting up of the ECB's monetary policy strategy (see, Issing and others, 2001) and in the first review of the strategy, in 2003.

In 2009, at the time of the tenth anniversary of the euro I was at the European Commission leading its Bureau of European Policy Advisers. I edited the book, *The Euro: The First Decade* in collaboration with Servaas de Roose, Marco Buti and Joao Nogueira Martins (2010). Now that I have established beyond reasonable doubt that I am old let me move on.

Over time, the fiscal rules in Europe have become more complex and opaque. The evolution process followed a long and winding road. Changes to the original setup of the fiscal framework were frequent and substantial. Blanchard, Leandro and Zettelmeyer (2019) compared the evolution of fiscal rules with the Cathedral of Seville. But I believe the complexity of the evolution of fiscal rules is even better captured by the evolution of another building also in Andaluzia, Spain: Mosque-Cathedral of Cordoba.

It is a building that integrates successive layers of building spanning a full millennium. In the area of fiscal rules more layers were built in a period thirty times shorter. It is opportune to recognize that in the remarks that follow I benefited from careful reading of the contribution by Blanchard, Leandro and Zettelmeyer (2019). My debt goes well beyond Medieval Andalusian architecture[1].

It is, I believe, opportune to revisit the analysis on fiscal policy included in the *Delors Report*. The main contribution was a paper, submitted by Alexander Lamfalussy (and produced in collaboration with his team at the Bank for International Settlements (BIS)). The title: *Macro-coordination of fiscal policies in an economic and monetary union in Europe* (1989).

It made two fundamental points: first, given the insignificant size of the EU budget, the task of defining a Union-wide fiscal policy stance had to rely on the *coordination* of national budgetary policies. Second, fiscal discipline is necessary. Financial markets can exert some disciplinary influence.

But they are not sufficient: *"The constraints imposed by market forces might either be too slow and weak or too sudden and disruptive."* The conclusion was that sharing a single financial market and a single currency implied the need to accept constraints on the conduct of fiscal policies.

For the purpose of my piece it is interesting that both elements of Lamfalussy's analysis proved problematic in actual practice. We have a perfect illustration of the too slow and weak market discipline in the period from 1999 to 2007. And quite sudden and disruptive in the period of the sovereign debt crises in the euro area. The rules did not prevent the market turmoil that they were designed to avoid.

Despite the governance reforms implemented over 2005–13, such as increased flexibility, greater automaticity in enforcement, and greater ownership supported by revisions in national legislation, compliance track record with fiscal rules has been very poor.

Here we follow Eyraud *et al*, 2017. The idea is simply to compare fiscal results with four simple numerical references (disregarding the complications, qualifications and judgement allowed by the fiscal framework).

Under these simplifying conditions: the MTO was violated in 80 percent of observations under consideration, with almost two-thirds of countries exceeding the MTOs in every single year. Compliance worsened during the crisis: in 2009, the MTO rule was violated by 90 percent of countries, the debt ceiling by 50 percent of countries, the deficit ceiling by 85 percent of countries, and the required fiscal effort by 75 percent of countries.

In parallel, the share of countries with a debt ratio greater than 60 percent increased from 35 percent in 1999 to 75 percent in 2015. There are a number of important caveats and qualifications to this summary that are spelled out in Eyraud, Gaspar and Poghosyan (2017).

Our analysis of the compliance with 3 percent deficit rule over the three-year planning horizon suggests that the main driver of poor ex post compliance was weak execution of plans. Given that the EC has not applied any fines or sanctions, this is also a sign of weak enforcement.

Although the noncompliers consistently planned to reduce their deficits below the 3 percent threshold set out by the rules in each of the projected years, execution slippages more than offset these plans, leading to a median upward deviation from the ceiling of up to 2 percent of GDP at the end of the third year[2].

I summarize Edward Prescott's intuition about commitment through rules as: first, societies must find good – but often time-inconsistent – policy rules; second, societies have to find a way to stick to these rules. The evidence presented on the frequent revision of the rules and poor compliance suggests that we are far off Prescott's standard.

European fiscal rules did have effects. They may not have worked as intended but – still – they did affect policymaking. That is clear in the process leading to the start of the euro area. But here I want to quote an interesting result documented by Caselli and Wingender (2018).

They show the 3 percent deficit rule ceiling did not act as an upper bound but more as a target or a 'magnet'. The number of observations around the threshold increased, reducing the occurrence of both large government deficits and surpluses.

One of important features of the fiscal rules is to make sure that countries accumulate sufficient buffers in good times so as to be able provide support to the aggregate demand in bad times – through automatic stabilizers or even discretionary expansionary policy.

In other words, fiscal rules should be designed to favour counter-cyclical fiscal policies. Nevertheless, despite various amendments to strengthen the counter-cyclical features of the rules, the outcomes have been mainly pro-cyclical.

At the individual country level fiscal policy was procyclical in most countries most of the time. Using the Industrial Production Index to compare the Great Depression and the Global Financial Crisis follows an original contribution from Barry Eichengreen and Kevin O'Rourke to VoxEU. The original idea was to show that the turning point happened much earlier in the Global Financial Crisis (likely due to effective policy action).

The idea then was to prolong the comparison to show that the recovery may have come earlier but has not been strong (a point made in Barry Eichengreen's *Hall of Mirrors*). It is remarkable that industrial production in the euro area is yet to recover to pre-crisis levels.

That remind us of the words of Alvin Hansen, in his Presidential Address, delivered to the American Economic Association, in December 1938: *"This is the essence of secular stagnation – sick recoveries which die in their infancy and depressions that feed on themselves."* In a secular stagnation there is excess of savings over investment.

In addition, economic performance within the euro area was very uneven. Persistent divergences have occurred. This is best illustrated by contrasting real per capita GDP growth in Germany and Italy. Over the last twenty years

Germany experienced a very strong real per capita GDP growth, above the average for the euro area and at the level that of the United States. In contrast, real per capita GDP in Italy is almost at the same level as twenty years ago.

Importantly, the growth performance was similar in the first years of the euro area. But afterwards, following the implementation of structural including the labour reforms, Germany was well prepared to weather the global financial crisis (eg. Krebs and Scheffel, 2013). In contrast, in Italy structural impediments to growth contributed much to the disappointing economic performance. That became very visible since the onset of the global financial crisis.

Germany is the issuer of the reference safe assets in the euro area.

Surprisingly, over the last twenty years, the average structural primary surplus in Italy was 1½ percent of potential GDP, against 0.9 percent for Germany. Nonetheless, Italy is characterized by high and rising public debt. In contrast, in Germany debt is quickly declining.

Between 2010 and 2019, Italy's gross debt-go-GDP ratio increased by about 18 percentage points. During the same period, debt in Germany declined by 24 percentage points of GDP. Low growth and high cost of debt are primary reason why Italy has not managed to escape from vicious circle of high public debt.

Italy is also quite sensitive to changes in market sentiment as evidenced by significant swings in sovereign bond yields. Interest rate-growth differential, on the other hand, is very favorable in Germany thanks to record-low and negative interest rates.

Using an extended accounting approach that fully recognizes the importance of economic growth (which keeps track of the impact of growth on primary fiscal surpluses) Mauro and Zilinsky show that differences in growth rates are key in determining changes in the debt-to-GDP ratios (Mauro and Zelinsky, 2016).

Going forward, long-run competitiveness and prosperity in the euro area requires deep transformation towards green and digital economy and society. This requires higher public investment, more extensive synergies with private investment and, more generally, smart and agile public policies that facilitate change and transformation.

For example, the outline of a EU's Green Deal, presented by the Commission on December 11, 2019 provides a list of 50 initiatives designed to achieve carbon neutrality by 2050 in a sustainable growth framework. It is clear that the transition toward carbon neutrality requires substantial investments.

The IMF database on public sector balance sheets shows that the general government net worth has, on average, worsened in euro area countries, since 2000. The median general government net worth moved – roughly - from positive 20 percent of GDP, in 2000, to negative 20 percent of GDP, in 2016.

European countries have relatively low level of public sector net worth. Targeting public sector net worth is used in New Zealand. The similar approach has recently been proposed by some authors as part of new fiscal frameworks (see for example, Hughes and others, 2019).

The recent improvements in fiscal reporting to hold governments to account for the value of assets created by public investments provides an opportunity to go beyond the traditional debt and deficits. Policymakers need to understand the extent of the public sector fiscal exposure through state-owned enterprises, public-private partnerships, pensions and guarantees (IMF, 2020; Detter and Fölster, 2015)[3].

Aging societies change the political equilibrium by tilting spending preferences in favor of the elderly. This makes reforming programs such as pensions, even more difficult. Such reforms are necessary because pressures stemming from age-related spending will increase in the decades to come.

The Public Sector Balance Sheet (PSBS) approach offers a framework to discuss the implications from macroeconomic changes. For example, low interest rates make the situation even more challenging. The present value of future cash-flow commitments increases. Pre-funding pension obligations becomes more expensive. This was emphasized by Alan Auerbach (2019), at the fourth ECB biennial conference on fiscal policy and EMU governance. His presentation was on the future of fiscal policy. Any prudent fiscal framework has to account for the future burden associated with policy commitments (mostly pensions and health).

Something that would have surprised me in 1989 would be to be told that negative interest rates on bonds would be common in thirty years' time.

In the early 1970s, with the US exiting from Gold Standard in 1971 and the onset of the fiat money regime, inflation increased in most countries. The period became known as the Great Inflation. That was followed by an active, successful disinflation – with Paul Volcker as Fed Chairman - from 1979. Eventually, inflation entered an enduring declining path globally.

As a result, nominal interest rates have fallen significantly. Even if we take a very long-term historical perspective, nominal interest rates have never been this negative before. This is true for all major advanced economies, including the euro area countries.

The prevalence and the persistence of low rates has encouraged some scholars to start questioning the conventional wisdom about the costs of deficits and debts. For example, in his American Economist Association presidential lecture Olivier Blanchard (Blanchard 2019) argued that with interest rates so low including relative to growth rates, *"the issuance of debt without a later increase in taxes, may well be feasible."* The purpose of the lecture, according to Blanchard, was to allow for a richer discussion of debt policy and appropriate debt rules.

In doing so we are following John Hicks. In a little known paper, *The Classics Again*, he explains that under Wicksell's policy interest rule approach the LM curve is horizontal in the (Y,i) space. He, then, goes on to argue that Keynesian and Classic Economics diverge when the LM curve is horizontal, not by policy choice, but because circumstances are so that policy is constrained. As this happens, we move from Wicksell to Keynes.

As of today, the relevance of the effective lower bound on monetary policy and very low and persistent interest rates are a fundamental characteristic of the landscape that was not anticipated in 1989 (not even in 2009).

The implications for the conduct of fiscal policy associated with the prospect of low interest rates for long has been, in recent months, explored by Olivier Blanchard (Blanchard, 2019a and 2019b; Blanchard and Pisani-Ferry, 2019; Blanchard and Summers, 2019; Blanchard and Tashiro, 2019; Blanchard, Leandro, Merler and Zettelmeyer, 2018).

In contrast, it is important to note that we are not seeing anything unusual regarding the interest rate-growth differential. If we take a long-term historical perspective interest rate-growth differential was negative for most advanced economies, for most time. The current period does not stand out. That is why in my keynote I emphasize the constraints on monetary policy rather than on interest rate-growth differential.

Given these macroeconomic circumstances, what is the role of monetary policy? The conventional view originates with Knut Wicksell. He showed how—by controlling policy interest rates—central banks would be able to deliver overall price stability.

It is interesting to note that Wickell emphasized that his version of the interest rate rule made Central Banks' knowledge of the natural rate of interest unnecessary. Observed price changes provided sufficient information for policy action.

Interest rate rules—as a means to deliver price stability—were formally considered in the context of New Keynesian and New Neoclassical Synthesis Models (Clarida, Gali and Gertler, 1999; Goodfriend and King, 2001; Woodford, 2005).

If policy rates are constrained or under the shadow of the effective lower bound, the ability of monetary policy to deliver price and business cycle stability is limited. The role of fiscal policy is, therefore, reinforced. From the viewpoint of business cycle stability that is best done through enhanced automatic stabilizers.

Creating a central fiscal capacity is one of the three critical unfinished jobs to complete the euro area architecture, along with completing the banking union and capital markets union.

I may just repeat what I said at the beginning. There are three fundamental priorities to consider in the architecture of the euro area:

- Completion of the banking union. Some important progress has been made, including the creation of a

single supervisor and a single resolution mechanism. But the banking union also requires a European Deposit Insurance Scheme.

- Integrated single European capital market. This is crucial for making the financial system in Europe more resilient. To fully unlock the potential of capital markets there is need to increase information transparency, move to more efficient insolvency regimes and to simplified and harmonized withholding tax rules.

- Central fiscal capacity. A central fiscal capacity at the euro area level would strengthen the ability to deploy fiscal policy, complementing monetary policy, in case of significant euro area-wide downside dynamics. It would also help countries stabilize their economies in downturns.

An important guiding principle for the future of fiscal rules in the euro area is simplicity.

Three main directions: first, consolidation of preventive and corrective arms, second, shifting to a single fiscal anchor and a single operational target, and third, establishment of a central fiscal capacity (Andrle and others, 2015).

Shifting to a single fiscal anchor and a single operational target could serve the dual objective of fiscal sustainability and simplicity. An option is to use the public debt-to-GDP ratio as the anchor and an expenditure growth rule as the operational target, with a debt correction mechanism to better link the rule to the anchor.

Tying real expenditure growth to the economy's potential growth rate would serve economic stabilization and debt sustainability, while providing a clear operational guide that is easier to measure, communicate, and monitor.

The IMF's recent research shows that the level of public debt is the most important predictor of crises, showing strong nonlinearities (Moreno Badia, Medas, Gupta and Xiang, 2020). Moreover, beyond certain debt levels, the likelihood of crises increases sharply regardless of the interest-growth differential. Also, the interest rate-growth differentials are no higher prior to sovereign defaults than in normal times (Mauro and Zhou, 2019).

Moreover, contrary to common belief, lower nominal interest rates do not necessarily imply more fiscal policy space. This is clear from debt's equation of motion. Nominal GDP growth and interest rates are closely related. If both growth and interest rates decline by the same magnitude, the effect on public debt is zero. The headline deficit should fall in line with interest payments.

Expenditure rules a balance between the objectives of flexibility and simplicity, although they can be sensitive to initial conditions. An increasing number of countries have shown interest in in expenditure rules in recent years. Spending rules have to be supplemented by correction mechanisms to deliver the debt anchor.

The experience of many countries with the golden rule of public finance has not been encouraging. That provides another motivation for the PSBS approach. As a complement to a system of rules focusing on debt and deficit the PSBS provides useful information to consider the public finance impact of public investments.

There is room for progress. The first comprehensive estimate of public assets in the European Union was only released in November 2018, by the European Commission. The publication highlights significant data shortcomings in many countries (Gaspar, Gonguet and Stone, forthcoming).

The new macroeconomic reality of low nominal interest rates and the complexity of the implications of population dynamics and transformational dynamics suggests the reinforced public expertise in public finances. The role of

fiscal councils could be made commensurate to these challenges. In particular, they could be entrusted, among other tasks, with the responsibility to produce the macroeconomic forecasts grounding the budget, and also the costing of fiscal policy measures.

According to this logic, fiscal councils could be made fully independent. The European Fiscal Board could also be made fully independent and be placed at the center of a system of independent national fiscal councils. To repeat: this could be a good way to respond to the increased complexity arising from the constraints on policy interest rates and economic transformation associated with the green and digital transitions.

Based on the survey that the IMF conducted in 2016, fiscal councils in the euro area differ in terms of the extent of their independence. Also, most fiscal councils do not prepare forecasts and do not provide costing of fiscal measures (IMF, 2013).

Let me conclude

The euro area architecture requires the completion of banking union, capital markets union and a central fiscal capacity.

The review of the ECB's monetary policy strategy is timely.

There is ample room to simplify fiscal rules for the euro area by using a single debt anchor and a single operational (nominal) spending target.

The added complexities associated with constraints on policy rates and the intertemporal dimension of population dynamics and green and digital transformations point to:

- better information based on accrual accounting and the PSBS approach;

- reinforced role for a system of independent national fiscal councils with an independent European Fiscal Council, at its centre. ■

Vitor Gaspar is Director of the Fiscal Affairs Department at the International Monetary Fund

Endnotes

1. Delors' Report – The Delor's report was launched in Apr 1989 by the Delor's Committee, which was chaired by the then President of the European Commission, Jacques Delors and consisted of central bank governors and other members. The Delor's report suggested the three stages for achieving Economic and Monetary Union and helped the monetary and economic unification process to develop. The three conditions were - full and irreversible convertibility of currencies, the establishment of the free movement of capital, irrevocably fixed exchange rates between European currencies and, finally, the adoption of a single currency.

Maastricht Treaty - Representatives from 12 countries signed the Treaty on 7 February 1992 – Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and the United Kingdom. The treaty established the European Union; laid the foundations for the Euro; introduced the criteria that countries must meet to join the Euro and it was a step forward for European integration.

Stability and Growth Pact (SGP) – The inception of the SGP comes about as the EU Member States agree to strengthen the monitoring and coordination of national fiscal and economic policies to enforce the deficit and debt limits established by the Maastricht Treaty.

Preventive Arm - The preventive arm of the SGP aims to ensure sound budgetary policies over the medium term by setting

parameters for Member States' fiscal planning and policies during normal economic times, while taking into account the ups and downs of the economic cycle.
Corrective Arm - The corrective arm of the SGP ensures that Member States adopt appropriate policy responses to correct excessive deficits (and/or debts) by implementing the Excessive Deficit Procedure (EDP) and essentially bring down the headline deficit figure of 3% of GDP.
Structural Balance –Corrects the nominal government budget balance for one-offs and business cycle effects and it is used to assess the underlying fiscal policy effort. Estimates of the structural budget balance play a central role in the preventive arm of the Stability and Growth Pact.
First European Semester – The Commission proposed in May and June 2010 to create a European Semester and this new governance architecture was approved by the Member States on 7 September 2010. The semester entails the EU and the euro zone to coordinate ex ante their budgetary and economic policies, in line with both the Stability and Growth Pact and the Europe 2020 strategy.
Six Pack –The reinforced Stability and Growth Pact (SGP) enters into force on the 13th December 2011, with a new set of rules for economic and fiscal surveillance. These new measures, the so-called "Six-Pack", are made of five regulations and one directive proposed by the European Commission and approved by all 27 Member States and the European Parliament.
Fiscal compact – The fiscal compact as enshrined in the new "Treaty on Stability, Coordination and Governance in the Economic and Monetary Union" was agreed at the EU summit of 30 January 2012 and signed on 2 March by the Heads of State or Government of all EU countries, with the exception of the United Kingdom and the Czech Republic. The main provision of this Treaty is the requirement to have a balanced budget rule in domestic legal orders.
Two –pack- The "Two-Pack" established in 12 March 2013 completes budgetary surveillance cycle for euro area and further improves economic governance.
Communication Flexibility – This guidance essentially focuses on how the Commission will apply the SGP rules to foster the strengthening of the link between structural reforms, investment and fiscal responsibility in support of jobs and

growth.
2. However, this Gaspar et al. exercise should not be considered a formal test of compliance, at least, for five reasons: first, it is based on ex post data (using the AMECO database) and does not correct for the classification changes that occurred following the transition from the ESA95 to the ESA2010 fiscal reporting formats; second, targets are assumed to be similar across countries, cover the whole period, and be constant over time; third, the assessment does not take into account the possible activation of escape clauses or other provisions granting some flexibility; fourth, the comparison is carried out for all 19 EA countries, comprising those that introduced the euro after 1999; and fifth, numerical deviations may not necessarily represent cases of noncompliance given that the EC also exerts economic judgment, on top of its quantitative assessment, in both preventive and corrective arms.
3. In the United Kingdom, Richard Hughes and others recently proposed a net worth 'objective' to deliver an improvement in public sector net worth as a share of GDP over a fixed five-year term from 2020-21 to 2024-25. This means that the growth in the value of the government's total financial and fixed assets needs to exceed that of its debt and other liabilities over the next five years as a share of GDP.

References

Andrle, M, J Bluedorn, L Eyraud, T Kinda, P Koeva Brooks, G Schwartz, and A Weber, 2015, "Reforming Fiscal Governance in the European Union", IMF Staff Discussion Note 15/09
Arnold, N, B Barkbu, E Ture, H Wang, and J Yao, 2018, "A Central Fiscal Stabilization Capacity for the Euro Area", IMF Staff Discussion Note 18/03
Auerbach, A, 2019, "The future of fiscal policy", Keynote Address, Fourth ECB biennial conference on fiscal policy and EMU governance
Ball, I ,2019, "Balance sheets and fiscal policy: the New Zealand example", Public Finance International
Berger, H, G Dell'Ariccia, and M Obstfeld, 2018, "Revisiting the Case for a Fiscal Union in the Euro Area." Departmental

Paper, IMF Research Department, International Monetary Fund, Washington, DC.
Blanchard, O, 2019a, "Public debt and low interest rates", American Economic Review 109(4): 1197-1229.
Blanchard, O, 2019b, "Revisiting the EU fiscal framework in an era of low interest rates".
Blanchard, O, and J Pisani-Ferry, 2019, "The Euro Area Is Not (Yet) Ready for Helicopter Money", Peterson Institute for International Economics
Blanchard, O, and L Summers, 2020, "Automatic Stabilizers in a Low-Rate Environment" (forthcoming)
Blanchard, O, and L Summers (eds), 2019, "Evolution or Revolution? Rethinking Macroeconomic Policy after the Great Recession", MIT Press, 2019.
Blanchard, O and T Tashiro, 2019, "Fiscal Policy Options for Japan", Peterson Institute for International Economics, Policy Brief 19-27
Blanchard, O, Á Leandro, S Merler and J Zettelmeyer, 2018, "Impact of Italy's Draft Budget on Growth and Fiscal Solvency", Peterson Institute for International Economics, Policy Brief 18-24
Buti, M, 2020, "Economic Policy in the Rough: A European Journey", Center for Economic Policy Research Policy Insight #98.
Buti M, S Deroose, V Gaspar, J Nogueira Martins (Eds), 2010, "The Euro: The First Decade", Cambridge, Cambridge University Press
Cabral, A, 2017, Economic Stabilization Some reflections on counter cyclical fiscal policy in EMU.
Carnot, N, M Kizior, and G Mourre. 2017. "Fiscal Stabilization in the Euro Area: A Simulation Exercise", CEB Working Paper 17/025, Centre Emile Bernheim, Solvay Brussels School of Economics and Management, Brussels
Caselli F, and P Wingender, 2018, "Bunching at 3 Percent: The Maastricht Fiscal Criterion and Government Deficits", IMF Working Paper No. 18/182
CEPR, 2018, "Reconciling risk sharing with market discipline: A constructive approach to euro area reform", Policy Insight no 91.
Clarida, R, J Gali, and M Gertler, 1999, "The Science of Monetary Policy: A New Keynesian Perspective", Journal of

Economic Literature, Vol. XXXVII (December 1999), pp. 1661–1707
Deroose, S, Carnot, N, Pench, L and G Mourre, 2018, "EU fiscal rules: Root causes of its complexity", Vox EU, CEPR Policy Portal, 14 September.
Detken, C, V Gaspar, and B Winkler, 2004, "On Prosperity and Posterity: the Need for Fiscal Discipline in a Monetary Union", ECB Working Paper No. 420.
Detter, D and S Fölster, 2015, "The Public Wealth of Nations How Management of Public Assets Can Boost or Bust Economic Growth ", Palgrave MacMillan publishing.
Eichengreen, B and K O'Rourke, 2010, "What do the new data tell us?", voxeu.org
Eyraud, L, V Gaspar, and T Poghosyan, 2017, "Fiscal Politics in the Euro Area", In Fiscal Politics, edited by V Gaspar, S Gupta, and C Mulas-Granados, 439–76, IMF, Washington, DC.
Eyraud, L, X Debrun, A Hodge, V Lledó, and C Pattillo, 2018, "Second-Generation Fiscal Rules: Balancing Simplicity, Flexibility, and Enforceability," IMF Staff Discussion Note 18/04.
Eyraud, L and T Wu, 2014, "Playing by the Rules: Reforming Fiscal Governance in Europe," IMF Working Paper 15/67.
European Fiscal Board, 2019, Annual Report.
European Fiscal Board, 2019, "Assessment of EU Fiscal Rules with a focus on the six and two-pack legislation".
Gaspar, V, and D Amaglobeli, 2019, "Fiscal Rules", SUERF Policy Note, Issue No 60.
Gaspar, V, F Gonguet, and M Stone, forthcoming, "Perspectives on the Management of Public Wealth".
Goodfriend M and R King, 2001, "The Case for Price Stability", National Bureau of Economic Research", Working Paper 8423
Hughes, R, J Leslie, C Pacitti and J Smith, 2019, "Totally (net) Worth It: the next generation of UK fiscal rules", Resolution Foundation
IMF, 2013, "The Functions and impact of fiscal councils", IMF Policy Paper 2013.
IMF, 2014, "Fiscal Governance in the Euro Area: Progress and Challenges," Euro Area Policies, Selected Issues, IMF Country Report No. 14/199.

IMF, 2018, "Managing Public Wealth", Fiscal Monitor, October 2018.
IMF, 2020, "Fiscal Policy: Look Beyond Deficit & Debt to the Balance Sheet", IMF Intranet article.
Issing, O, V Gaspar, I Angeloni, O Tristani, 2001, "Monetary Policy in the Euro Area: Strategy and Decision-Making at the European Central Bank", Cambridge, Cambridge University Press.
Krebs, T, and M Scheffel, 2013, "Macroeconomic Evaluation of Labor Market Reform in Germany", IMF Working Paper 13/42
Mauro, M and J Zilinsky, 2016, "Reducing Government Debt Ratios in an Era of Low Growth", Peterson Institute for International Economics Policy Brief 16-10.
Mauro, P and J Zhou, 2019, "r ? g < 0: Can We Sleep More Soundly?", draft paper presented at the 20th Annual Research Conference, November 7-8, 2019
Moreno-Badia, M, P Medas, P Gupta and Y Xiang, 2020, "Debt is Not Free", IMF Working Pape 20/1
Thomsen, P, 2018, "A Financial Union for the Euro Area", Speech delivered at the Conference of the Belgian Financial Forum (BFF) in cooperation with SUERF - The European Money and Finance Forum National Bank of Belgium
Woodford, M, 2005, "Central Bank Communication and Policy Effectiveness", National Bureau of Economic Research, Working Paper 11898.

The presentation was prepared in collaboration with David Amaglobeli. Virat Singh and Parvathy Annamalai provided research assistance support. We are grateful to Nathaniel Arnold, Bergljot Barkbu, Oliver Blanchard, Antonio Cabral, Maria Coelho, Jacqueline Deslauriers, Rupa Duttagupta, Romain Duval, Luc Eyraud, Johannes Eugster, Alejandro Hajdenberg, Erik Lundback, Anton Mangov, Paolo Mauro, Paulo Medas, Aiko Mineshima, Rumit Pancholi, Catherine Pattillo, Alex Pienkowski, Andrea Schaechter, Mauricio Soto, Moez Souissi, Elif Ture, Anke Weber and Jeromin Zettelmeyer for helpful comments and suggestions. The views expressed in this presentation are those of the authors and do not necessarily represent the views of the IMF, its Executive Board, or IMF management. This article is based on a keynote

address delivered at the workshop on Fiscal Rules in Europe: Design and Enforcement, DG ECFIN European Commission, in Brussels, Belgium, January 28, 2020.

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

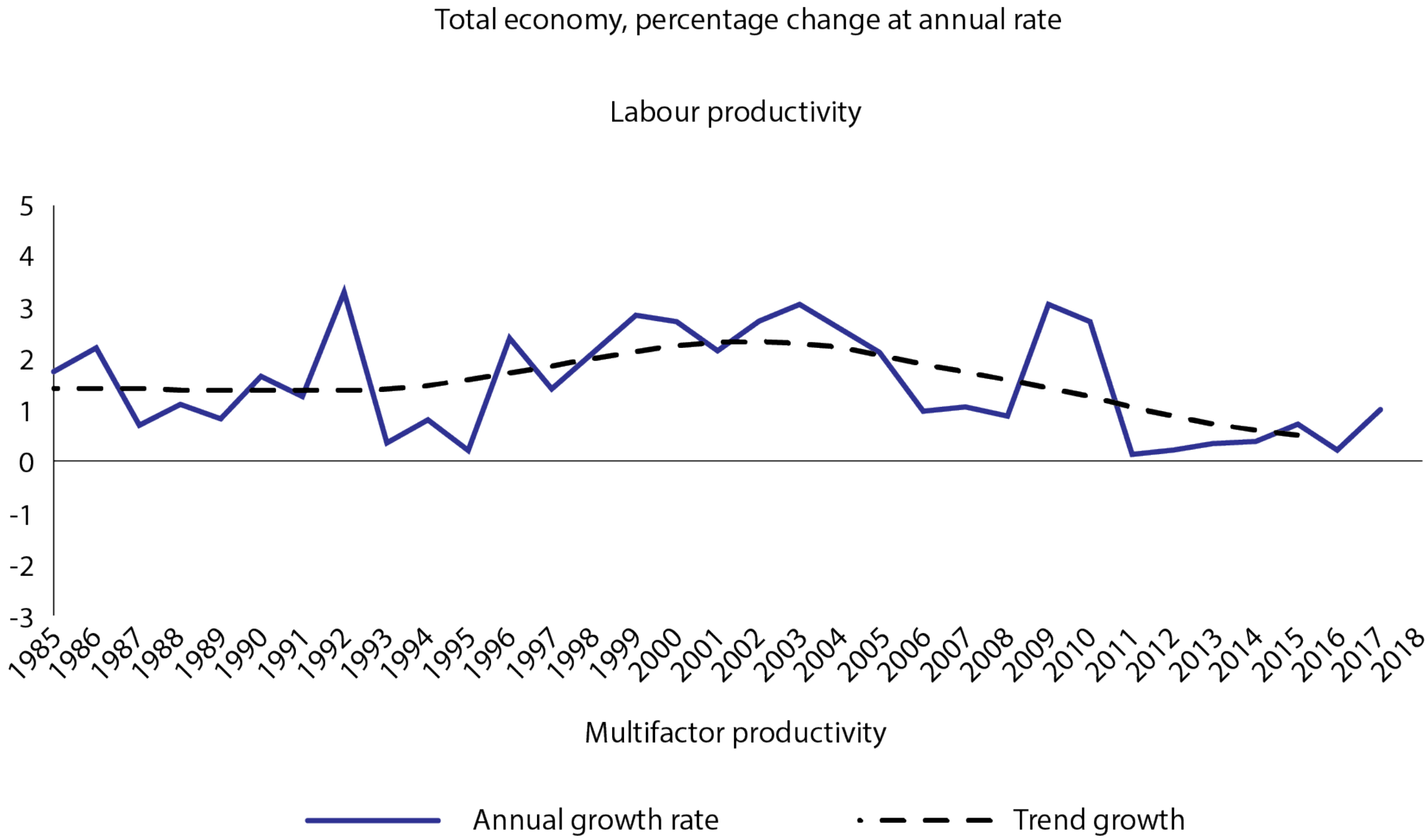
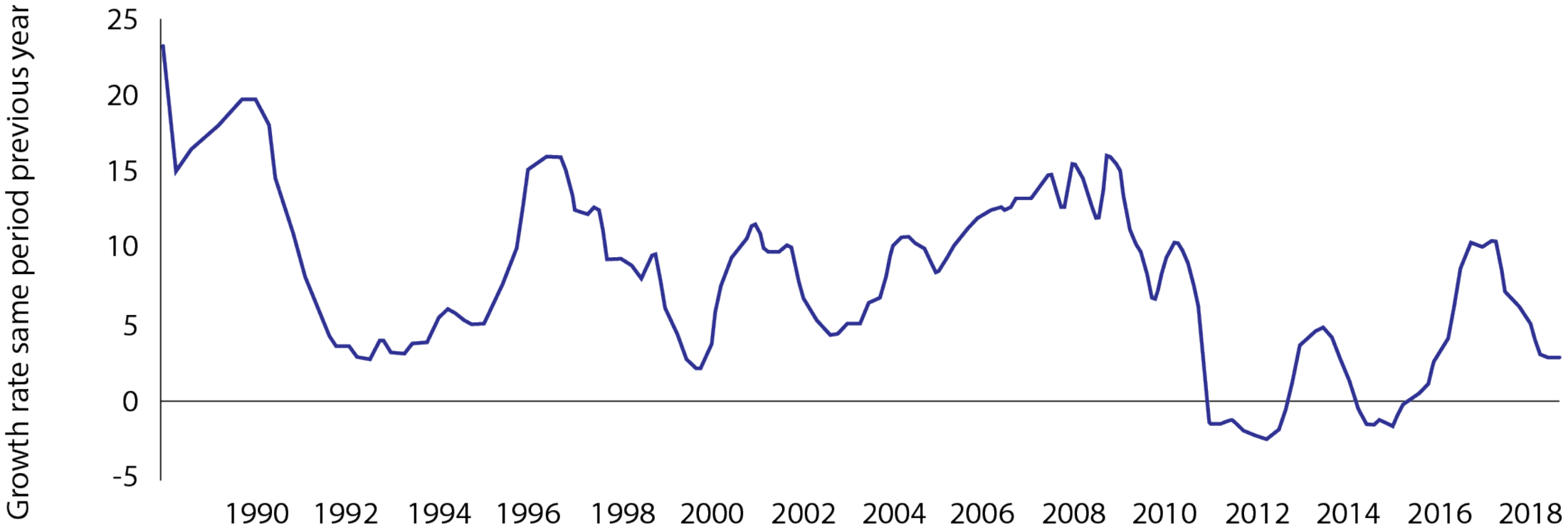


Figure 2. Monetary aggregates and their components: M3: M3 for the United Kingdom



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'

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 criticized. 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 criticized 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 neighboring 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 center 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 neighborhood 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

Developing a coherent EU competition policy

Mathew Heim asks how can European competition law address market distortions caused by state-owned enterprises?

Executive summary

This Policy Contribution assesses whether European competition law could be applied more directly to state-owned enterprises that create an unlevel playing field in Europe because of the support they receive from their home governments. This issue has become a priority for many European Union countries and for the European Commission, given its impact on European economic autonomy.

Competition law may not be the appropriate tool for addressing the granting of illegal subsidies or other forms of support in third countries, but it could be more effective than previously thought in dealing with the distortive effect of state-owned entities on the EU internal market.

If State-Owned Enterprises are not resource-constrained or even profit maximising, they might be unconstrained by competitive pressures, therefore possessing a *de-facto* level of market power. By adapting existing antitrust theories of harm, such as predatory pricing, to fit the specific nature of SOEs, this Policy Contribution argues that it should be possible to add further tools to the EU's toolbox.

In any event, as part of its efforts to address the distortive effects on the internal market of foreign state ownership and subsidies, the European Commission should develop a coherent and proactive competition policy to provide guidance to the market.

Introduction

The distortive effects that foreign state-owned or state-supported companies can have on European markets and on the European Union's economic autonomy are starting to worry policymakers. The focus tends to be on the links between the Chinese government and Chinese businesses.

The Chinese government's patronage of companies threatens European value chains and possibly also Europe's critical infrastructure, according to the European Commission's in-house think tank, the European Political Strategy Centre (EPSC, 2019).

One of European Commission executive vice-president Margrethe Vestager's new tasks is to develop tools and policies to address the unlevel playing field created by *"the distortive effects of foreign state ownership and subsidies in the internal market"* (Von der Leyen, 2019)[1].

Tackling the unlevel playing field created by third countries' protectionist industrial policies through their SOEs is especially important given evidence of under-enforcement by the Commission

There has been a plethora of proposals from European governments and industry groups on how to address this unlevel playing field, including reforming trade-defence instruments, but few proposals have explored competition policy options in detail[2]. Those that have looked at competition policy tended to focus on reforming European merger control, either to enable the creation of European champions or to screen foreign transactions more aggressively[3].

This Policy Contribution focuses on a different area of competition policy: how European abuse-of-dominance rules could address the anticompetitive effects of state support[4].

We first look at a pragmatic definition of companies benefitting from state support or state direction, and at the role of such companies in China, specifically how they enable Chinese industrial policy. We then review how competition law treats state-owned enterprises (SOEs), exploring market power and other key considerations, before touching on predatory pricing as a potentially fruitful theory of harm.

We acknowledge certain challenges in enforcing competition rules against SOEs, notably sanctions. We conclude with recommendations on providing coherent guidance to the market.

Undertakings directed by the state: definitional issues

The Organisation for Economic Cooperation and Development *2015 Guidelines on Corporate Governance of State-Owned Enterprises* (OECD, 2015a) define an SOE as a situation in which the state exercises legal ownership over an undertaking. This would include where the state is the ultimate shareholder, where corporations are established through legislation, or where the state exercises an equivalent degree of control through golden shares or other legal stipulations.

However, a more pragmatic view is used by the European Commission (2017) in relation to China where it recognises that the division of companies into 'private' and 'state-owned' is too simplistic, especially as privately-owned companies might have close government links because of the strategic importance of the markets they are active in. Such companies might also assist in the execution of governments' policy objectives (see for example Milhaupt and Zheng, 2015).

In this Policy Contribution, the expression 'state-owned enterprise' or 'SOE' is used to mean not only enterprise that are legally owned by the state, but also those that are effectively controlled or directed by the state, notably in pursuit of government policy.

The function of commercial Chinese SOEs in pursuing state policies abroad

The substantial role of SOEs in the Chinese economy gives the Chinese government an exceptional platform to exert control over its economy[5]. Notwithstanding announcements from China that pro-market SOE reforms are imminent, developments have rather confirmed the use of SOEs to pursue non-market goals.

The European Commission (2017) highlighted different ways in which the Chinese state uses SOEs to drive strategic policy goals. It cites the 2015 'Guiding Opinions of the Central Committee of the Communist Party of China and of the State Council on Deepening the Reform of State-owned Enterprises' seeks to reinforce the role of state ownership of SOEs of a commercial nature *"and to use such ownership for strategic economic goals decoupled from market rules."* Under this guidance, the performance of commercial SOEs will also be assessed *"on their efforts to serve national strategies, safeguard national security and the operation of the national economy, develop cutting-edge strategic industries and complete special tasks."*[6]

These policies do not appear to be purely domestic. European Commission (2017) also noted the Chinese Government's intention to maintain direct control over SOEs active in international markets, to which it would provide resources to aid such developments.

There therefore appears to be a Chinese policy to foster the international competitive positions of certain firms, in order to serve the strategic goals of the country, notably to increase China's international economic influence.

SOEs and competition law

When an undertaking carries out an economic activity, its ownership is effectively irrelevant to competition law analysis[7]. Undertakings should not benefit from competitive advantage or immunity merely because they are government-owned (Fox and Healey, 2014). Competition law is therefore a powerful tool to address the activities of both domestic and foreign SOEs (OECD, 2015a), if they act in an anticompetitive manner.

There are, however, a number of important characteristics that differentiate SOEs from private undertakings. For example, SOEs can benefit from significantly fewer regulatory constraints, such as employment or environmental protection conditions, softer budget constraints or access to credit on preferential terms, and subsidies (OECD, 2018).

The state can also allow national champions to have unrestricted growth in their national market, protected from the rigours of foreign competition (European Commission/High Representative, 2019). These advantages translate into significant international competitive advantages that private enterprises cannot benefit from nor match. Given globalisation, increasingly global markets and cross-border transactions, the effects on the competitiveness of markets in different jurisdictions can be broad-ranging (OECD, 2018). Competition law might therefore be interested in the effects of such advantages on market competition.

The European Commission and national competition authorities in Europe have applied competition rules to tackle the anticompetitive impact of SOEs, but that has been done mainly for European SOEs in a largely uncoordinated manner[8]. Svetlicinii (2018) noted that there is little coherence or consistency in the approach of national European competition authorities to merger reviews involving Chinese SOEs.

Furthermore, despite evidence of an increase in SOEs' share of the economy generally there has been a marked decrease in the number of competition investigations and sanctions against these SOEs in Europe, and no European investigation has been opened against an SOE since 2014 (Schrepel, 2019).

It seems generally accepted that the strategic behaviour of state-funded or state-controlled enterprises could damage the functioning of the internal market. For the purposes of this paper, anticompetitive distortions are assumed to occur.

However, more empirical work is needed to test those assumptions. It remains important for sound policy and for evidence-based enforcement to establish observable facts of market distortion and of abuse. Without such an exercise, any policy or enforcement solutions proposed might not address the underlying problems, might be disproportionate or might result in unintended consequences.

When considering its competition prioritisation strategies, the European Commission's competition directorate-general (DG Competition) should engage with other Commission departments and with EU countries in order to identify and assess market distortion. Particular scrutiny could be applied to those sectors that are explicitly linked to a third country's international industrial policy. It would of course be incumbent on the Commission to carefully select cases where there is *prima facie* evidence of harm, in order to ensure that there can be no criticism on the basis of protectionism.

Indeed, if enforcement is not based on valid competition law grounds (but rather intends to protect industrial champions or pursue strategic or industrial-policy goals), cases against foreign SOEs might result in non-tariff barriers to trade (OECD, 2018).

SOEs and market power

Antitrust enforcement can only occur if the undertaking under investigation possesses market power. The EU court in the United Brands and Hoffmann-La Roche cases defined market power as; *"a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of its consumers."*[9]

The very fact that SOEs may benefit from access to state resources, or are subject to fewer financial obligations, can effectively cushion them from market pressures (which might indeed be the point of state involvement in the undertaking). The ability of SOEs to act in a manner that is unconstrained by competitive pressure would therefore be a critical factor in establishing market power; one could even argue that this could be a rebuttable presumption.

The impact of anticompetitive international SOE activity will primarily be on the competitive process, affecting competitors or customers (rather than any short-run consumer benefit in terms of, eg. consumer prices), which might result in efficient competitors exiting the market (or not entering the market).

Such a result is anathema to modern competition policy (Heim and Midoes, 2019). In this context, it would be logical for the Commission to focus on protecting the competitive process, as a proxy for long-run consumer welfare.

SOEs' strategic incentives

Competition policy assumes that market players are economic entities seeking to maximise profits. SOEs, however, might prioritise strategic policy goals over profit-maximisation, and could be specifically required to do so by their government. As far as China is concerned, many SOEs appear to be established on the basis of carrying out government objectives, rather than correcting market failures (García-Herrero and Xu, 2017).

Understanding the underlying strategic objectives of particular SOEs is therefore critical in appreciating whether they are acting as classic market participants or are (also) engaged in activities driven by strategic policy incentives.

Where a state's industrial strategies include the use of SOEs to control or affect specific markets, the result might be to distort effective competition and force efficient rival firms out of that market. In fact, where an SOE's obligation to the state is to deliver on industrial policy, the SOE might be tempted to actively engage in exclusionary practices in order to gain market share and/or ensure strategic autonomy.

This would suggest adapting the usual analytical tools used to assess markets and anti-competitive conduct, in order to take into account the activities and specificities of SEOs and ensure the neutral enforcement of a consumer welfare standard (OECD, 2015).

Predatory pricing

Dominant companies are prohibited from engaging in pricing below marginal cost, which they can afford to bear, as this might drive competition from the market in the long term. This theory is particularly interesting in the context of SOEs because, as noted above, SOEs might not be bound by classic industrial organisation pressures. SOEs may be able to sustain losses – and to do so over long periods – with no need to seek recoupment of lost 'profits' in the post-predation period[10].

The specificities of SOEs thus not only challenge the traditional notions of the relevant price-cost test, by which predatory pricing allegations should be measured, but also the 'equally efficient competitor' test given that the conditions of an SOE's 'competitiveness' may effectively be set by its government.

In the Deutsche Post case[11], the European Commission concluded that Deutsche Post's medium-term pricing strategy was not in its economic interest. Rather than implying that Deutsche Post should have been seeking to earn a commercial margin, the Commission applied the logic that setting loss-making prices was irrational unless the loss was to be compensated for through higher prices elsewhere or at a later date.

The Commission did not explicitly consider whether Deutsche Post was likely to be able to recoup the identified losses or where from. This makes sense, as an SOE might not intend to recoup incurred losses nor might they be acting in their rational economic interest, given that – depending on the case – the SOE could be prioritising an industrial strategy required by the state. Therefore, predation theory could be explored in the SOE context.

Challenges to enforcement of competition rules against SOEs

Of course, investigating and establishing competition abuses by non-EU SOEs in the EU market is unlikely to be straightforward. SOEs create practical challenges for competition authorities beyond competition policy orthodoxy. This includes accessing the necessary information to effectively review anti-competitive practices. SOEs might have less regard for the competition authorities and might even face pressure from their governments not to engage with competition authorities, notably where the SOE is embroiled in broader political issues.

The EU Gazprom case clearly demonstrated how competition investigations can have geopolitical elements, given that the Russian state sought to obstruct foreign investigations of Russian strategic enterprises and prohibited Gazprom from replying to the information requests issued by the European Commission (OECD, 2018).

DG Competition has tools to address non-compliance, such as imposing fines for supplying inaccurate or misleading information. While such tools could be used more aggressively, they might not be sufficient. In a case in which a trading partner of the EU controls an SOE that does not comply with a Commission investigation, the matter could well be elevated beyond competition enforcement. For this reason, close coordination between DG Competition and DG Trade in such cases is warranted.

Sanctions and remedies

The topic of sanctions for anticompetitive practices by SOEs also needs reflection. In particular, calculating the appropriate level of fines following a violation might be difficult where an SOE's turnover figures are not public, either because of the complex structure of the SOE or where access to the necessary information is being obstructed.

In addition, the deterrent effect of fines might be limited if financial penalties are effectively paid from state coffers (or are ultimately passed-on to taxpayers).

Any company found to have abused their market power must, of course, cease the infringing activity. In order to ensure compliance, transparency requirements could be imposed on an infringing SOE active in Europe to ensure future pricing strategies are legal. Classic anti-trust remedies are devised for traditional market participants but one could envisage broader tools in the case of SOEs.

The Commission has some flexibility in fashioning acceptable solutions (such as requiring procurement in Europe contracts to take into account any history of market abuse or transparency in accounting), as long as these are effective and proportionate to ensuring a level playing field.

Market guidance

Drawing inspiration from past cases, the Commission could develop a more coherent policy on the specific challenges raised by SOEs, as discussed above. The Commission could fulfil its policy function by ensuring that European competition rules relating to SOEs are clear and well-understood, and by providing clarity to market participants through a range of soft-law instruments, including guidelines and guidance papers, informal guidance letters[12], annual work plans and commissioned studies, which should show what practices undertakings should consider carefully.

Issuing guidelines that address SOE market distortions will allow the Commission to hone its analytical tools to the specific characteristics of SOEs and provide clarity to the market about where its enforcement priorities lie.

More coherent action by the European Commission relating to SOEs will be important to show that third-country government protection of SOEs will not be a shield against competition law enforcement.

SOEs and European industrial policy

Overall, the EU can seek to address the negative effect of SOE activity. Trade policy and trade defence actions under World Trade Organization rules can be used to address the source of the problem, but to address the effects of the problem, the Commission might wish to consider competition law remedies if there is evidence of anticompetitive distortion.

The EU competition commissioner has broad discretion to prioritise cases and allocate resources, notably to ensure that competition actions are coherent and consistent with the EU's stated policy goals. The 2018 Gazprom case is instructive: the European Commission investigated the Russian energy SOE because of concerns that Gazprom imposed, among other things, territorial restrictions and excessive pricing on its energy customers.

The European Commission extracted commitments from Gazprom ensuring that customers had the ability to renegotiate long-term conditions in supply contracts, thereby increasing competition in the gas market. The Gazprom investigation also took place in the context of Europe's policy imperatives of realising a true internal market for energy, and of ensuring competitive energy pricing.

The European Commission is seeking to adapt to new realities of global competition. It is considering means of plugging the enforcement gap relating to the unlevel playing field created by protectionist industrial policies of third countries through the activities of their SOEs. This is especially important given evidence of under-enforcement by the Commission (Schrepel, 2019).

The paucity of realistic competition policy proposals to date does not reflect the significant role that competition policy can play as part of the range of European tools available to ensure a level playing field. The European Commission could exercise its competition powers more actively wherever the unlevel playing field distorts the internal market.

Opportunities exist to enhance the Commission's decision-making, analytical and enforcement capabilities. The difficulties of addressing abusive SOE action cannot discourage competition authorities from their task of ensuring a level playing field for European markets, companies and consumers. ■

Mathew Heim is a Visiting Fellow at Bruegel

Endnotes

1. See also the European Commission's Joint Communication, EU-China – A strategic outlook (European Commission/ High Representative, 2019) in which the Commission committed to finding means to "appropriately deal with the distortive effects of foreign state ownership and state financing of foreign companies on the EU internal market".

2. See for example the group of EU countries making up les Amis de l'Industrie (2018), BDI (2019), the German National Industrial Strategy 2030, presented on 5 February 2019 (BMWi, 2019), or the 2019 'Franco-German manifesto for a European industrial policy fit for the 21st century' (BMWi/Ministère de l'Économie et des Finances, 2019). Proposals include increasing the international competitive capacity of EU firms, boosting public and private risk investment, focusing on capacity building in specific sectors, increasing Europe's competence in digital markets, engaging in joint projects for key enabling technologies and flanking measures such as creation of a European sovereign wealth fund, increasing Europe's economic diplomacy through coordination of EU and member state trade and investment activities, and promoting European norms internationally.

3. See for example the 2019 joint proposals for modernising EU competition policy from the French, German and Polish governments (available at https://www.bmwi.de/Redaktion/DE/Downloads/M-O/modernising-eu-competition-policy.pdf), and Heim (2019).

4. This approach has some support, as expressed in a Dutch government non-paper of December 2019, which considers a range of options. See 'Strengthening the level playing field on the internal market', available at https://www.permanentrepresentations.nl/permanent-representations/pr-eu-brussels/documents/publications/2019/12/09/non-paper-on-level-playing-field

5. In 2014, SOEs represented 23 percent of the Fortune Global 500 list; China's SOE sector alone employs about 20.2 million people and is valued at $29.2 trillion (OECD, 2018; and the BIAC contribution to the OECD's 2018 Global Forum on Competition on 'Competition law and state-owned enterprises', available at https://one.oecd.org/document/DAF/COMP/GF/WD(2018)73/en/pdf)

6. See also http://en.pkulaw.cn/display.aspx?cgid=26c39a43ea095fcebdfb&lib=law

7. The OECD (2015b) defined the principle of competitive neutrality as being where "all enterprises, public or private, domestic or foreign, face the same set of rules, and where government's contact, ownership or involvement in the marketplace, in fact or in law, does not confer an undue competitive advantage on any actual or potential market participant."

8. European national competition authorities have also been active in investigation abusive practices by European SOEs. See for example the Italian Ferrovie dello Stato discriminatory practices case (1990); the Norwegian SAS predatory pricing case (2005); the Romanian CFR Marfa refusal to deal case (2006); the UK Cardiff Bus predatory pricing case (2008); and the German Deutsche Post AG margin squeeze case (2012).

9. See Case 27/76 United Brands Company and United Brands Continentaal BV v Commission [1978] ECR 207, paragraph 65, and Case 85/76 Hoffmann-La Roche & Co. AG v Commission [1979] ECR 461, paragraph 38.

10. This tension is explored by the Swedish contribution to the OECD's 2018 Global Forum on Competition on 'Competition law and state-owned enterprises', available at https://one.oecd.org/document/DAF/COMP/GF/WD(2018)54/en/pdf

11. Case COMP/35.141, Deutsche Post AG, of 20 March 2001, available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001D0354&from=EN

12. The Commission's 'Notice on informal guidance relating to novel questions concerning Articles 81 and 82 of the EC Treaty that arise in individual cases (guidance letters)' is in the Official Journal C 101, 27 April 2004, pp 78-80. The notice sets out the conditions under which the Commission may issue informal guidance letters, which would be apposite given how particular the SOE issue is.

References

Amis de l'Industrie (2018) 'Joint statement by France, Austria, Bulgaria, Croatia, Czech Republic, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Spain', 18

December, available at https://www.entreprises.gouv.fr/files/files/directions_services/secteurs-professionnels/industrie/amis-industrie/amis-industrie-final-declaration-2018.pdf

BDI (2019) 'Partner and Systemic Competitor - How Do We Deal with China's State-Controlled Economy?' BDI Policy Paper China, January, Bundesverband der Deutschen Industrie, available at https://english.bdi.eu/media/publications/#/publication/news/china-partner-and-systemic-competitor

BMWi (2019) German National Industrial Strategy 2030, Bundesministerium für Wirtschaft und Energie, 5 February, available at https://www.bmwi.de/Redaktion/DE/Pressemitteilungen/2019/20190205-altmaier-stellt-nationale-industriestrategie-2030-vor.html

BMWi/Ministère de l'Économie et des Finances (2019) 'Franco-German Manifesto for a European industrial policy fit for the 21st Century', 19 February, available at https://www.gouvernement.fr/sites/default/files/locale/piece-jointe/2019/02/1043_-_a_franco-german_manifesto_for_a_european_industrial_policy_fit_for_the_21st_century.pdf

EPSC (2019) EU Industrial Policy After Siemens-Alstom: Finding a new balance between openness and protection, European Political Strategy Centre, available at https://ec.europa.eu/epsc/publications/other-publications/eu-industrial-policy-after-siemens-alstom_en

European Commission (2017) 'On Significant Distortions in the Economy of The People's Republic of China for the Purposes of Trade Defence Investigations', SWD(2017) 483 final/2, available at http://trade.ec.europa.eu/doclib/docs/2017/december/tradoc_156474.pdf

European Commission/High Representative (2019) 'EU-China – A strategic outlook: European Commission and HR/VP contribution to the European Council', JOIN(2019) 5 final, available at https://ec.europa.eu/commission/sites/beta-political/files/communication-eu-china-a-strategic-outlook.pdf

Fox, EM and D Healey (2014) 'When the State Harms Competition—The Role for Competition Law', Antitrust Law Journal 79(3): 769-820

Heim, M (2019) 'Modernising EU competition policy: a brief review of member states' proposals', Bruegel Blog, 24 July, available at https://bruegel.org/2019/07/modernising-european-competition-policy-a-brief-review-of-member-states-

proposals/
Heim, M and C Midoes (2019) 'Protecting Competition or Protecting (some) Competitors: A European Debate', Concurrences 2-2019: 17-22
García-Herrero, A and J Xu (2017) 'How to handle state-owned enterprises in EU-China investment talks', Policy Contribution 18/2017, Bruegel, available at http://bruegel.org/wp-content/uploads/2017/06/PC-18-2017_2.pdf
Milhaupt, CJ and W Zheng (2015) 'Beyond Ownership: State Capitalism and the Chinese Firm', UF Law Scholarship Repository, available at http://scholarship.law.ufl.edu/facultypub/696
OECD (2015a) Guidelines on Corporate Governance of State-Owned Enterprises, Organisation for Economic Cooperation and Development
OECD (2015b) 'Discussion on competitive neutrality', Note by the secretariat, DAF/COMP(2015)13/ FINAL, Organisation for Economic Cooperation and Development, available at https://one.oecd.org/document/DAF/COMP(2015)13/FINAL/en/pdf
OECD (2018) 'Competition Law and State-Owned Enterprises', Note by the secretariat, DAF/COMP/ GF(2018)10, Organisation for Economic Cooperation and Development, available at https://one.oecd.org/document/DAF/COMP/GF(2018)10/en/pdf
Schrepel, T (2019) 'Antitrust without romance', NYU Journal of Law & Liberty, forthcoming, available at https://ssrn.com/abstract=3395001
Svetlicinii, A (2018) 'The Acquisitions of the Chinese State-Owned Enterprises under the National Merger Control Regimes of the EU Member States: Searching for a Coherent Approach', Market and Competition Law Review II(1)
Von der Leyen, U (2019) 'Executive Vice-President-designate for a Europe fit for the Digital Age', Mission Letter to Margrethe Vestager, 10 September, available at https://ec.europa.eu/commission/sites/beta-political/files/mission-letter-margrethe-vestager_2019_en.pdf

This article is based on a Policy Contribution (Issue n˚18 | December 2019) by Bruegel

A new EU level playing field instrument

EU competition policy appears to be ill-equipped to deal with the challenges raised by Chinese state capitalism. Thorsten Kaeseberg discusses some of the gaps in the EU's economic toolbox, and identifies potential goals and design

In its 2019 EU-China strategic outlook (European Commission 2019), the European Commission has identified a long list of distortive strategies applied by China, including *"selective market opening, licensing and other investment restrictions, subsidies to both state-owned and private sector companies, closure of its procurement market, localisation requirements, including for data, the favouring of domestic operators in the protection and enforcement of intellectual property rights and other domestic laws, limiting access to government-funded programmes for foreign companies, and onerous requirements to access the Chinese market."*

To achieve market access and reciprocity for EU companies, the China Communication vows to reform the WTO – in particular on subsidies and forced technology transfers – conclude bilateral agreements on investment, and adopt the International Procurement Instrument.

The main action point, however, singles out foreign state ownership and state financing of foreign companies and promises to assess how the EU could appropriately deal with their distortive effects on the EU internal market.

Within the Commission's assessment, it would be worthwhile to obtain empirical evidence, or at least estimations, on the relative size of the distortions on competition and trade due to state-owned enterprises (SOEs) and subsidies as compared to the other mentioned strategies.

However, qualitatively the ways through which such measures may distort competition in the internal market are well known – not only can they shield inefficiency, but they may also divert demand away or discourage entry from more efficient suppliers and allow the acquisition of assets and shares at inflated prices.

The gaps

The EU's current economic toolbox does not cover these distortive effects.

- First, EU competition rules apply without discrimination. In principle, they are not, and should not be, asymmetrical industrial or trade policy leveraging tools. In particular, EU merger control does not allow the Commission to intervene against the acquisition of a European firm solely on the grounds that the buyer benefitted from foreign subsidies.

Defending and leveraging its economic order means that the EU has to put in place instruments to achieve goals and to put in place rules beyond what has been agreed on an international level – potentially similar to a carbon border tax

However, there are ways to interpret and enforce existing rules in a more robust way against distortions due to SOEs and subsidies. A German-French-Polish paper has called for taking into account the state control of undertakings when calculating turnover, as well as the financial power of state-controlled and subsidised undertakings when deciding in substance on mergers (BMWI 2019). Academics have gone further and suggested treating all Chinese acquirers as part of a single broad syndicate in merger review and assuming an underlying coordination scheme in antitrust investigations (Petit 2016).

Past and current reviews of mergers with Chinese acquirers show that it is extremely hard to obtain reliable information on state ownership and corporate control structures. As long as sufficient transparency is lacking, an assumption on single control at least for the question of notification might be an option. However, even such an interpretation would leave a significant gap in the toolbox.

- Second, EU state aid instruments only cover aid granted by member states. Extending EU state aid control in its current form beyond aid by member states would, at least legally, be a challenge in terms of public international law. The WTO Agreement on subsidies and countervailing measures is limited in its scope and only applies to goods.

- Third, WTO rules also limit the scope of EU trade defence instruments (TDIs) (ie. anti-dumping policy, anti-subsidy policy, and safeguards). These instruments do not cover all potential effects of unfair subsidies or support measures by non-EU countries. In particular anti-subsidy policy only captures public financial contributions, which are confined to a specific firm, industry, or group of firms or industries producing or exporting goods; it does not cover state ownership. Countermeasures by the Commission consist of duties on imports of the subsidised goods. Any assessment of existing tools will have to consider in particular the gaps left by the current anti-subsidy instrument.

With a view to closing the gaps in the regulatory toolbox, the Vice-President of the European Commission, Margrethe Vestager, has welcomed a Dutch proposal that would add a level playing field instrument as a new pillar of EU competition law (*Financial Times* 2019). Closing gaps in a smart way will require a sound assessment of the relevant costs and benefits from an economic, regulatory, and political economy perspective. Several strategic questions have to be answered.

Potential goals of a level playing field instrument

The *first* issue is to define the strategic goal of a new instrument. The obvious objective would be to ensure a level playing field and fair competition for all companies in the internal market. Setting incentives within the 'systems competition' in particular with China and gaining leverage in trade negotiations would be another.

This is closely interrelated with the *second* question. To what extent is the EU willing to go beyond the WTO Agreement on subsidies and countervailing measures? The EU has bound itself beyond WTO rules through its state aid rules and through the application of competition and state aid rules to public undertakings (Article 106(1) TFEU).

Defending and leveraging its economic order means that the EU has to put in place instruments to achieve goals and to put in place rules beyond what has been agreed on an international level – potentially similar to a carbon border tax.

Potential scope and procedure

A *third* choice to be made is over what conduct and distortive effects shall be captured. Targeting distortive state ownership and subsidies at the source or border measures would be difficult to implement.

Therefore, current ideas centre around prohibiting distortive conduct of the undertaking in the internal market. A recent – far-reaching – contribution to the debate by the Dutch government (Dutch Permanent Representation 2019) suggests as the baseline the 'market economy operator' principle (ie. normal market conditions applicable to private undertakings).

Conduct other than as a market economy operator could be prohibited in certain scenarios. Whether those scenarios, such as predatory pricing, can be transferred from abuse of dominance law (Article 102 TFEU) to a level playing field instrument should be subject to an empirical assessment of distortive strategies applied by SOEs and subsidised non-EU companies.

Specific scenarios could be acquisitions of EU companies with 'abnormally high' or tender offers with 'abnormally low' bids. While the US has limited Chinese investment on the basis of national security concerns, in 2018 Chinese investment into the EU27 (excluding the UK) saw the largest growth and reached 70% of China's total foreign M&A in value (Garcia Herrero 2019).

So particularly strategic and potentially inflated Chinese investment into EU companies could indeed be regarded as a challenge. At the same time, it may be too easy to focus on eye-catching mergers. An empirical assessment of different distortive strategies, in particular of the prices for acquisitions in the past, and of the effects of these strategies is warranted.

A *fourth* issue to be resolved would be to design an effective and efficient procedure. While for some potentially distortive strategies, such as 'inflated' bids, an *ex ante* control with a standstill obligation may be appropriate, for others an *ex post* control may be sufficient. It would be crucial to force adequate transparency on state ownership and subsidies.

Potential remedies

A *fifth* issue would be to design appropriate inspection rights, remedies, and sanctions that can be implemented against the respective company in breach of the level playing fields' substantive provisions. Both the Regulation on competition procedures (1/2003) and the Merger Regulation provide a menu of options such as prohibition and conditional clearance decisions, including structural and behavioural remedies as well as fines.

Additional creativity may be needed with regards to corporate governance measures in order to offset the distortive effect of state ownership or a subsidy. If these issues can be resolved in a rule-based way within a level playing field regulation that is implemented by the Commission, the EU may well not solve all the challenges raised by Chinese state capitalism – but it could add one tool to its arsenal to better defend its economic order within the system's competition. ■

Thorsten Kaeseberg is Head of Competition Law Policy at the German Federal Ministry for Economic Affairs and Energy

References

Bundesministerium für Wirtschaft und Energie (2019), "Modernising EU Competition Policy", Report.

European Commission (2019), "EU-China – A strategic outlook", Report, March.

Financial Times (2019), "Margrethe Vestager examines curbs on non-EU state-backed companies", 16 December.

Garcia Herrero, A (2019), "Europe in the midst of China-US strategic competition: What are the European Union's options?", Bruegel Working Paper.

Dutch Permanent Representation (2019), "Strengthening the Level Playing Field on the Internal Market", report, December.
Petit, N (2016), "Chinese State Capitalism and Western Antitrust Policy", American Security Project Paper.

Author's note: the author writes in his personal capacity. This article was originally published on VoxEU.org

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

A trillion reasons to scrutinise the Green Deal Investment Plan

The European Commission has revealed its €1 trillion investment plan for the European Green Deal. Grégory Claeys and Simone Tagliapietra argue that more must be done to unleash the 'green investment wave'

One month after unveiling its European Green Deal, the European Commission has revealed its first proposals on the investment pillar of the initiative. The Commission's proposals have two main objectives. Firstly, to mobilise the sustainable investments required to reach the EU 2030 climate and energy targets. And secondly, to provide support to territories facing serious socio-economic challenges deriving from the transition towards climate-neutrality.

The Commission claims their proposal would lead to at least €1 trillion of investments over ten years, unleashing a 'green investment wave'. Could this really be the case? Let's unpack the European Green Deal Investment Plan to get a sense of its realistic firepower and overall impact in the transition towards a climate-neutral Europe.

What are the investment needs for the European Green Deal?

Let's start with the investment needed to reach the objectives of the European Green Deal. Most estimates of the yearly average additional investment (public and private) necessary to achieve the EU's current 2030 climate and energy targets are in the range of €175 billion to €290 billion.

The Commission itself assumes in its proposals a 'green investment gap' of €260 billion per year by 2030. But these figures refer to the current EU targets, centred on the greenhouse gas (GHG) emissions reduction target of 40% by 2030 relative to 1990 levels.

President von der Leyen has made clear that in the context of the European Green Deal these targets will be further deepened, to slash GHG emissions by 50-55% by 2030. This will clearly imply higher investment needs.

All in all, despite the high uncertainty surrounding these estimates, the additional investment requirements to reach the new 2030 targets could thus ultimately be around €300 billion per year over the decade. It must thus be

outlined that even if the Commission succeeds in mobilising €1 trillion of investments over ten years, this would just represent a third of the additional investment needs associated with the European Green Deal.

This is not a criticism of the Commission, which is trying to make the best out of its very limited budget, but a simple recognition that ultimately only national governments and the private sector will be able to fill the majority of Europe's 'green investment gap', without the help of the EU. The Commission should now focus its efforts on creating the conditions to allow these players to truly unleash 'a green investment wave'.

The Commission should focus on putting in place an enabling framework for private investments to be made. Carbon pricing has an essential role to play in that regard and this is an area where action is required

How is the magic €1 trillion number reached?

The European Green Deal Investment Plan proposal relies on five main sources of funding:

- **EU budget:** By raising the share of the EU budget allocated to climate and environmental expenditures from 20% to 25%, the Commission seeks to mobilise €503 billion over the next ten years.

- **InvestEU:** building on the mechanism behind the Juncker's Plan, the idea is to provide an EU budget guarantee to the European Investment Bank (EIB) and other promotional banks to allow them to increase their risk-taking and to crowd in private investors in order support investment in Europe. It is supposed to mobilise €650 billion over the next 7-year Multi-annual Financial Framework (MFF), 30% of which devoted to climate projects.

  As a result, the Commission expects to unleash €279 billion of public and private funds over the next 10 years thanks to an EU budget guarantee for the EIB and other national promotional banks when they invest in European Green Deal associated projects.

- **National co-financing**: The Commission expects that mobilising €503 billion of the EU budget will trigger additional national co-financing of around €114 billion on climate and environment projects in the next 10 years.

- **EU Emissions Trading System funds:** Recalling the 2016 reflections of the 'Monti Report' on EU own resources, the Commission proposes to devote 20% of the revenues from the auctioning of EU Emissions Trading System (ETS) to the EU budget, for an estimated value of €25 billion over the next 10 years.

- **Just Transition Mechanism:** With €7.5 billion of 'fresh' EU budget resources (in addition to the resources proposed for the whole MFF in May 2018), the Commission intends to leverage at least €100 billion of investments over the period 2021-2027, with financing coming from other sources of the EU budget (European Regional Development Fund and European Social Fund+), co-financing from member states, as well as contributions from InvestEU and the European Investment Bank (EIB).

  Extrapolated for the whole decade, the Just Transition Mechanism is thus expected to mobilise around €145 billion over ten years (however, one should be careful of double counting, as some of these funds are already counted in other sources, eg. in the InvestEU source).

On top of the investment component, the Commission's proposals also unveiled a commitment to revise relevant State aid rules in light of the policy objectives of the European Green Deal.

In practice, the Commission would approve – under certain, flexible, conditions – member states' support in a number of areas, spanning from industry decarbonisation to residential energy efficiency, from district heating to circular economy.

What is really new in the European Green Deal Investment Plan?

All in all, the European Green Deal Investment Plan seems to represent a step in the right direction, but some hitches are already worth highlighting.

- As far as the 25% allocation of the EU budget to climate objectives is concerned, it should be outlined that it its overstretched to count the whole €500 billion as filling the investment gap, for three reasons.

First, because not all these expenditures can be considered as investments, as they are very diverse (from agriculture subsidies to research and innovation funding).

Second, because this actually represents an increase of only 5% compared to the benchmark. This means that the additional expenditures represent only €10 billion and not 50 billion per year (as the Commission seems to imply).

And third, because – as highlighted in our own Green Deal paper – it is essential that the Commission reviews the methodology of how expenditures are accounted for as contributing to climate objective, as the current methodology is flawed, and this element is missing in the current proposal.

- With regard to InvestEU, this is indeed the main EU tool to mobilise investments. However, again, the proposal to increase the share of climate-related projects is not new, as it was already proposed by the Commission in May 2018 and agreed in April 2019 by the European Council and Parliament. It should not be counted as additional compared to the baseline scenario.

Moreover, the EIB has already committed in November 2019 to increase its climate-related financing from 25% to 50%, so it is important to think critically about the pertinence to provide the EIB with additional guarantees to invest in these projects.

There are indeed some opportunity costs in putting money from the EU budget in a guarantee fund, as it could be used better by other EU programmes. This is particularly problematic given the warranted scepticism (based on the experience of the Juncker Plan) on the additionality, and thus on the potential leverage, of the InvestEU initiative.

- Coming to national co-financing, the amounts mentioned are, again, not really additional and the mobilisation is purely mechanical, as there is no incentive for countries to increase their financing in green projects on aggregate. This only represents a reshuffling of money towards projects co-financed with the EU in that field. What is really needed to push EU member states to increase green investment is a change in the EU fiscal framework, an option which is substantially watered-down in the Commission's proposal (which just mentions the possibility to discuss this idea in a future *"debate on how to improve EU fiscal governance"*).

- Finally, it should be outlined that the amounts of ETS funds will depend fully on carbon prices, and for the moment nothing has been announced by the Commission on that front to increase the price significantly. This represents an urgent front in the context of the European Green Deal.

What will the Just Transition Mechanism look like?

The Commission's proposals also contained more detailed elements on another crucial pillar of the European Green Deal, namely the Just Transition Mechanism.

In practice, this initiative will rely on three main pillars to reach the €100 billion threshold promised by President Von der Leyen:

- The creation of a Just Transition Fund endowed with €7.5 billion of 'fresh money' (which would be added to the total amount proposed in 2018 for the 2021-2027 MFF). This is supposed to lead to between €30 and 50 billion of additional funds for the regions most affected by the transition.

- Using some part of the InvestEU financing devoted to climate to support a total of €45 billion of investment in 'Just Transition' projects between 2021 and 2027.

- The creation of a public sector loan facility at the EIB partly guaranteed by the EU budget to mobilise between €25 to 30 billion of additional public investments in 2021-2027.

There are not many details on the second and third pillar of the Just Transition Mechanism, as the regulation proposal is focused exclusively on the establishment of the Just Transition Fund.

However, on the InvestEU pillar, the Commission's communication explicitly mentions that the negotiations on InvestEU which have resulted in an agreement between the European Council and Parliament in April 2019 will not be re-opened.

This means that the Commission intends to set aside a portion of the financing devoted to InvestEU climate and environment-related investments for 'just transition' labelled projects. This represents a share of the provisioning of around €1.8 billion of the EU budget guarantee for the InvestEU programme to reach €45 billion of investment in 'Just Transition' projects between 2021 and 2027.

And as far as the public sector loan is concerned, the only detail specified for the moment is that the EU budget will contribute with a guarantee of €1.5 billion.

However, the proposal does not explain where this money comes from and what EU programme will have to be cut by a similar amount to create this new guarantee. This is problematic.

Moreover, we doubt that this last initiative will be very useful at a time when EU countries can finance themselves very easily at very attractive (and in some cases even negative) rates.

Coming back to the Just Transition Fund, the regulation proposal provides more details on the type of projects in which the money will be used. Some of it will be used to invest in private projects and in particular in small and medium sized enterprises, but member states will also be able to use the funds to invest in human capital (eg. re-skilling and job search assistance).

The proposal also explains how the funds will be distributed geographically and what the criteria to access them will be. As described in details in the allocation method in annex 1 of the proposal, the funds will be pre-allocated by member states depending on multiple criteria: mainly on carbon-intensity and potential job losses in carbon-intensive sectors (coal, peat, oil shale, and manufacturing).

However, in order to access to the Just Transition Fund, countries will have to use part of their ERDF and ESF+ funds on these projects, and they will also have to directly co-finance projects. Finally, countries will have to submit 'territorial just transition plans' for the most affected regions to justify the funds and to show how they plan to fulfil their climate objectives. Access to the fund will be conditional on the approval of these plans by the Commission.

The pre-allocation might not be the best solution in order to reach the most useful projects in theory, and it might have been preferable to have no *ex ante* allocation as it is the case for the projects supported by the European Globalisation Adjustment Fund.

But, at least, putting some strong conditionality is a good idea given that the fund was created to convince countries to commit to the EU ambitious climate targets. The Commission might thus have found the right balance between pre-allocation and conditionality.

Conclusions

Overall, €1 trillion sounds like a big number, but by itself, the plan will not be sufficient to deliver the investments needed for the European Green Deal: an *additional* €100 billion per year over ten years would have represented only one-third of the additional investment required in Europe to reach the new 2030 EU climate and energy targets that President von der Leyen has pledged to put forward.

The plan will not even deliver these additional €100 billion per year in reality, as it will mainly consist of reshuffled funds from different existing programmes.

To be fair, it would have been difficult for the Commission to do much more, given the limited size of the EU budget. But this clearly outlines that there are other key tools that need to be used to unleash green investments in Europe.

One of these main tools is the EU fiscal framework, which should be reformed to authorise deficit-financed green investment. That is, EU countries should be allowed to seize the opportunity presented by low and even negative interest rates, to invest in green assets. This is the most important tool at the EU's disposal.

Finally, the Commission should focus on putting in place an enabling framework for private investments to be made. Carbon pricing has an essential role to play in that regard and this is an area where action is required. ■

Grégory Claeys and Simone Tagliapietra are Research Fellows at Bruegel

This article was originally published on Bruegel

A Green Deal will not work without refocusing productivity

Karl Aiginger argues that a welfare-oriented Green Deal needs to focus on resource and energy productivity, not raising labour productivity

The new president of the European Commission, Ursula von der Leyen, has announced a 'European Green Deal' as her concept for a new agenda. This makes sense: it promises to improve economic dynamics and to combat climate change, with its ever more visible consequences for all and particularly harsh consequences for the less-privileged.

The planned Green Deal, which supports wellbeing, is a coordination device and unifying programme for member countries. Its implementation calls for overdue fiscal reforms and altered behaviour on the part of politicians and citizens. However, the next climate summit in Glasgow will require better preparation than the one in Madrid in December 2019.

The European Semester as a policy implementation instrument

At first glance, it looks as if the European Commission's bureaucracy has understood this. In a recent Communication to the Parliament titled *Annual Sustainable Growth Strategy* (European Commission 2010, 2019), economic growth is declared to be not an end in itself; it is asserted that Europe has to develop a new growth model towards its ambition to achieve climate neutrality, and that it is the task of the European Semester — the institution providing annual economic guidelines — to monitor this new strategy and its implementation in the member countries.

However, what follows looks very out of date and will destroy all envisioned change. The core problem is the uncritical use of the notion of 'productivity', which dominates what should be a sustainable growth strategy. The long-term trend of *declining productivity growth* is carved out as the core of European problems. The document states that Europe needs a transformation of its society based on the quadruple goals of productivity, stability, fairness, and environment, but it uses the term 'productivity' at least ten times without ever defining it or at least admitting that there are very different types of productivity.

The components of higher productivity

Let us try to fill this gap. Productivity means more output per input. We set aside how output is measured, as this may be a task for specialists. But what is all-important is that productivity can be considered more output per worker, more output by capital investment, or more output per energy and resource input.

All these partial productivities, together with a residual that is understood to be the effect of the innovation system, yield 'total factor productivity'. Let us also set aside the factor capital which is again difficult to measure (though rules exist).

The goals of the Paris Agreement require deep decoupling. Without strongly increasing resource productivity, higher output will undermine the fight against climate change

The problem is that in this Communication, productivity is implicitly understood to be the *increase in output per worker*, which is a partial aspect of *labour productivity*. This term has been at the centre of policy for the last decades, and it still preoccupies the thinking of misguided experts in the European Commission.

They do not even realise its advantages and disadvantages, especially when the increase in labour productivity is larger than that of resource productivity.

The advantage of rising labour productivity is that it could lead to more leisure, and if this is not welcomed, it enables higher output and higher wages.

However, its disadvantage is that if it is not accompanied by higher resource productivity, higher output will raise emissions and accelerate climate change. And it is a factor increasing the necessity for growth, if unemployment is not negligible.

Alternatively, increasing output per resource input allows for higher output without higher emissions (Aiginger and Rodrik 2020). If this 'nice cousin' of labour productivity is strong enough, we can enjoy higher wages and well-being together with strictly lower emissions, which is called 'absolute decoupling'.

The goals of the Paris Agreement require deep decoupling. Without strongly increasing resource productivity, higher output will undermine the fight against climate change.

The policy-induced technology bias must change

Thus, in a recent paper (Aiginger 2019), I argue that a welfare-oriented Green Deal needs to focus on resource

and energy productivity, not raising labour productivity. This is not public policy interference in naturally given technology trends.

The current economic policy is by far not neutral. It favours labour productivity, an ideology implicitly bought by the experts who wrote the Communication. Taxes are primarily raised on labour, making this factor expensive and forcing the firms to increase labour productivity. Emissions are not as highly taxed; if we calculate the subsidies for fossil energy, net taxes on fossil energy might be near zero or negative.

Thus, current policy biases the technology into labour saving. If the European Commission uses the word productivity without defining it, we must suspect that the European Semester will not promote the Green Deal adequately.

A better European Green Deal in a nutshell

Today, scientists are unanimous in stating that climate change endangers our planet. Political leaders have followed, in principle, by signing the Paris Agreement. But limiting global warming to 1.5°C requires cutting greenhouse gas emissions by 80–95%.

Global trends are at variance with this path[1]. The US has announced it would exit the agreement, Brazil has opened its rain forests to commercial activity, China is investing heavily in new coal plants, and Africa needs energy to feed its tripling population. Regions feel they are being 'forgotten' and support populist leaders who decry the importance of climate change.

In this environment, Europe must take the lead. This is an obligation arising from history and past errors, but also a chance to become a technology leader in a dynamic technology field. The positive message — not so well known

but empirically proven — is that the leader will enjoy net benefits through an ambitious strategy due to fewer costs, lower tangible and human damage, and ability to shape the next technology according to its own preferences.

The reluctant follower — who always demands that others take the lead — faces higher costs for patents, licenses, and imported machines. Repairs are costly and acting in a state of emergency requires strong public intervention.

Stern and Porter have argued and presented some evidence for the first-mover advantage in sustainability (Porter 1990, Porter and van der Linde 1995, Stern 2007, European Commission 2010). As additional evidence, in Aiginger (2016 and 2019) I show that the countries leading in environmental policy in Europe – such as Denmark, Sweden, and Switzerland – are also leading in income and well-being rankings.

In my 2019 paper, I carve out five principles for the European lead:

- Emissions must be priced; subsidies for fossil energy must be curbed.
- Globalisation must be reshaped based on higher social and ecological standards enabled by international trade and investment agreements that are different from today's.
- Eliminating emissions by 90% and achieving climate neutrality requires new technology and energy sources, as well as boosting energy efficiency.
- A new strategy requires the greening of finance, new funds, products, and labelling.
- Behavioural changes are necessary, which require changes in education and training.

Currently, neither the world nor Europe is on the path to Paris, although the best performers in Europe have curbed their emission by 20% since 2000. Fortunately, the new president of the European Commission has called for Europe to *"strive for more"* and to design a European Green Deal.

The European Semester is a necessary tool for monitoring the strategy, but this will not work if the experts designing the general policy guidelines and the country-specific recommendations do not respect that the different components of productivity growth have different implications for the Green Deal's targeted goals. ■

Karl Aiginger is Director of the Policy Crossover Center in Vienna, and a Professor at the Vienna University of Economics and Business

Endnotes

1. Emissions are currently, at best, stagnating worldwide; they are decreasing by about 1% per year in industrialised countries and have doubled in emerging economies over the past two decades (Aiginger 2019).

References

Aiginger, K (2016), "New dynamics for Europe: Reaping the benefits of socio-ecological transition", WWWforEurope Deliverable No.11.

Aiginger, K (2019), "Europa muss globale Klimapolitik anführen (Europe´s potential to take the lead in fighting climate change)", Policy Crossover Center Policy Paper 3/2019.

Aiginger, K, and D Rodrik (2020), "Rebirth of industrial policy and an agenda for the 21st century", Journal of Industry,

Competition and Trade, forthcoming.
European Commission (2010), "An integrated industrial policy for the globalisation era putting competitiveness and sustainability at centre stage", Communication from the Commission to the European Parliament, the Council, the European Economic And Social Committee and the Committee of the Regions COM(2010) 614 final, Brussels.
European Commission (2019), "Annual sustainable growth strategy 2020", Communication from the Commission COM(2019) 650 final, Brussels.
Porter, ME (1990), The competitive advantage of nations, Free Press.
Porter, ME, and C van der Linde (1995), "Toward a new conception of the environment-competitiveness relationship", Journal of Economic Perspectives 9(4): 97–118.
Stern, N (2007), The economics of climate change: The Stern review, Cambridge University Press.

This article was originally published on VoxEU.org

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.

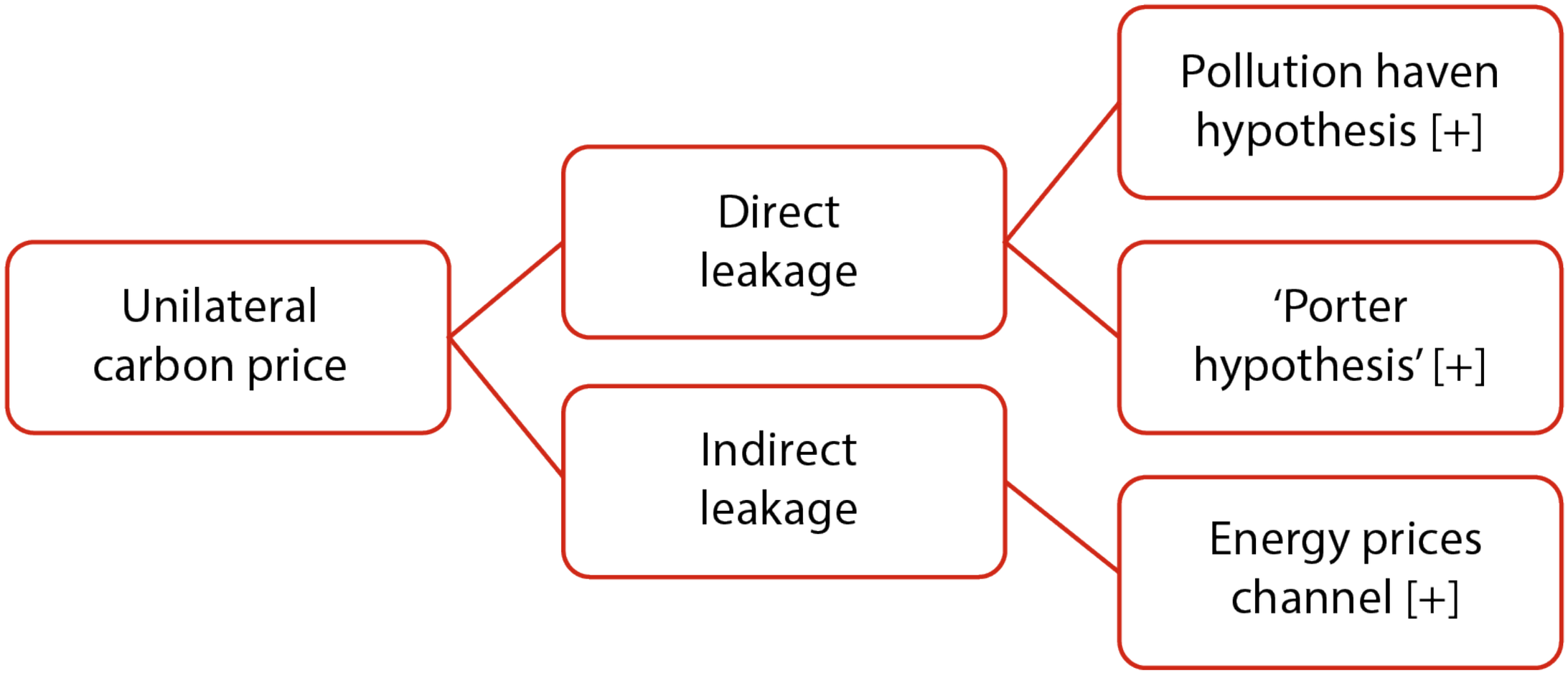
The EU should not make the introduction of a carbon border tax (CBT) that would tax the carbon embedded in imported products[3] into a must-have element of its climate policy. The existence of significant direct carbon leakage – which is the problem a CBT is designed to address – is mixed, and it would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

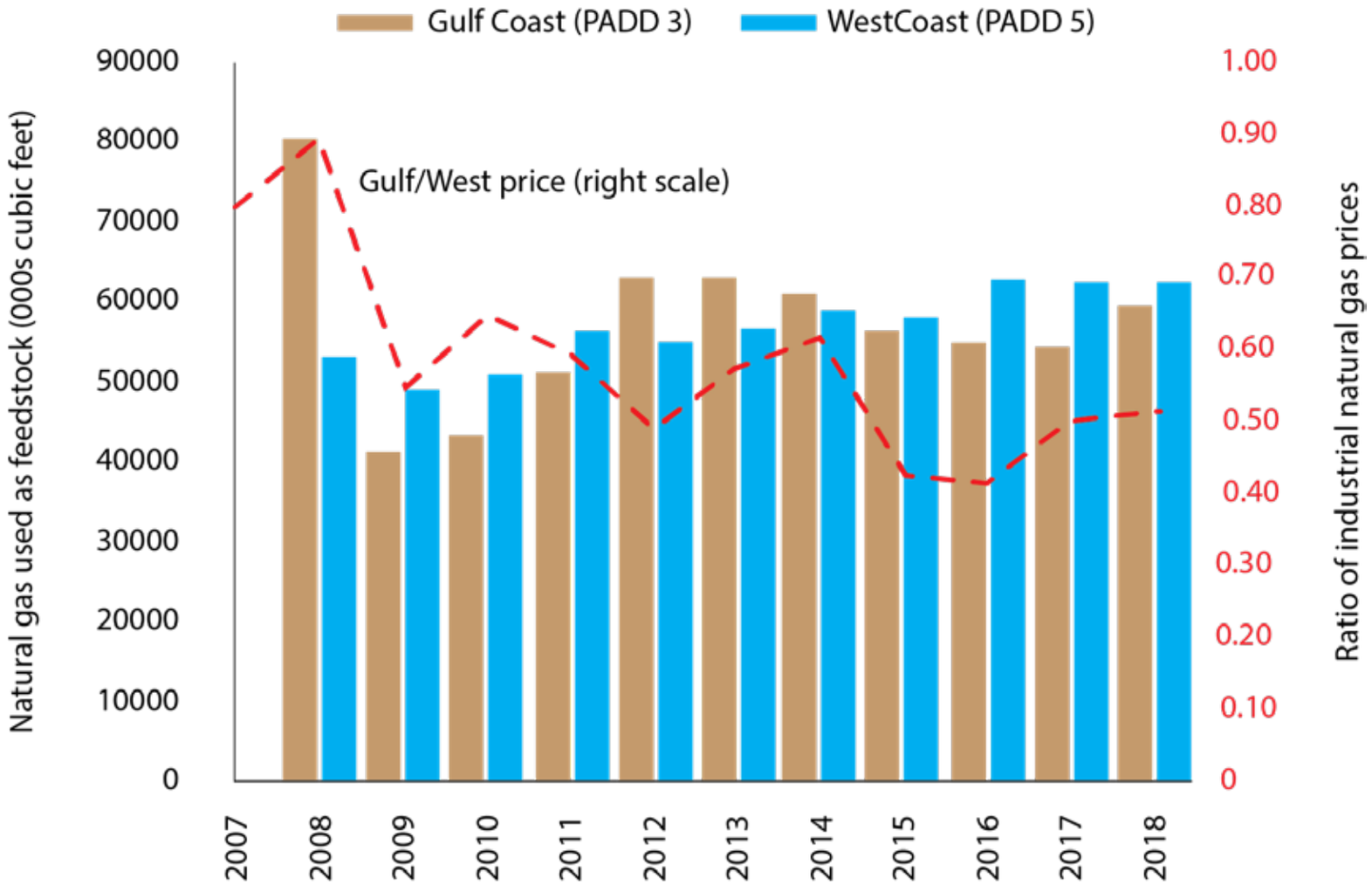
Given that carbon pricing differentials might not yet have been large enough to significantly influence competitiveness, energy price differentials could be used as a proxy for the expected effects of hypothetical carbon pricing.

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.

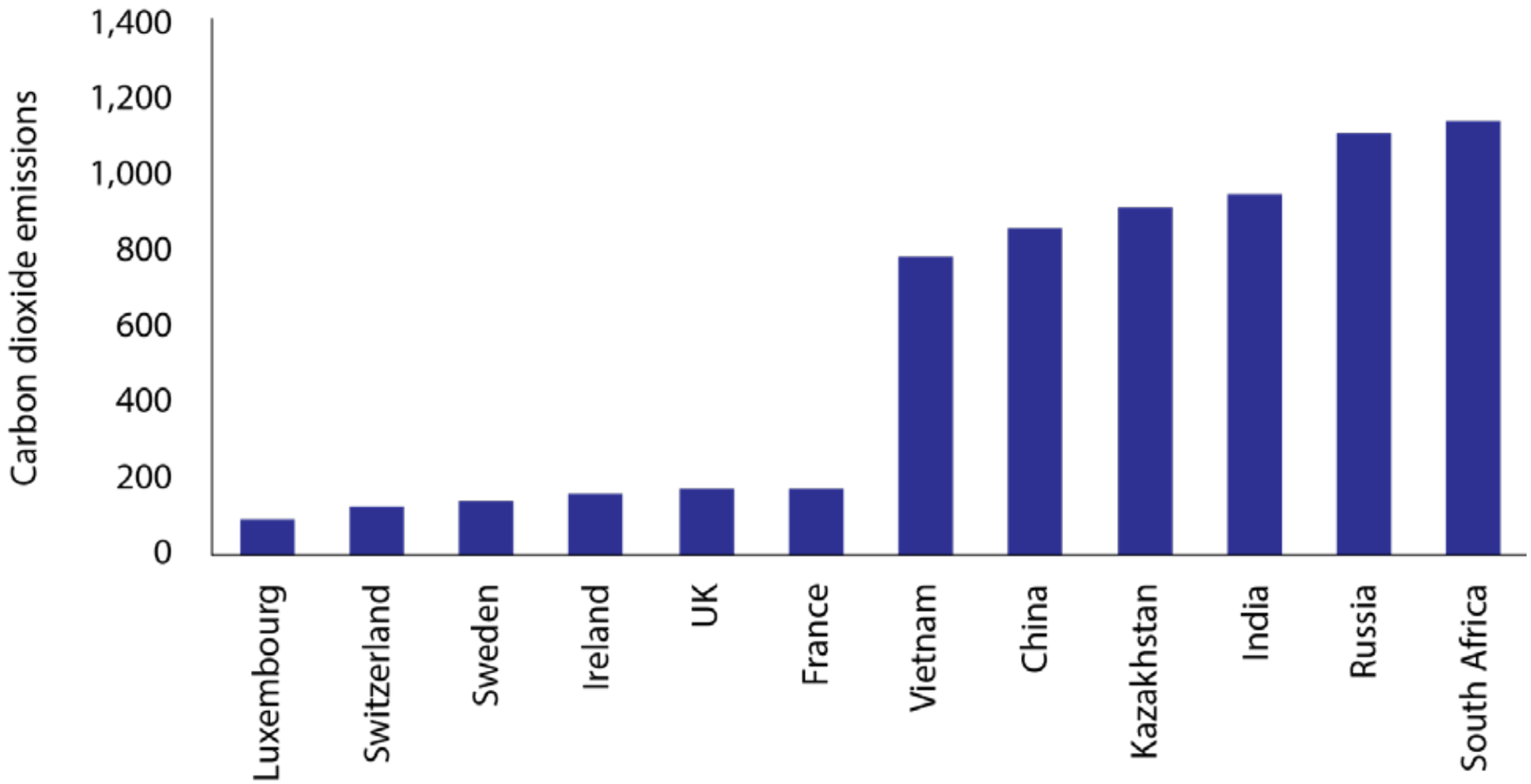
Moreover, a CBT might be seen as extraterritorial regulatory overreach by powerful countries that care a lot about their sovereignty. The narrative that the EU is introducing a CBT to trigger decarbonisation in other countries[28] is unlikely to help.

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 Trade partners will be encouraged to retaliate *Beggar-thy-neighbour* sentiment
Environmental argument	WTO compatible	Implies extra territoriality (no increase in foreign emissions) which might be politically sensitive Carbon leakage evidence is not clear
Induce stricter climate policies abroad	Potential to reduce emissions abroad	Impede upon sovereignty concerns of other countries Violates UNFCCC principle of 'common but differentiated'
Coverage of CBT		
Complete value chain	Fair	Logistically difficult
Selected sectors	Easier to manage 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

A threat to economic and national security

Inadequate data protection affects national security in many ways. Susan Ariel Aaronson examines the responses by the US and the EU

Individuals, citizens and firms have become increasingly dependent on data-driven services such as artificial intelligence and apps, and the same is true of defence and national security officials. This column argues that the US failure to adequately govern how firms use and monetise data affects national security in many ways. It also examines specific examples of the misuse of data and assesses the responses by the US and the EU.

The world is awash with personal data. As people increasingly rely on new data-driven services and products, from iPhones to exercise apps, almost every aspect of our daily activities has become a data collection opportunity.

In the US, home to the largest data companies in the Western world, individuals, citizens and firms have become increasingly dependent on data-driven services such as artificial intelligence and apps. Yet their person data are not adequately protected at the national level. As a result, they have also become more vulnerable to theft, hacking, and misuse.

Meanwhile, defence and national security officials have also become more dependent on data-driven services; from drones to tanks, data are now at the heart of national security. These officials collect personal data from citizens and soldiers to inform decisions, connect machines and people, and to recruit and train soldiers. As with personal information, these specialised datasets are also vulnerable to theft, hacking, and misuse.

Moreover, although much of our individual data are anonymised when they are used in large datasets, several studies have shown that anonymised data can easily be unencrypted when researchers cross-evaluate multiple datasets (Ohm 2010). Since nation states are comprised of people, nation states are also vulnerable to the misuse of personal data (*The New York Times* 2019a).

The US failure to adequately protect personal data is rooted in the economics of data themselves. As the scholar Shoshana Zubofff has shown, the designers of web applications such as browsers, apps, and social networks decided not to directly charge 'netizens' for innovative services.

Data are important to economic growth, and they are essential to national defence – from understanding and countering adversaries, to solving complex problems, to managing domestic personnel

They instead developed a business model where if netizens provided personal data, they could receive innovative free services (*The Guardian* 2019). Firms would then utilise and monetise those data to better understand customers, solve problems, and create new goods and services.

But the market for personal data is opaque; we know little about the supply and demand, the prices, the buyers, or the sellers. Moreover, the market is global and difficult to regulate (Aaronson 2019). As a result, countries (including the US) have struggled to devise a comprehensive approach to this problem. US policymakers have yet to develop a solution that effectively facilitates data-based innovation, whilst adequately protecting personal data from misuse (especially through apps or third-party reuse).

How does social science explain the evolution of this issue?

The American public claim that they care about privacy, but many people do not consistently act on that belief (Pew Research Center 2014). They do not vote with their feet and abandon firms that inadequately protect their personal data, nor do they seem to favour firms that embed personal data protection by deliberate design (TLS 2019).

Furthermore, they have not made personal data protection a political priority (EPIC 2019). Until recently, the data giants such as Facebook, Amazon, Google, Apple and Microsoft did not push for national privacy legislation. As a result, some 20 years after the US announced that online privacy is essential to e-commerce, the US still does not have a national privacy law. This policy failure resonates globally.

Although defence officials acknowledged that their dependency on data-driven services could cause national security problems as early as 2013 (Vice 2013), personal data protection (as opposed to proprietary data protection)

was not seen as a policy priority. Despite funding several projects, defence officials have not yet found an effective technical solution to ensuring privacy and effective anonymisation (DARPA 2015).

The US failure to adequately govern how firms use and monetise data affects national security in many ways. Threats posed by inadequate data protection can be direct or indirect, immediate or gradual, and they can be presented by insiders (domestic citizens or firms) or outsiders (foreign firms or adversaries).

For example, some US firms such as Facebook continue to misuse data and present few restrictions on third-party use and the monetisation of those data (NBC News 2018). In doing so, they are undermining trust and jeopardising privacy and legitimate democratic debate (*The Guardian* 2019). Foreign firms linked to governments can also take advantage of inadequate governance of personal data. They can create appealing apps that monitor users such as ToTok (*The New York Times* 2019b) or share data without intent in the case of the Strava heatmap of global users (Wired 2018).

These firms could also combine these data with other datasets or use such data to threaten other governments or citizens. There are emerging concerns that the apps Grindr and Tiktok, if under ownership by Chinese parent companies, may be required to share their user data with the Chinese government, although such claims are allegations (The Verge 2019, vox.com 2019).

How I analysed the issue

In a recent study, I performed a historical analysis of primary and secondary sources to understand how US government entities viewed and responded to the use/misuse of personal data. I then examined five different cases from 2017 to 2019. The case studies included social networks and apps which present both alleged or verified threats to security in the US, and internationally. I next examined US and EU responses to the issue of inadequate

Table 1. An overview of cases discussed

Case	Country/countries affected	Type of data service or platform	Data governance problem(s)	Threat to national security
Facebook	Global, US	Social network	Inadequately protecting personal data and selling data	*Insider threat* Violation of privacy, distrust. Effects are global
Strava	Global, US	Athletes social network	Inadequate understanding of spillover effects of exposure of collective anonymized personal data	Insider threat Exposure of anonymized personal information of military exposed national security information. Effects are global
FaceApp	Global, US	Photo app to age you, app created in Russia	Inadequate governance of personal data	*Outsider threat* Could share data with Russia, an adversary
ToTok	Global, strongest in UK, Saudi Arabia, UAE	App created overseas	App set up to surveil and provide government entity with personal data	*Outsider threat* Government appropriated app to surveil
TikTok	China, US	App created overseas	Acquisition of inadequately protected personal data	*Outsider threat* Data sets could be crossed, used for blackmail, intimidation and censorship

data governance. By relying on these different cases, I was able to present a more complete picture of the overall issue.

How has the US and the EU responded to the problem of inadequate personal data governance?

Both the US and the EU have responded to these concerns about inadequate data governance with protectionist policies. The US response is both nationalistic and slightly paranoid. The US Congress tasked an arm of the US Treasury with carefully reviewing foreign investments in companies producing and using data. The Treasury told the Chinese company that it must sell the LGBTQ dating site, Grindr (Wiley 2019, *The Washington Post* 2019).

The Trump Administration also proposed new regulations for the data supply chain, noting that *"the unrestricted acquisition or use in the United States of information and communications technology or services designed, developed, manufactured, or supplied by persons owned by, controlled by, or subject to the jurisdiction or direction of foreign adversaries augments the ability of foreign adversaries to create and exploit vulnerabilities in information and communications technology or services, and thereby constitutes an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States."*

Meanwhile, the EU already has strong data protection rules with international force. But in October 2019, Germany announced its plan (Bundesministerium für Wirtschaft und Energie) to create its own cloud infrastructure (the cloud can be defined as computing as a service). The Gaia-X project *"aims at setting up a secure and trustworthy data infrastructure for Europe."*

The project is not only designed to encourage European cloud self-sufficiency. With more European firms using its cloud, European states would have greater control over data markets. They plan Gaia-X to require 'open standards',

ensuring that businesses and consumers could move their data around freely, and share and reuse data at their individual discretion.

According to *Fortune Magazine*, a spokesperson for Germany's Ministry of Economics said that, in principle, the Gaia-X initiative will not exclude any company because it is not based in Europe. Participating companies must however abide by European rules around data protection and 'sovereignty'. The spokesman noted that because the project is at an early stage, the data governance rules are still to be defined (*Fortune* 2019).

Here is why you should care about this issue

Data are important to economic growth, and they are essential to national defence – from understanding and countering adversaries, to solving complex problems, to managing domestic personnel (*The Washington Post* 2017). How data are effectively governed will determine if the US can control both the data of its people and its government, as well as its own destiny. If loose lips can sink ships, inadequate data protection can move ships in the wrong direction. ■

Susan Ariel Aaronson is Research Professor and Cross-Disciplinary Fellow at the Elliott School of International Affairs, George Washington University

References

Aaronson, S (2018), "Data is Different", Centre for International Governance Innovation, Waterloo, Canada.

Aaronson, S (2019a), "Data is a Development Issue", Centre for International Governance Innovation, Waterloo, Canada.

Aaronson, S (2019b), "Data is different, and that's why the world needs a new approach to governing cross-border data

flows", Digital Policy, Regulation and Governance 21(5): 441-460.
Baron Cohen, S (2019), "Read Sacha Baron Cohen's scathing attack on Facebook in full: 'greatest propaganda machine in history'", The Guardian, 22 November.
Bergman, R, S Frenkel and Raymond Zhong (2020), "Major TikTok Security Flaws Found", The New York Times, 8 January.
Bundesministerium für Wirtschaft und Energie (2019), "'PlattFORM DIE ZUKUNFT' Dortmund Declaration zum Digital-Gipfel 2019".
Defense Advanced Research Projects Agency (2015), "DARPA 'Brandeis' Program Aims to Ensure Online Privacy Through Technology", 11 March.
Electronic Privacy Information Center, "Public Opinion on Privacy", Available at: https://epic.org/privacy/survey/
Gulliver, K (2019), "The opt-out illusion", TLS, 12 April.
Hartzog, W (2018), Privacy's Blueprint: The Battle to Control the Design of New Technologies, Harvard University Press.
Kavenna, J (2019), "Shoshana Zuboff: 'Surveillance capitalism is an assault on human autonomy'", The Guardian, 4 October.
Madden, M (2014), "Public Perceptions of Privacy and Security in the Post-Snowden Era", Pew Research Center (PRC).
Mazzetti, M, N Perlroth and R Bergman (2019), "It seemed like a popular chat app. It's secretly a spy tool", The New York Times, 22 December.
Meyer, D (2019), "Europe is starting to declare its cloud independence", Fortune, 30 October.
Newcomb, A (2018), "A timeline of Facebook's privacy issues – and its responses", NBC News, 24 March.
Newton, C (2019), "How Grindr became a national security issue", The Verge, 28 March.
Office of the Privacy Commissioner of Canada (OPC) (2014), "Metadata and Privacy: A Technical and Legal Overview".
Ohm, P (2010), "Broken Promises of Privacy: Responding to the Surprising Failure of Anonymization", UCLA Law Review 57: 1701, 2010.
Thompson, SA and C Warzell (2019), "How to Track President Trump", The New York Times, 20 December.
Travisono, M (2010), "The Tech Giants Get Rich Using Your Data. What do You Get in Return?", Entrepreneur, 28 September.

Van Puyvelde, D, S Hossain and S Coulthart (2017), "National Security relies more and more on big data. Here's why", The Washington Post, 27 September.
Wiley (2019), "CFIUS to review more investments in technology, infrastructure, and data companies under sweeping new regulations", 19 September.
Wired (2018), "The Strava heat map and the end of secrets", 29 January.
Zuboff, S (2019), The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power, Hachette.

Author's note: this is a shorter version of a policy brief and article prepared for the Canadian think tank Centre for International Governance Innovation. This version was published on VoxEU.org

From vision to legislation

In fighting anti-money laundering the European Commission should act fast toward creating a European anti–money laundering supervisor, Nicolas Véron and Joshua Kirschenbaum argue

The European Union is moving toward implementing a policy to strengthen anti–money laundering (AML) supervision across its Single Market, namely enforcing requirements on banks and other firms to ensure they do not facilitate transactions involving proceeds from illegal activities.

The European Commission, in charge of the next steps, should act fast to capitalize on the political momentum toward creating a central AML supervisory authority, the only credible response to the bloc's AML challenges. It should present a full proposal to EU co-legislators (ie. European Parliament and Council) by the summer of 2020.

A joint paper published in November 2019 by six EU finance ministers paved the way for progress. The finance ministers of all EU member states, in the conclusions of their ECOFIN meeting on December 5, *"invite[d] the Commission to explore…conferring certain responsibilities and powers for AML supervision to a Union body with an independent structure and direct powers vis-à-vis certain obliged entities chosen by the EU body in accordance with a risk-based approach."*

They asked the Commission *"to present legislative proposals in that regard in parallel to efforts to achieve a higher level of harmonization through an AML regulation."*

The ministers' language is clear enough to guide the Commission's drafting and avoid protracted technical deliberations. Ten key questions call for straightforward answers.

- Should there be an EU body with a direct AML supervisory mandate? Yes, because an EU-level *"supervisor of supervisors"* by definition acts too late, as we concluded in a 2018 Policy Contribution. Under the current system, the Paris-based European Banking Authority (EBA) is the EU-level supervisor of national AML supervisors for banks.

But it has not prevented or stopped large-scale AML violations and even failed to impose remedial measures in the ill-starred case of Danske Bank. The EU AML supervisor should have the ability to impose fines and business restrictions on noncompliant firms, a tool the EBA lacks even after the recent strengthening of its AML duties.

- Should this central authority be the European Banking Authority or a new agency? A new EU agency is preferable. The EBA's existing capacity is too small to make a difference: no more than a dozen AML staff in the current budget. A radical overhaul of its governance and decision-making structure would be required for it to become effective as an AML supervisor.

If the Commission further delays, it would risk losing the current reform opportunity. That would be bad for the EU financial system's integrity, and for all of Europe

Such an overhaul could be more complicated than creating a new agency, because the structure would also need to accommodate the EBA's other duties as banking regulator.

Moreover, the European AML supervisor should also cover nonbank financial firms, and even nonfinancial firms someday, whereas the EBA's scope is focused on banks – as its name indicates. Creating another EU agency should not be undertaken lightly, but AML supervision is important enough to justify it.

- How should that new agency be designed? It should be an authoritative and independent supervisor that can judge each case's merits without regard to diplomatic balancing acts. Independence will likely lead to more aggressive supervision, larger fines, and greater deterrence.

  A compact decision-making board of at most half a dozen members would be appropriate, following the precedent of the Single Resolution Board (SRB), which was established on the same EU Treaty basis.

- Where should it be located? This is ultimately a political decision. A city with an active labour market for financial and legal specialists—perhaps a medium-sized financial centre in post-Brexit European Union—would make sense.

- How should it be funded? As is customary for financial supervisors, the agency's funding should be raised via a levy on the financial industry under due EU parliamentary scrutiny, separate from the general budget of the European Union.

  To succeed, it probably needs a staff of 500 to 1,000, including dedicated 'country desks' to enable proper communication with the judiciary and law enforcement communities in each member state, a feature that

was not deemed necessary for the SRB or the European Central Bank's prudential supervisory arm known as the Single Supervisory Mechanism (SSM). This would make the new AML agency staff a bit smaller than the SSM staff of about 1,100 at the ECB.

- When should it start? As soon as is practical but not rushed, because it must be fully operational from day one. At least two years of preparation may be needed after the legislation is enacted. Assuming a Commission proposal in August 2020 and 18 months of legislative discussion, the transfer of supervisory authority could take place in the first half of 2024.

- Which entities should be directly supervised by the central body? This is a potentially contentious issue, but the ECOFIN conclusions' language already addresses the key choices. The SSM has set a mostly quantitative and non-discretionary boundary between banks that are directly supervised by the ECB and those that remain under national supervision with only indirect ECB oversight.

But a new AML supervisor should be able to make its own determinations, based on its risk assessment utilizing both quantitative and qualitative factors, with no presumption from pre-set mechanical criteria that would be easily circumvented by malicious actors. This different reading of the principles of proportionality and subsidiarity is justified because prudential supervisors examine the haystack, but AML supervisors look for the needles: the worst behavior is often channeled through small institutions.

If the incentives are right, the new EU agency should focus its time and resources on problematic firms, market segments, and member states (large or small). Conversely, it may choose to conduct no direct supervision whatsoever in member states where the national authority does an excellent job and AML risks are assessed to be low.

Proper drafting of the legislation can establish such risk-based differentiation while complying with EU jurisprudence on decision-making autonomy by EU agencies, especially the Meroni and ESMA short selling cases.

- Should there be an AML Regulation to complement or replace the existing AML Directives, and what should it include? Harmonization is needed, as the December ECOFIN conclusions hint, by way of an AML Regulation (immediately applicable EU law) and modification to existing directives that would create the 'single rulebook', which the new AML supervisor would enforce.

  This must include requirements on supervised firms in terms of AML program, customer due diligence, and reporting obligations, as well as fines for noncompliance. The legislation should also lift any legal obstacles to proper information sharing between the new supervisor and its counterparts in the member states, including Financial Intelligence Units (FIUs).

  Even so, the best can be the enemy of the good, and the regulation should only cover items that are indispensable to set up the new body. Other harmonization efforts that are desirable but not critical may be left to a later legislative phase.

- Can that AML Regulation and the legislation establishing the new AML supervisor be enacted simultaneously? Yes—in fact, they could be pooled in a single legislative act. A sequential approach would lose momentum and risk jeopardizing the entire reform effort. Here again the ECOFIN conclusions send the right signal by recommending the proposal for the new agency 'in parallel' to harmonization.

- Should the reform include an EU-level Financial Intelligence Unit? No, because such a step is less urgent and more complicated than creating a central AML supervisor. The major AML lapses of the past few years in the European Union have ostensibly involved failures of AML supervision, rather than of the FIU functions of collecting, transmitting, and analyzing information on suspicious transactions.

  Centralizing the FIU function may be desirable in the longer term but trying to do so now would burden and possibly cripple the urgent effort to establish an effective European AML supervisor.

The European Commission should consult widely in the spring and propose legislation this summer, no more than nine months after the December ECOFIN conclusions. As for precedent for such a timetable, the Commission was unexpectedly asked for a proposal to establish the SSM on June 29, 2012 and published it on September 12, and that project ventured into much less charted waters than AML supervision.

If the Commission further delays, it would risk losing the current reform opportunity. That would be bad for the EU financial system's integrity, and for all of Europe. ■

Nicolas Véron is a Senior Fellow at Bruegel, and Joshua Kirschenbaum is a Senior Fellow at the German Marshall Fund's Alliance for Securing Democracy

This article was originally published on Bruegel

Poverty reduction in the European Union

Europe 2020 includes a poverty reduction target. Zsolt Darvas argues these efforts should not aim at the wrong target indicator

The EU cannot meet its 'poverty' targets, because the main indicator used to measure poverty actually measures income inequality. The use of the wrong indicator could lead to a failure to monitor those who are really poor in Europe, and a risk they could be forgotten. The European Union's 2010 growth strategy, *Europe 2020*, included a target to lift *"over 20 million people out of poverty"* – to reduce their number from 116 million (or 24% of the EU population) to 96 million.

This was to be done between 2007 and 2019 in the first 27 EU member states – including the United Kingdom, but predating Croatian membership. *Europe 2020* refers to 2008-2020, but the monitoring values published by Eurostat for any particular year refer to the year of the survey, which considers income in the previous year.

Europe has a poor track record against such targets. The goal of the *Europe 2020's* predecessor, the Lisbon Strategy, *"to make a decisive impact on the eradication of poverty"*, was missed. In fact, the number of people deemed to be poor increased by more than 7 million between 2000 and 2010 in the first 15 EU members. The increase between 2000 and 2007 was 6.4 million and therefore the global financial and economic crisis, which intensified in 2008, was not a major reason for this failure.

Progress towards the *Europe 2020* poverty target has been disappointing: the number of people deemed 'poor' declined by 7.3 million from 2007-2017, making it unlikely that the 20 million reduction target will be achieved.

The at risk of poverty indicator measures income inequality

Why is it so hard to reach the EU's poverty target? The main reason (as I detailed in an article in Social Indicators Research) is that the EU uses the wrong indicator. Progress was measured against an 'at risk of poverty' indicator in the Lisbon Strategy, which is also a core indicator for *Europe 2020*. But this measures income inequality, not poverty.

This indicator considers people to be at risk of poverty if their income is below 60 percent of national median income, though this does not necessarily place them at high risk of poverty. Even Eurostat's glossary says the indicator *"does not measure wealth or poverty, but low income in comparison to other residents in that country, which does not necessarily imply a low standard of living."*

For example, someone with an income slightly below 60 percent of the median income in Luxembourg, and thereby regarded as 'at risk of poverty', can consume seven times more goods and services (measured in purchasing power standards) than someone in Romania with an income slightly above 60 percent of the national median income, who is therefore not considered to be 'at risk of poverty'.

The Europe 2020 strategy expires this year and the European Commission and European Parliament should take the opportunity to scrap the misleading 'at risk of poverty' indicator and its many variants

Income inequality and the share of people with an income below 60 percent of the national median are in principle associated. When income inequality is low, the at-risk-of-poverty rate is also low because if everybody earns roughly the same, incomes do not vary greatly from the median. This is irrespective of whether everyone is super rich or everyone is super poor.

For example, imagine an isolated tribe: everyone 'earns' the same (food to survive, basic cloths and a shelter), so nobody is below the median income and therefore the 'at risk of poverty' rate is zero, even though all tribe members are extremely poor.

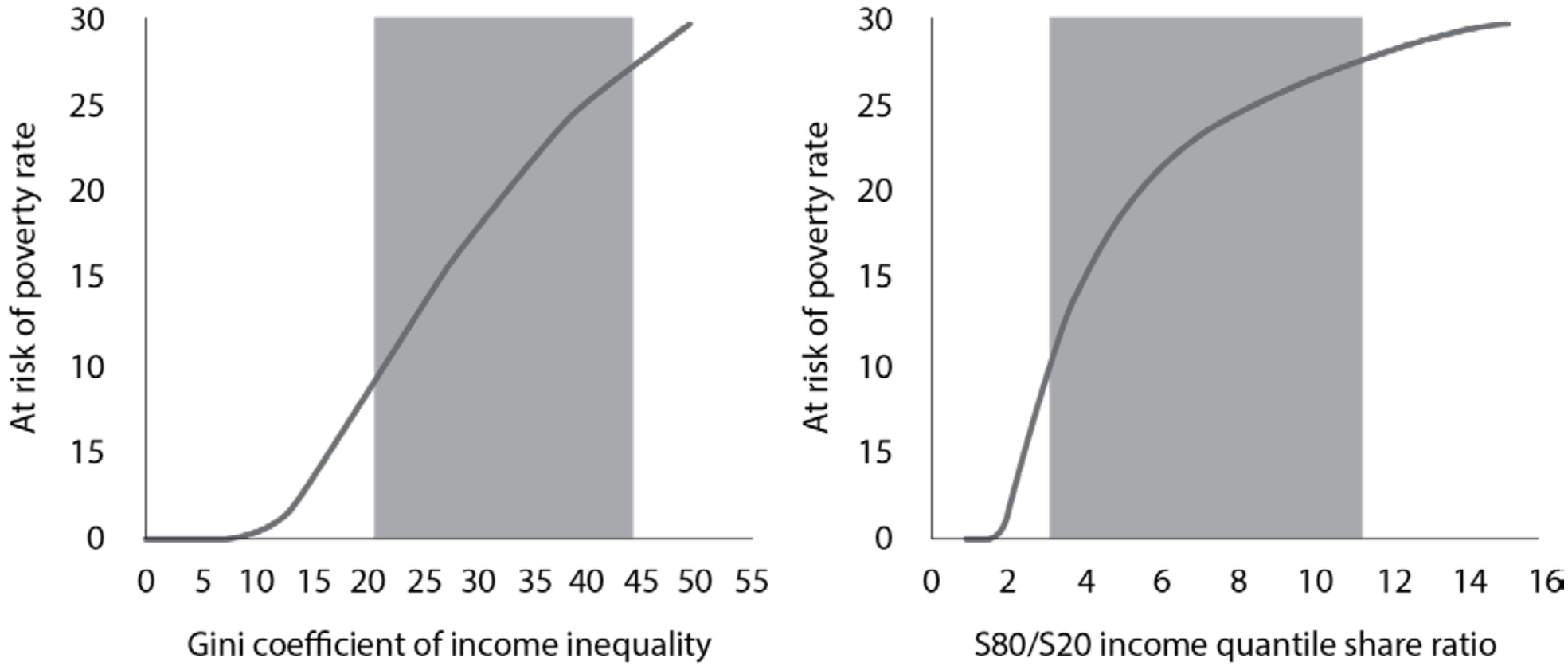
In contrast, in more unequal societies there are greater income differences and therefore more people below 60% of median income.

Theoretically, it is easy to establish a clear mathematical relationship between various measures of income inequality and the 'at-risk-of-poverty' rate, as illustrated by Figure 1.

Empirically, Figure 2 demonstrates this relationship for 35 European countries. When their at-risk-of-poverty rates are plotted against the indicators of income inequality, the relationship is clear.

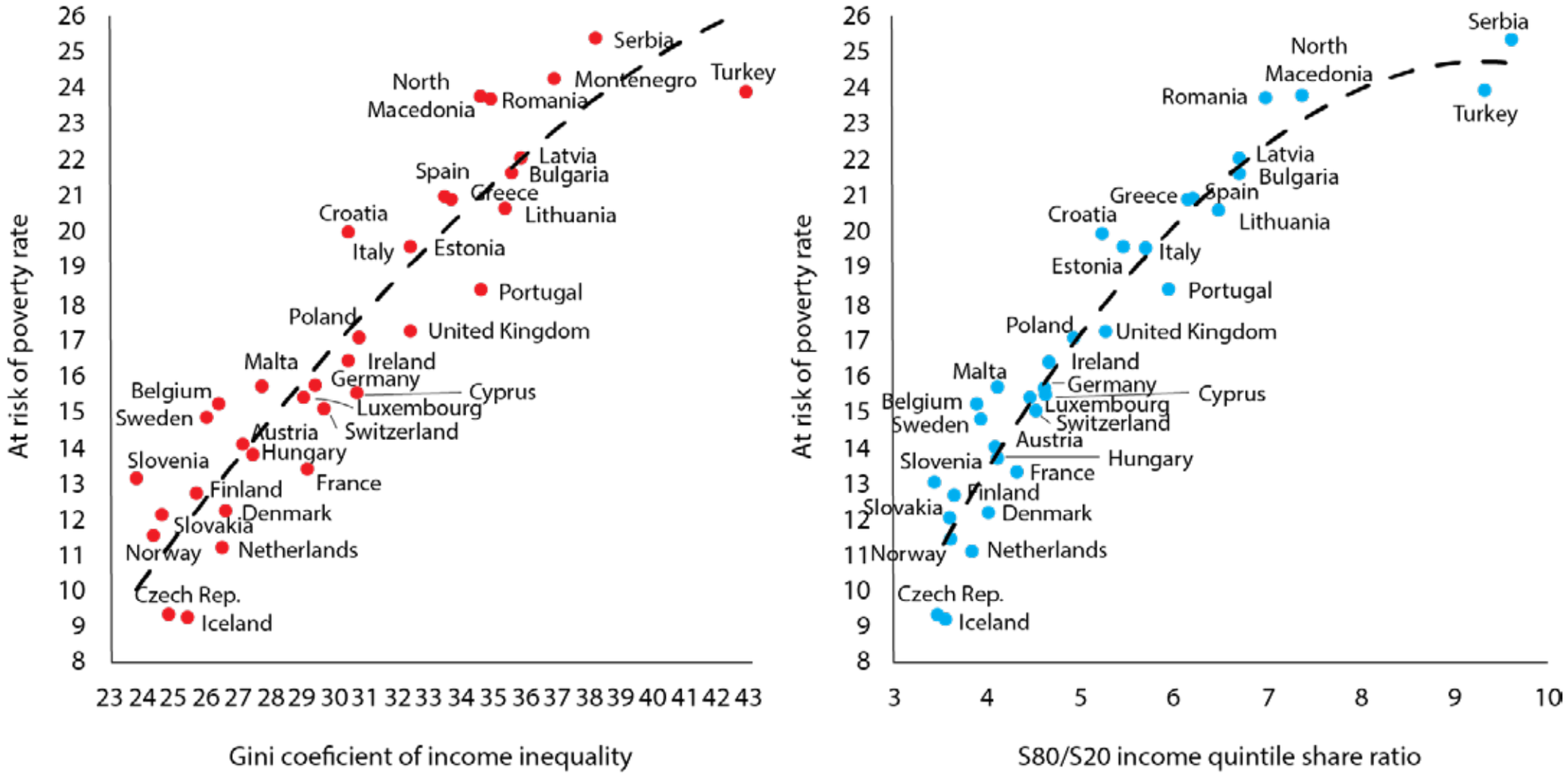
This relationship also holds within countries. The Gini coefficient and the 'at risk of poverty' rate moved in tandem in a number of countries. In contrast, the severe material deprivation rate (a useful available measure of poverty in the European context) changed in strikingly different ways in some countries, highlighting again that the 'at risk of poverty' rate is distinct from poverty developments.

Figure 1. The theoretical association between income inequality and the 'at risk of poverty' rate



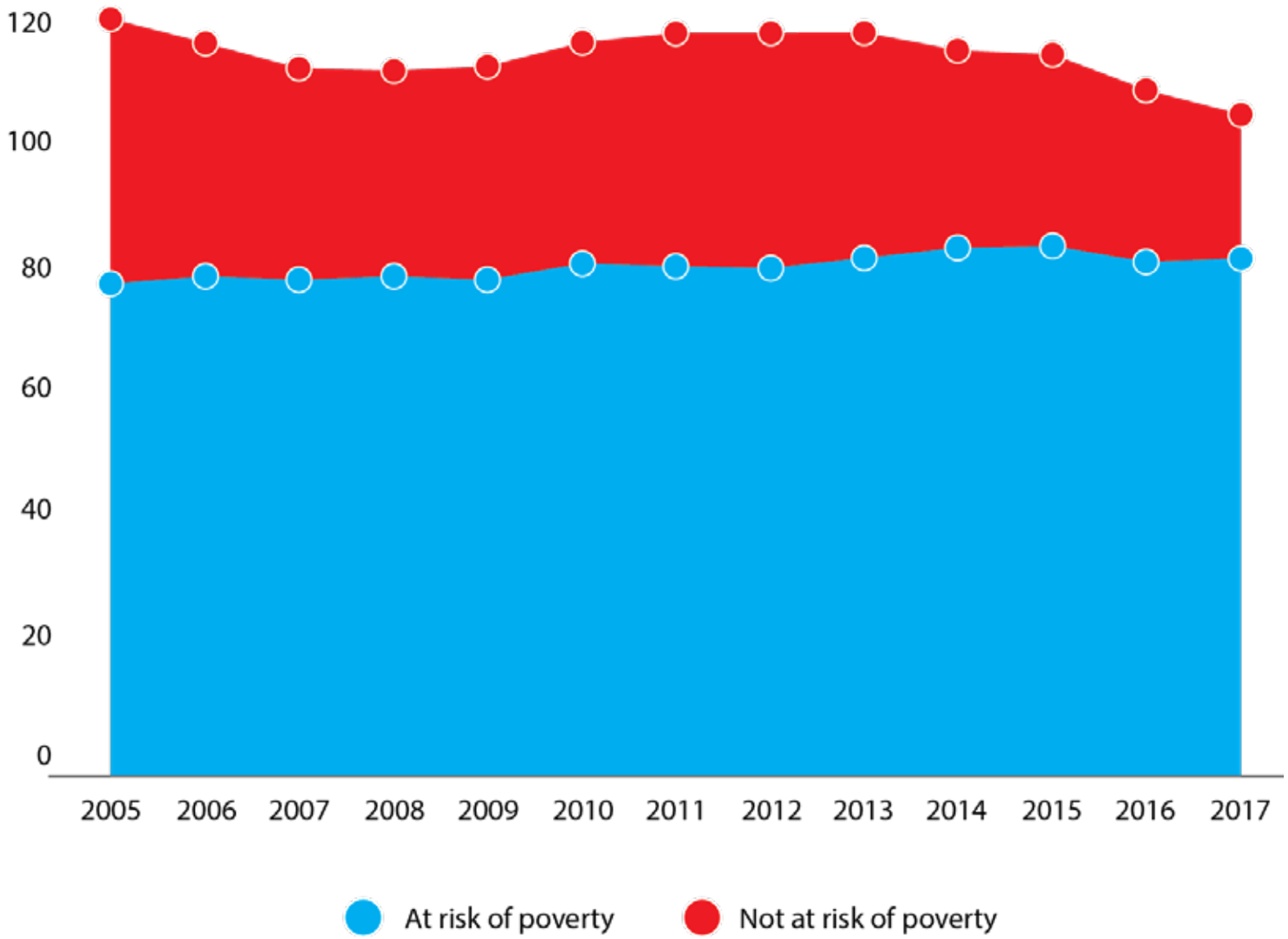
Source: Bruegel
Note: the 'at risk of poverty' rate is defined as the share of people with income below 60% of the national median income, multiplied by 100. The Gini coefficient is also multiplied by 100. The S80/S20 ratio is the ratio of total income received by the 20% of the population with the highest income (top quintile) to that received by the 20% of the population with the lowest income (lowest quintile). The shaded area indicates the range of the income inequality indicators of 35 countries included in the Eurostat dataset in 2005-2017. The income distribution is assumed to be characterised by the log-normal distribution.

Figure 2. The empirical association between income inequality and the 'at risk of poverty' rate



Source: Bruegel based on Eurostat's 'ilc_li02', 'ilc_di12' and 'ilc_di11' datasets.
Note: The at risk of poverty indicator is 'At risk of poverty rate (cut-off point: 60 percent of median equivalised income after social transfers)'. The Gini coefficient is the 'Gini coefficient of equivalised disposable income'. The S80/S20 income quintile share ratio is also calculated from equivalised disposable income.

Figure 3. Two main components of the 'at risk of poverty or social exclusion' indicator, million persons, first 27 EU members



Source: Bruegel based on Eurostat's 'ilc_peps01' and 'ilc_li02' datasets.
Note: I report the data for the year to which it refers, not for the year of the survey as Eurostat does. The first 27 EU members include the UK but not Croatia.

Therefore, the 'at risk of poverty' indicator does not measure poverty (meaning too poor to meet basic needs), but income inequality (meaning the extent to which income is distributed unevenly among a population).

At risk of poverty or social exclusion

Of course, *Europe 2020's* main measure of poverty is the 'at risk of poverty or social exclusion' indicator, which is broader than the 'at risk of poverty' indicator. It is combined with indicators of the number of people living in households with very low work intensity, and of the number of people classified as 'severely materially deprived', meaning they are unable to afford certain basic expenses.

Figure 3 breaks down this indicator into two components: those 'at risk of poverty' and those who are not, irrespective whether they are also severely materially deprived and/or living in a low work intensity household. The striking message of Figure 3 is that the number of people deemed 'at risk of poverty' is very stable in the EU as a whole. This sounds rather counterintuitive, as it would suggest that:

- There was no poverty reduction pre-crisis (2005-2008) in the initially rather poor central and eastern European countries, despite their very rapid economic growth;

- There was no poverty increase after 2008, when GDP contracted in all EU countries (but Poland) and unemployment increased, while wages fell significantly in some countries; and

- There was no poverty reduction in the post-2013 period when economic recovery took off, unemployment declined, and wages grew by double digit percentages annually in many central European countries.

This is so counterintuitive it cannot be true. Indeed, the Gini coefficient of income inequality barely shifted in the EU in the last decade, and so neither did the 'at risk of poverty' indicator. On average, for the first 27 EU countries, the Gini increased from 29.8 in 2007 to 30.0 in 2017, while the average share of people deemed 'at risk of poverty' increased from 16.2 percent in 2007 to 16.7 percent in 2017. In terms of number of people, the increase is 3.2 million from 2007-2017, as shown by Figure 3.

In fact, the other group on Figure 3 – people who are either classified as severely materially deprived and/or living in household with low work intensity, but are not 'at risk of poverty' – declined between 2005 and 2008, increased from 2008 to 2012, and declined again afterwards – in line with the developments I described above.

Hopefully, there is scope for further reduction in the number of low-work and high-deprivation people. But the 'at risk of poverty or social exclusion' indicator is dominated by the 'at risk of poverty' indicator, and thus unless we see a dramatic reduction in income inequality, the share of people judged as in poverty under *Europe 2020* will not change much.

Further problems

Unfortunately, there are other problems with the 'poverty' indicator. That there are enormous differences between national 'poverty' thresholds in the EU (ie. 60% of national median income). Adding up people with such different consumption levels, and expressing their total number as a share of the EU population, is pointless.

Moreover, to calculate the EU-wide 'at risk of poverty' statistics, Eurostat simply adds up the number of people below 60% of national median income in each country. But this calculation differs from counting the number of people in the whole EU who are below 60% of the median income in the whole EU.

The 'at risk of poverty' also suffers from theoretical weaknesses, as it violates four standard axioms for a poverty indicator, as set in the literature (see my article).

The use of the 'at risk of poverty' indicator in EU policy discussions

In EU policy circles, the 'at risk of poverty' indicator is typically used as an indicator measuring absolute poverty, which is inappropriate and confusing.

The expression 'poverty reduction' is very often referred to in connection with this indicator, but I did not find any mention in EU policy documents where the clear theoretical and robust empirical associations between the 'at risk of poverty' indicator and various indicators of income inequality were mentioned.

The European Commission's Social Protection & Social Inclusion website continues to state that *"the Europe 2020 strategy for smart, sustainable and inclusive growth sets targets to lift at least 20 million people out of poverty and social exclusion",* without defining poverty and highlighting the near equivalence of the poverty indicator and indicators of income inequality.

European Parliament resolutions (for example here) and even anti-poverty organisations have referred to 'poverty' when in fact they are speaking about the misleading at-risk-of-poverty indicator. Clearly, there is great confusion about the interpretation of the 'at risk of poverty' indicator.

A new indicator is needed to monitor poverty

The *Europe 2020* strategy expires this year and the European Commission and European Parliament should take the opportunity to scrap the misleading 'at risk of poverty' indicator and its many variants. The academic literature

provides ample suggestions of proper poverty indicators. The real risk in continuing to use the 'at risk of poverty' indicator is that those who are really poor in Europe are not monitored and are thereby forgotten. ■

Zsolt Darvas is a Senior Fellow at Bruegel

This article was first published on Bruegel