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Christine Lagarde says the euro area should complete financial union
Bruegel present a strategic agenda for the new European leadership
Mark Leonard et al. redefine Europe's economic sovereignty
THE GLOBAL TRADE PLATFORM

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A strategic agenda for the new EU leadership

Maria Demertzis, André Sapir and Guntram Wolff present a memo to the presidents of the European Commission, Council and Parliament, focussing on the most important economic questions at EU level

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You inherit a relatively healthy European economy, but you face three formidable challenges in the next five years. First, you must define Europe's place in an increasingly bipolar world driven by a geostrategic rivalry between the United States and China.

You should avoid protectionism and instead strengthen Europe's technological, financial and security capacities. You should continue to support multilateral institutions and stand ready to retaliate against trade aggression. Second, global warming is a reality and temperatures appear to be rising faster than forecast.

You need to impose higher prices on greenhouse gas emissions, guide a deep transformation of our economies, minimise the resulting social fallout, ensure border carbon adjustment and globalise the EU's decarbonisation. Third, you need to manage the economy and EU cohesion.

The main worry is a deep recession or even a new crisis. Guide European policymakers on the use of proactive fiscal policy, reform the governance of the euro area and address tax fraud and evasion.

State of affairs

First, the good news: you face a much more benign macroeconomic situation than when your predecessors assumed office five years ago. Then, the European Union was just emerging from the worst economic and financial crisis in its history. Economic growth was still very weak, unemployment was close to 12 percent in the euro area (and just above 10 percent in the EU), and the public debt-to-GDP ratio was above 90 percent.

Now, after five years of economic growth at an average of roughly 2 percent, unemployment is down to about 8 percent in the euro area (and less than 7 percent in the EU), and the debt-to-GDP ratio is approaching 80 percent.

However, the global landscape has shifted dramatically in the last few years. A G2-like world, characterised by a broad geopolitical confrontation between the United States and China, has become a reality. Five years ago, the extent to which Sino-US relations have deteriorated was not yet obvious, and it was not clear that the EU would have to define clearly its own way forward.

China's fast rise is a tremendous achievement. It has lifted millions out of poverty and China is increasingly becoming an engine of global innovation. But the Chinese economic and political model also poses a challenge to Europe and the West in general.

If the trade conflicts initiated by President Trump had been only about trade, the EU would have been well-placed to defend its interests

In some quarters, China's illiberal political model is even viewed as an alternative to our sometimes slow-acting liberal democracies. China is an important market and economic partner but also poses an economic challenge. Meanwhile, the US has become a less reliable partner than it was five years ago and some even doubt how strongly it will defend liberal democracy.

The last five years have also seen continued increases in global greenhouse gas emissions (Figure 1), despite the 2015 Paris Agreement. The frequency of extreme weather events has increased and the world has become warmer (IPCC, 2018).

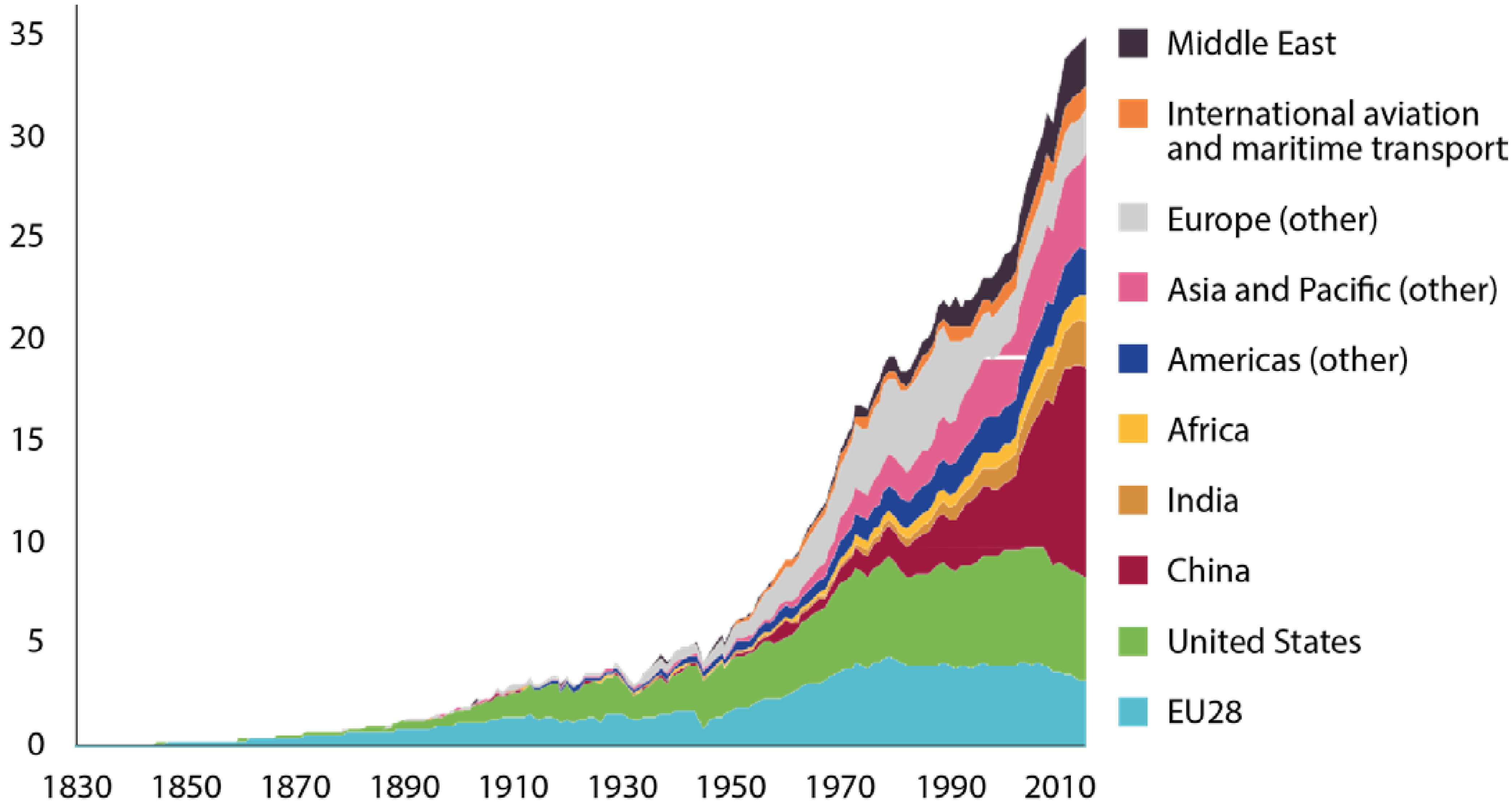
Increasingly, scientists point to positive feedback-loops where the increased temperature leads to further increases in global temperature[1]. In that light, the Paris goals might even be insufficient[2]. So far, the EU has not managed to reduce its greenhouse gas emissions convincingly despite the Paris Agreement being politically widely accepted.

It has not strengthened its policy framework necessary for a profound and deep transformation of our economy, which is simply not happening fast enough. Biodiversity was not a priority for your predecessors and has been allowed to deteriorate in Europe[3].

Though EU employment has increased substantially and income inequality remains less pronounced than anywhere else in the world, inequality and exclusion remain important concerns. Youth unemployment is still worryingly high in some EU countries, resulting in the social disenchantment of an entire generation.

More broadly, one worrying tendency in many EU countries has been cuts to the top tax rates levied on companies, wealth, inheritance and high incomes[4]. Low progressivity and a high tax burden on the working middle class to

Figure 1. Annual CO_2 emissions by world region



Source: Carbon Dioxide Information Analysis Center. Note: Annual CO_2 emissions measured in billion tonnes per year. Emissions data have been converted from units of carbon to CO_2 using a conversion factor of 3.67. Regions denoted 'other' are given as regional totals minus emissions from the EU28, USA, China and India.

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fund Europe's social market economy nurture a sense of injustice in society. A key challenge is to reconcile equity and efficiency[5].

Institutionally, perhaps the most significant change of the last five years has been the transformation of the Commission, traditionally viewed as the guardian of the treaties, into an explicitly political Commission, led by a strong president who claimed an electoral mandate to lead. This controversial change of orientation has allowed the Commission president to a greater extent than before to exercise leadership and impose priorities on the entire Commission.

The centralisation of communication and political decision making has been seen by Commission staff as a major change compared to the previous Commission, allowing the Commission to set the EU's agenda (Kassim and Connolly, 2018). This institutional change is an important modification of the way the EU works.

The EU and national institutions are confronted with a lack of trust. The situation for the EU has improved in the last five years, with trust increasing and support for the EU higher among the young than the population overall, but the number of citizens distrusting the EU still exceeds those who trust the EU. This is particularly visible in some southern European countries[6]. Certainly one of the main reasons for this is the lack of convergence and the severe recessions that parts of the south of Europe experienced.

Such lack of convergence and trust risks undermining the sustainability of the euro area and the EU. Furthermore, traditional political parties are losing ground, resulting in a more pluralist political system. Elections also confirm certain established cleavages of voter preferences across countries, which might make compromises more difficult in future.

The significantly higher turnout in the 2019 European elections is a sign of a renewed demand from citizens that Europe should deliver on the big topics of our times. Citizens want the EU to prioritise maintaining peace, creating jobs and tackling climate change[7].

More than three quarters of citizens consider the fight against terrorism, tackling unemployment and protection of the environment as the three key priorities for the EU, but the first two priorities have declined in importance (Eurobarometer, 2018).

Moreover, citizens are broadly divided on whether the EU should wait until all countries are ready before proceeding with new initiatives, or whether some countries should move ahead.

Citizens, however, are convinced that when it comes to the big international questions, such as dealing with China, Russia and the United States under President Trump, the EU should speak with one voice.

Challenges

Three main challenges await you, coinciding with the areas that citizens increasingly believe the EU should deliver on:

(1) the EU's capacity to establish itself as a stronger and more independent global player;

(2) a climate and environmental strategy that delivers;

(3) the EU's capacity to increase cohesion, boost employment and react to a deterioration in the economic situation.

Europe's place in the world

The first, and perhaps defining, challenge of your presidencies will be to ensure that Europe still has a place in a world which is rapidly shaping into a bipolar system dominated by China and the United States.

Citizens clearly want the EU to act on issues of global importance and understand that the member states in which they live, even the biggest, cannot act alone. Reinforcing the EU's capacity to be a global force is therefore an opportunity to demonstrate the EU's significant added value.

By some key economic measures, in particular GDP and trade, the EU is on par with China and the United States, and far bigger than any other player. Its single voice on trade and standards commands respect in global bodies such as the World Trade Organization (WTO), and bilaterally with partners, including China and the US.

If the trade conflicts initiated by President Trump had been conflicts about trade only, the EU would have been relatively well placed to defend its commercial interests. But the reality is that these trade battles are part of a geopolitical rivalry between China and the United States, and when it comes to geopolitics, the EU is ill-equipped.

The EU's weakness stems in part from its lack of a defence capability. Without the US participating in Europe's defence, European countries would be vulnerable to foreign aggression.

Europe's weakness in this area is also the result of its lack of strength in some key technologies, including digital hardware and software systems that are vital for security. A number of globally-important networks (such as financial or data networks) have developed in an asymmetric way, giving the states with physical and legal jurisdiction over them the ability to extract information and leverage power.

These networks tend to have central nodes of influence in the US and increasingly in China – while the EU still has an institutional weakness in terms of exercising power over those networks it can influence (Farrell and Newman, 2019).

The EU has much to lose from the emergence of a bipolar world, and from the rivalry between China and the United States. The threat is to both the EU's economic interests and its political values. The EU is closely intertwined with the United States and China, which are its two main trade and investment partners. A Sino-US trade war is sure, therefore, to have significant negative consequences for the EU economy.

But the bigger consequences are political. The two rival powers will aim to lure the EU into their camps because of the EU's economic assets, and in particular its large market. The EU obviously wants to preserve its values of democracy and the rule of law, social justice and multilateralism, and given its history and values, is clearly politically much closer to the US than to China.

However, the rejection of multilateralism by the Trump administration has made the EU uncomfortable with the US position, and has opened the door to closer political relations with China, which has assumed the mantle of multilateralism.

It would be a nightmare scenario for the EU if it had to choose between liberal democracy and the United States on one hand, and multilateralism and China on the other. In both cases, the EU might have to compromise on social justice, which is practiced neither by China nor by the United States.

To avoid compromising on our political values, you need to succeed in escaping the bipolar scenario. You should be under no illusion. Unfortunately, the bipolar scenario is by far the most likely, but it is also the most dangerous for Europe, and probably for other parts of the world which share our values. You should aim not only to strengthen Europe but also to support all multilateral frameworks that can help offset a bipolar scenario.

Important further elements of Europe's strategy in defining its place in the world are the relationship with our neighbouring continent, Africa, and the EU's strategy on migration. Both topics are clearly important priorities for EU citizens.

Climate and the environment

When it comes to climate change and the environment, your challenge will be to overcome vested interests, and manage the social and economic fallout of a truly transformative agenda. Citizens want you to address this pressing challenge.

At the same time, they aren't likely to accept the consequences of strong climate action easily. The yellow-vests movement in France serves as a powerful reminder that addressing the social consequences of climate policies needs to be an integral part of a successful climate strategy.

Vested interests will want to prevent you from addressing climate change. But you should be clear: climate change is a dramatic reality for humanity. Industrial economies have been leading contributors in the past and have a moral obligation to address their emissions head-on.

Moreover, by doing so, they produce a template that others can follow and that in itself can also be a business opportunity. Failing to address the challenge head-on would be inacceptable to citizens, and could also mean that the EU loses out on key technological developments – such as electro-mobility – that will shape the future.

Meanwhile, a powerful lobby will try to prevent you fundamentally changing the EU's common agricultural policy – which you must do if you want to restore lost biodiversity in Europe (Pe'er *et al*, 2014) and free financial resources for more forward-looking expenses.

Growth and convergence

The EU's long-term prosperity and sustainability depends on innovation, growth and convergence. Those countries with a serious productivity growth challenge typically have comparatively weak institutions and perform less well in education, innovation and research.

But without more growth in those countries, debt dynamics will be unfavourable. Your challenge is to find ways to contribute to convergence and growth, while most of the levers to do so are at member-state level.

The challenge could be compounded by deterioration in the economic situation and even the re-emergence of crisis. A recession would increase unemployment, which even now after many years of recovery, remains a key concern for citizens.

Beyond the macroeconomic ups and downs, you could face a sovereign debt crisis in a euro area country that would require emergency summits and assistance. But you have relatively few instruments under your control to deal decisively with such a situation.

There is no euro area budget to use for countercyclical fiscal policy and the current negotiations are unlikely to lead to a budget of macroeconomic relevance. The main truly European institution that could respond, the European Central Bank, would have to find new tools because of low interest rates and the political limits to further bond purchases. Meanwhile, the main euro area financial-assistance programmes are in the hands of an inter-governmental institution, the European Stability Mechanism, and the member states

You must aim to complete the euro area's governance set-up to make it more robust. This is all the more important as a badly functioning euro area also has long-term social consequences.

Policy recommendations

Europe's place in the world

When it comes to strengthening Europe's position in the world, you will have to design and drive a transformative agenda for Europe. In trade policy, your task is relatively well-defined: you need to vigorously defend the multilateral trading system, including by fostering its reform, while being ready to retaliate against protectionist measures.

But to be able to act and respond on a more equal footing you need to reduce dependence on China and the United States in some key strategic domains while strengthening the EU's own capabilities. This will require tackling three issues:

The EU's capacity to innovate and remain a technological leader: you should strengthen investment in R&D, education and improve conditions for innovation and conditions that encourage key players in networks to locate in the EU.

For example, the platform economy is dominated by the American GAFA (Google, Apple, Facebook and Amazon), and increasingly by the Chinese BATX (Baidu, Alibaba, Tencent and Xiami). Technological capacity influences the structure of global networks, which in turn is important for the projection of power[8].

But if the EU cannot trust the US to not turn its network hegemony against it, it needs to revisit its strategy and aim to attract key network nodes and hubs and to create institutional capacity to deal with those hubs.

The EU does not lack large digital platform companies because of the EU's competition policy. It lacks such companies because of a fragmented market, including a fragmented market for risk capital, and because of lack of public infrastructure, meaning that, all too often, innovative young companies go to the US to grow.

You should continue the work that your predecessors started to deepen and complete the single market, strengthening the digital single market in particular, exploiting data-privacy rights and developing a European approach to the digital age with the citizens at the centre.

The effectiveness of the EU's competition policy is globally recognised. Relaxing current policies to encourage the creation of large European champions might lead to higher domestic prices, greater inequality and rather limited benefits in terms of innovation and growth[9].

By contrast, tough competition typically spurs innovation. While we are not in favour of subsidising specific large firms, there might be a case for supporting them when they compete in third countries with subsidised firms from other jurisdictions. Ideally, however, this issue should be addressed through improvements to, and better implementation of, the WTO rules on subsidisation. There might also be a case for revising the definition of dynamic markets.

The EU should have an industrial policy that goes beyond the single market strategy. A deeper single market is critical for the EU's economic strength. But a clear view of which sectors will drive future innovation is also necessary given the targeted Chinese approach (European Commission, 2019).

The EU needs to develop a methodology to identify key sectors of relevance and go beyond the current ad-hoc approach to supporting specific industries. In the US, three federal institutions (the Defense Advanced Research Projects Agency, National Institutes of Health and National Science Foundation) play crucial roles in pushing forward the frontier of knowledge, and enabling private-sector R&D in key areas.

Similarly, the EU should use the EU budget more than today (roughly €10 billion in 2018) to boost digital hardware and software systems, including artificial intelligence, which are critical for autonomy and even security.

The second area where you need to act to boost the EU's role in the global economy is the euro's role as a global currency. The euro is already a global currency but its role is below potential on account of the incomplete economic architecture of Economic and Monetary Union. To change that, you will need to make concrete progress on EU governance. We will return to this in our third set of recommendations.

Third, you need to increase Europe's capacity to safeguard its own security. This is not a question of a 'European army'. Instead it is about being able to defend EU territory by collaborating in case of aggression and to intervene in cyberwar, intelligence operations and small rescue operations. Investments in the range of €100 billion to €300 billion could be needed if Europe wants to have sufficient defence capabilities without US involvement (ISIS, 2019).

The EU should remain a peace project, capable of defending itself but without any ambition to project force in military adventures in third countries[10].

This gives rise to important organisational questions that you need to answer. How would EU countries support each other in case of military aggression? Should the EU create a 'security council' which includes even some non-

EU countries (potentially the UK) and is capable of taking military decisions outside of NATO? How can the various weapon systems of national armies be made compatible?

Can the Permanent Structured Cooperation (PESCO) process be further advanced and procurement be unified? Can EU countries form joint capabilities to counter cyberattacks and what capacity does the EU have to deal with targeted fake-news campaigns that undermine our democracies? You will need to exercise leadership in these domains but not pursue unrealistic and even undesirable goals.

The question of defence is important because, unfortunately, the EU cannot fully chart its own course in trade, technology and investment policies without ensuring its own security. But, as you know, this view is not accepted equally by different EU countries and several countries will not be ready to question reliance on NATO as the main defence cooperation agreement. In our view, you will therefore have to accept a certain degree of multi-speed in this domain[11].

Europe's geopolitical weakness is partly the result of its lack of strength in some key technologies; leverage over networks matters

Finally, we consider it important that you strengthen the EU's Africa policy. Africa is connected to Europe in many ways. As our direct neighbour, its economic health and political stability are core EU interests. This topic cuts across trade, investment, development, climate, energy and migration policies.

You will need to further develop your migration strategy, which is still a great concern for many citizens and goes beyond the relationships with African countries. This strategy cannot be narrowly focused only on illegal migration but needs to be comprehensive and cover also legal migration and its implications for the internal functioning of the single market.

Climate and the environment

The EU is already politically committed to reducing greenhouse gas emissions in line with the Paris Agreement. But progress is limited and certain sectors lag behind in their efforts to reduce their impacts on the climate (in particular the transport sector; see Tagliapietra and Zachmann, 2018). Coal phase out is too slow in several countries.

Putting a price on greenhouse gas emissions in all sectors is indispensable to reduce emissions. You will need to ensure that the EU carbon price becomes high enough to lead to more rapid and significant changes in behaviour. Other sectors not currently participating in the EU emissions trading system will also need to be covered, possibly with a tax.

Industrial policy can support decarbonisation and you should mobilise the EU's instruments in that regard. Regulation on sustainable finance is a further lever the EU has to manage climate risks.

Your climate strategy will need to address distributional concerns or risk failing politically (Zachmann *et al*, 2019). To this end, the carbon tax proceeds could be redistributed to reduce the burden on low-income households[12].

Don't underestimate how transformative serious climate action will be for the entire economic system. The rising carbon price and the carbon tax should be accompanied by public funding for innovation to accelerate the emergence of new technologies, which will create new activities and also cut the cost of clean energy.

It is crucial to understand the importance of digitalisation for the green revolution and support it with public policy. Lowering the cost of clean energy is all the more important because key industries depend on access to affordable energy and you need them to support the transformation.

The EU's climate strategy also needs to have a global perspective. Global greenhouse gas emissions continue to rise quite dramatically, in particular driven by emerging economies. We consider three policies as central. First, the EU should continue and redouble its efforts to support emerging economies in basing their economic models on green growth.

Financial and technological support for green infrastructure is good climate policy[13] and it can also create economic opportunities for leading green EU companies. Second, the EU, like other industrialised economies, has managed to reduce emissions in production, but not as much in consumption of greenhouse gases. Some form of carbon border adjustment will be necessary to tackle this[14].

Finally, given that global emissions continue to grow so rap- idly, scientists increasingly talk of the Anthropocene – a geological period in which human activity is the dominant force shaping the Earth's ecosystem. Given that the earth's climate might be increasingly influenced by self-reinforcing feedback loops, we consider it essential to study how to manage the fallout from global warming and how to reduce emissions by other means[15]. You should exercise global leadership on this.

Growth and convergence

You should support the improvement of the quality of institutions, which varies significantly in different EU countries. Governance structures and institutional quality are known to go hand-in-hand with good and sustainable economic outcomes (Acemoglu and Robinson, 2012; Acemoglu *et al*, 2005)[16].

Even though improving institutional quality is, above all, a job for national politics, you could and should support such endeavours more than currently. You should use the EU budget as a tool to support institutional reform programmes and review the EU's approach to promoting good governance (Mungiu-Pippidi, 2019).

One of the first challenges you will face when taking office is to complete the negotiations on the multiannual financial framework. In our view, you should aim to significantly reduce the share of spending that goes to the common agricultural policy, while boosting spending on innovation and research.

The EU budget should finance projects with true European added value, such as the European space programme and European infrastructure and innovation policy. Structural funds are probably your main instrument to boost growth in the parts of Europe that have a productivity problem, but their effectiveness needs to be increased (Darvas *et al*, 2019).

Meanwhile, the common agricultural policy should be changed so it focuses on increasing the sustainability of our food production[17], increasing biodiversity[18] and ensuring the best results in terms of farmers' incomes (Ciaian *et al*, 2015). In short, it should be a basic goal to use the budget better and create space for spending on new priorities such as migration policy and border protection.

You should devote significant political capital to combatting tax evasion and fraud and support a fairer distribution of the tax burden. Social and tax policies are national policies, but the single market makes it easier for large companies and rich individuals to reduce their effective taxation.

An increasing tax burden on the working middle class is incompatible with the promises of Europe's social market economy. The EU growth strategy should also build on useful EU instruments such as the European Social Fund and the European Pillar of Social Rights.

You should also contribute to a better management of macroeconomic policy. In case of an economic downturn, you should support the relevant authorities in responding rapidly. With interest rates at the zero lower-bound, monetary policy will have little to contribute to stem the next downturn.

Your role as Commission President, together with your responsible Commissioners, will be to raise awareness about the importance of national fiscal policies to stabilise the EU economy. You will have to identify risks to the macroeconomy early on and organise a coordinated fiscal response.

On the fiscal rules, we believe that rigid application might lead to faulty recommendations. But at the same time, a politically partisan interpretation of rules would undermine your institution as an independent and neutral broker of compromises.

In our view, you should therefore not only propose changes to the fiscal rules to increase their usefulness for fiscal macro-management. You should also clearly explain what you think should be the right fiscal policy in any given circumstance – thereby increasing political buy-in. A reform of the European Semester with more convincing communication than currently is much needed.

In this respect sovereign spreads, while useful in enforcing fiscal discipline, can also hamper the ability of some countries to use fiscal policy when they need it most and hamper the transmission of monetary policy.

Your role will be to communicate wisely and broker compromises among key players. You should support the European Central Bank's outright monetary transactions programme and the European Stability Mechanism as a crucial institution for the stability of the euro area.

Last it is clear that you should continue to strengthen the architecture of the euro area in order to improve its capacity to deliver better performance in terms of growth and cohesion. Failing to do so risks leaving the system more fragile than it should be. To this end, aim to complete banking union.

Reducing the exposure of banks to national sovereign debt is necessary for your attempt to Europeanise the banking system and introduce a European deposit insurance scheme (EDIS; see Wolff, 2016). The problem you face is that the EU has debated this strategy for the last five years without much action.

Resistance comes from a fear that EDIS would be a transfer to weaker countries while resistance to sovereign bond limits remains high because of a fear that funding might become more difficult or even impossible for the fiscally weaker countries. The result is that the unstable status quo has prevailed. You will have to look for innovative ideas to break that deadlock[19].

It is difficult if not impossible to implement banking union without at least some additional instruments to support governments' fiscal policies. You should also look for innovative ways to create deep and integrated capital markets, as current legislative proposals have not been enough[20].

How can you best secure the support of ministers in promoting this project further? Finally, do not abandon the idea of creating a safe asset; instead weigh carefully how to do it in a way that does not distribute risk unfairly and counterproductively and prepare a template that could be used in the next crisis.

Institutional issues

In order to deliver an ambitious strategy, you will need to tackle three important institutional issues:

- The governance of the EU and Europe more generally;
- The role of the Commission and its relationship with the European Council and the European Parliament;
- The internal organisation of the Commission.

As far as EU governance is concerned, the first issue to consider is what to make of the motto *"unity in diversity."* The EU is a unique construction based on a diverse set of countries with a relatively low degree of centralisation of decision making. This diversity and decentralisation sets us apart from the United States and China. The coming years will be decisive on whether the EU can preserve and succeed with this unique model.

At the 9 May 2019 summit in Sibiu, European leaders reaffirmed their *"belief that united, we are stronger in this increasingly unsettled and challenging world."*[21]. The method of sustaining unity has been effective in maintaining sanctions against Russia and also keeping a united front in the Brexit negotiations.

The challenge is to reconcile the pledge of unity with the reality of diversity. The differences between the 27 (or 28, should the UK decide to remain in the EU) member states make it sometimes difficult, or even impossible to make progress in some areas. Unity can come at the expense of speed and depth. Unanimity can also lead to a lack of experimentation and flexibility.

There are two ways to deal with this issue:

- First, one can move to majority decision making at the level of 27 or 28. This should be possible if the union increasingly thinks that in the long-term, the pros outweigh the cons. However, the option of moving to qualified majority voting on foreign-policy decisions has already been rejected several times.

- Second, one could advance in smaller groups on specific issues. The EU treaties allow for smaller groups of countries to advance more speedily with specific projects. We consider it important not to exclude some type of differentiation.

  Any move to advance in certain groupings should be based on the core European institutional structure: the Commission and the European Parliament. It should always be clear that groups of EU countries are open to others that wish to join. Within groups, it is again possible to see unanimous decision making or majority decision making.

While we prefer greater use of majority voting at EU level, we believe you should not exclude advancing in smaller groups on some key issues where no unanimity is possible. In taxation for example, by moving forward in a smaller group, you would also increase the pressure for all to advance. Differentiation might be the only politically feasible way to deepen integration on some of these contentious topics.

The question of multispeed advancement also concerns non-EU countries. The UK and the EU's neighbourhood are of paramount importance for the EU's position in the world. Without a stable neighbourhood, the EU's influence in the world will decline. And the UK is and should remain an important ally in global forums such as the G7 or the United Nations.

Your predecessors have been busy managing Brexit, but to date, no Brexit deal has been ratified. One of your main challenges will be to define the relationship with the UK and the EU neighbours more broadly, including with Turkey and the Western Balkans.

This indicates a need to reflect on how to arrange multiple levels of integration and cooperation in a way that does not create unnecessary political tensions. You should not shy away from exploring new models of cooperation or limit yourself only to existing models.

The second issue is the relationship between your three institutions. Given the increased participation rate in the 2019 European elections, we believe that the European Parliament's role in deciding on key strategic issues will and should increase[22]. At the same time, the European Council also sets out the main strategic guide- lines for the EU's future. All three of you will have to work together to advance this strategic agenda.

One of the priority issues in the relationship between the three institutions will be the interpretation of the political nature of the European Commission. One of the most important institutional changes of the last Commission was the explicit political interpretation of the mandate of Commission president. This approach has yielded results.

For example, Jean-Claude Juncker prioritised ending austerity and interpreted the fiscal rules flexibly, which we consider to be one reason for the improving economic situation of the last few years. The Commission President has also exercised political leadership in the context of the Greek crisis and has been a strong political voice in the EU-US relationship.

Jean-Claude Juncker also exercised leadership and rejected some possible nominations from member states for the Commission College. But this approach has also led to accusations that the interpretation of fiscal rules was not only done 'flexibly' but also in a partisan way – reducing trust in the Commission among some countries as a neutral arbiter.

What does a 'political' Commission mean? The Commission is obviously a political body, since many of the thousands of decisions it takes, as guardian of the treaties or initiator of legislation, are based on political value judgements.

In our view, the Commission should strive to interpret its role of guardian of the treaties, ie. when it has to interpret the treaty and the rules, in an even-handed and non-partisan way.

The EU should not interpret the rules more strictly for countries that are run by a government from a different political party, nor should countries be treated differently for reasons unrelated to the issue at hand.

Otherwise, the Commission would no longer be credible as a neutral institution at the service of the union.

Conversely, this also means that the Commission should devote sufficient resources and tools to monitoring and enforcement of the application of the treaty and rules by member states. The EU needs to strongly uphold the core principles of the union: the rule of law and the defence of core EU values.

Finally, as the nominated Commission President, you should fully use your powers to reject the nomination of candidate commissioners who do not support key European values. Those candidates would also be rejected by the European Parliament and the Commission President has a duty to anticipate that and to ensure a strong college.

When it comes to proposing or updating legislation, we consider a party-political interpretation of the role of the Commission as legitimate.

Once the Commission takes office, one of your first tasks as Commission President, will be to organise the College. Here, much will depend on your managerial approach. You might prefer a more hierarchical structure with vice presidents or a more network-like structure.

We consider it fundamental that you ensure the strong collaboration of commissioners responsible for a number of related areas – which could be done in clusters or hierarchies. The key areas where we see the need for close collaboration are:

- European economic sovereignty
- Sustainability
- Growth, industrial policy, innovation and the relationship with competition policy
- Migration, asylum, border protection, Schengen, internal security

An important prerogative of the Commission President is to define the mandate of the commissioners. The outgoing Commission president gave more detailed work programmes to his commissioners than any of his predecessors.

We think this is a useful way of leading the Commission and is also a good way to construct a coherent programme in line with the priorities of the various parties that support you in the European Parliament.

Europe faces major challenges, it needs an ambitious agenda and the three of you need to work together and with leaders in Europe and the world to deliver on this ambitious agenda. ■

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Endnotes

1. For example, by releasing methane currently stored in permafrost. Methane is a more powerful greenhouse gas than carbon dioxide. Scientists debate how strong the release of methane currently is; see for example Saunois et al (2016). Knoblauch et al (2018) points to the relevance of thawing permafrost for methane release.

2. See Voosen (2019) for a recent summary pointing out the more significant increase in global temperature.

3. For detailed reports, see United Nations (2019) and Intergovernmental Science- Policy Platform on Biodiversity and Ecosystem Services (2018).

4. And despite a rising share of national income going to capital income, the tax revenue from taxing capital income seems to be a rather stable percentage of overall revenue.

5. See Brys et al (2016) for proposals.

6. Citizens in southern European countries, however, tend to trust the EU more than their national authorities. In northern Europe, national authorities tend to be trusted more than the EU. See Eurobarometer data as reported in Demertzis et al (2019).

7. Survey conducted for Friends of Europe think tank (2019). Stopping climate change, ensuring citizen rights, managing migration, securing peace, fighting terrorism and taming globalisation are mentioned among the top issues that citizens want the EU to deliver on; see De Vries and Hoffmann (2019). Compared to the early 1990s, when Europeans were split 50-50 on the issue of defence, the share of people who think defence should become an area of joint decision-making was more than 70 percent in 2018 (Eurobarometer).

8. The EU has relied on the US lead when it comes to, for example, intelligence gathering.

9. There is a separate discussion about the screening of foreign direct investment to protect strategic sectors and key public infrastructure. While these measures reduce competition and the free flow of capital, they are warranted if there are clear geostrategic concerns.

10. We consider it unlikely and undesirable that the EU will form a political union that could legitimise and decide on such actions. Here we disagree with, for example, Bildt (2019).

11. For example, we could imagine France, Germany and the Benelux increasing collaboration or perhaps even creating a European intelligence agency. That would be an important step towards reducing dependence on US intelligence.

12. Simple models for such a scheme have been designed, see for example the carbon dividend plan from the Climate Leadership Council (2017).

13. See https://ec.europa.eu/clima/policies/international/finance_en for a summary of the EU's international climate finance commitments. Many emerging economies have made their support for the Paris Agreement conditional on financial support. See also Wolff and Zachmann (2015)

14. See Horn and Sapir (2013) for an early discussion on some key ideas how to do so.

15. Research is needed on how to increase carbon sequestration through natural means, other carbon capture

technologies and on what geoengineering would imply.
16. Demertzis and Gonzalves Raposo (2018) provided a summary of six World Bank governance indicators for all EU countries since 1996 and argued that the EU needs to increase its monitoring of institutional quality.
17. Different initiatives exist that propose better ways forward. See for example International Panel of Experts on Sustainable Food Systems (2019).
18. See, for example, Food and Agriculture Organisation of the United Nations (2019).
19. You might want to consider introducing a European-level deposit insurance scheme with lower coverage as a base, to be supplemented by the current national schemes. The lower European level would still cover the vast majority of deposits and would send a strong signal to EU consumers, without being seen as a scheme for redistribution.
20. In Demertzis et al (2019), we proposed looking into a 28th regime post-Brexit for segments of the capital markets, and the use of digital technologies to integrate capital markets.
21. To this effect, they made a number of commitments, including that "We will defend one Europe - from East to West, from North to South…There is no place for divisions that work against our collective interest" (European Council, 2019).
22. Currently, much of the legislative impetus comes from the European Council, which asks the Commission to make proposals to the two co-legislators, the Council and the Parliament. Several Spitzenkandidaten have proposed that the European Parliament should also be able to ask the Commission to make legislative proposals. We support this idea, but with two caveats. First, all legislative proposals made by the European Commission, regardless of their origin (the Commission itself, the European Council, or the Parliament), should be in line with an overall work programme of the Commission. Second, requests by the European Parliament should be in areas in which the parliament is a co-legislator, and should have the support of a majority of its members.

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Greening monetary policy

The EU is committed to a low-carbon economy. Dirk Schoenmaker believes that the transition could be accelerated by tweaking the Eurosystem's allocation of capital

HERMES AVIATION CONSULTING

The ECB's market-neutral approach to monetary policy undermines the general aim of the EU to achieve a low-carbon economy. The column argues that steering the allocation of the Eurosystem's assets and collateral towards low-carbon sectors would reduce the cost of capital for these sectors relative to high-carbon sectors. A modest titling approach could accelerate a transition to a low-carbon economy, and could be implemented without interfering with the priority of price stability.

Central banks traditionally take a long-term perspective on economic and financial developments. Through monetary policy they play an important role in the economy, and their mandate to ensure financial stability means they have an important role in the financial system too.

As part of this commitment, central banks have begun to examine the impact of climate-related risks on the stability of the financial system (Carney 2015). In monetary interventions, central banks have a long-standing policy of market neutrality, but there is evidence that the market has a bias towards carbon-intensive companies, and so monetary policy cannot be climate neutral (Matikainen *et al*. 2017). Doing nothing to meet this challenge is a decision that undermines the general policy of the EU to achieve a low-carbon economy.

In a recent paper (Schoenmaker 2019), I propose steering the allocation of the Eurosystem's assets and collateral towards low-carbon sectors, which would reduce the cost of capital for these sectors relative to high-carbon sectors. A modest tilting approach could reduce carbon emissions in their portfolio by 44% and lower the cost of capital of low-carbon companies by four basis points. This can be done without interfering with the transmission mechanism of monetary policy. Price stability, the primary objective, should remain the priority of the Eurosystem.

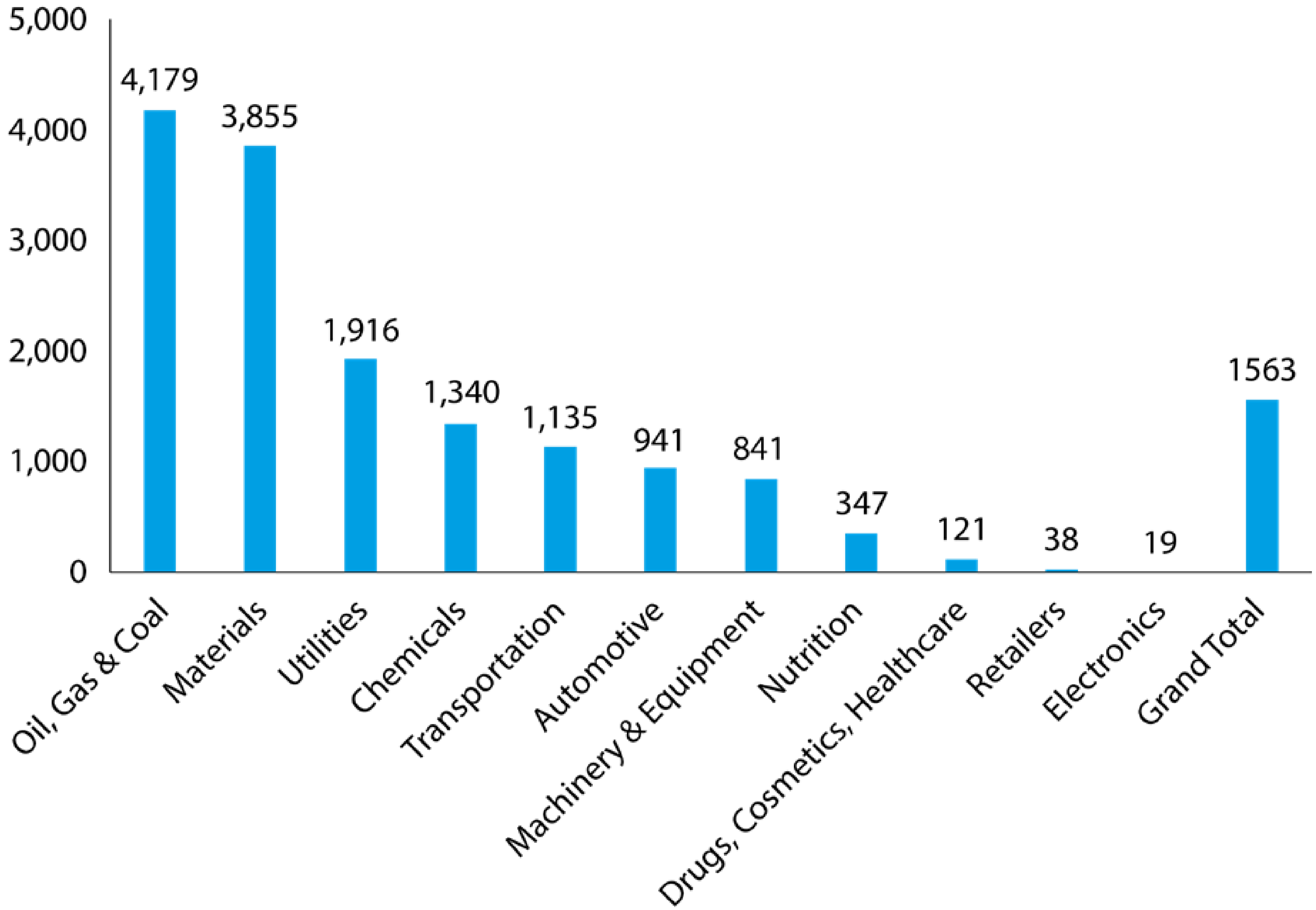
Carbon-intensive assets

Carbon-intensive companies – such as fossil-fuel companies, utilities, car manufacturers and airlines – are typically capital-intensive. Market indices for equities and corporate bonds are therefore overweight in high-carbon assets. Figure 1 summarises the average carbon intensity, defined as carbon emissions divided by sales, of industrial sectors in Europe.

As we might expect, the oil, gas, and coal sector has the highest carbon intensity followed by the materials sector (metal producers and construction), utilities, chemicals, transportation (airlines), and automotive (carmakers). The lopsided distribution of carbon intensity shows that carbon emissions are concentrated in a few sectors.

A low-carbon allocation policy in the Eurosystem's asset and collateral framework would therefore contribute to the EU's policy of accelerating the transition to a low-carbon economy

Figure 1. Average carbon intensity by industry (emissions in tonnes of CO_2 divided by sales in millions of €)



Note: Scope 1, 2 and 3 emissions are included for the 60 largest corporations in the euro area.
Source: Schoenmaker (2019).

In its monetary policy, the ECB – like any other central bank – follows a market-neutral approach in order to avoid market distortions. This means that it buys a proportion of the available corporate bonds in the market. This market-neutral approach leads to the Eurosystem's private-sector asset and collateral base being relatively carbon-intensive too (Matikainen *et al*. 2017).

Investment in high-carbon companies reinforces the long-term lock-in of carbon in production processes and infrastructure. We can conclude that the ECB's market-neutral approach undermines the broader policy of the EU to achieve a low-carbon economy.

Now that central banks have started to examine the impact of climate-related risks on the stability of the financial system (Carney 2015). Why not address the carbon intensity of assets and collateral in central banks' monetary policy operations as well?

Legal mandate

First, the legal mandate of central banks must allow the 'greening' of monetary policy. The primary responsibility of central banks is to maintain price stability, with a secondary responsibility to support economic growth. Interestingly, the EU applies a broad definition of economic growth. Article 3(3) of the Treaty on European Union says that:

> *"The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability … and a high level of protection and improvement of the quality of the environment."*

This broad definition of sustainable economic growth could provide a legal basis for greening monetary policy.

The ECB can only pursue its secondary objectives as long as they do not conflict with its first objective. The proposed tilting approach would not lead to undue interference with price stability. As everyone is a stakeholder in the environment and the climate (Schoenmaker and Schramade 2019), the ECB could contribute to the climate agenda without getting into political discussions.

There is thus a need for political space for the ECB to avoid central bankers making policy decisions. As climate policy is a top priority of European policy on a consistent basis, the ECB can contribute to this secondary objective using its asset and collateral framework of monetary policy operations. The European Commission and Council have repeatedly stated their aim to combat climate change by reducing carbon emissions. European Parliament members have also asked questions to the ECB president about the ECB's lack of carbon policies (see, for example, Draghi 2018).

Greening monetary policy operations

I propose a tilting approach to steer the Eurosystem's assets and collateral towards low-carbon companies (Schoenmaker 2019). The Eurosystem manages about €2.6 trillion of assets in its Asset Purchase Programme, which includes corporate and bank bonds in addition to government bonds[1]. In its monetary policy operations, the Eurosystem provides funds to banks in exchange for collateral, which currently amounts to €1.6 trillion. A haircut is applied to the value of collateral, reflecting the credit risk.

To avoid disruptions to the transmission of its monetary policy to the economy, the Eurosystem should remain active in the entire market. The basic idea of tilting is to buy relatively more low-carbon assets (for example, a 50% overallocation) and fewer high-carbon assets (in this case, it would be a 50% underallocation). The Eurosystem can then apply a higher haircut to high-carbon assets. Calculations show that such a tilting approach could reduce carbon emissions in the Eurosystem's corporate and bank bond portfolio by 44%.

Applying a higher haircut to high-carbon assets also makes them less attractive, reducing their liquidity. Early estimates indicate that this haircut could result in a higher cost of capital for high-carbon companies relative to low-carbon companies of four basis points.

Accelerating the transition

A low-carbon allocation policy would reduce the financing cost of low-carbon companies, fostering low-carbon production. The higher cost of capital incentivises high-carbon companies to reform their production process using low-carbon technologies, because this will save on financing costs.

A low-carbon allocation policy in the Eurosystem's asset and collateral framework would therefore contribute to the EU's policy of accelerating the transition to a low-carbon economy. To avoid political interference, it is important that the Eurosystem remains fully independent in the choice and design of its allocation policies.

This allocation policy can and must be designed so it does not affect the effective implementation of monetary policy. Price stability is, and should remain, the top priority of the Eurosystem. ■

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Endnotes

1. While the carbon intensity of corporate bonds can be assessed directly, it is more difficult for bank bonds. The look-through approach can be applied, whereby the underlying beneficiary instead of the intermediating bank is assessed. For *bank bonds, the carbon intensity of a bank's total loan portfolio should be evaluated.*

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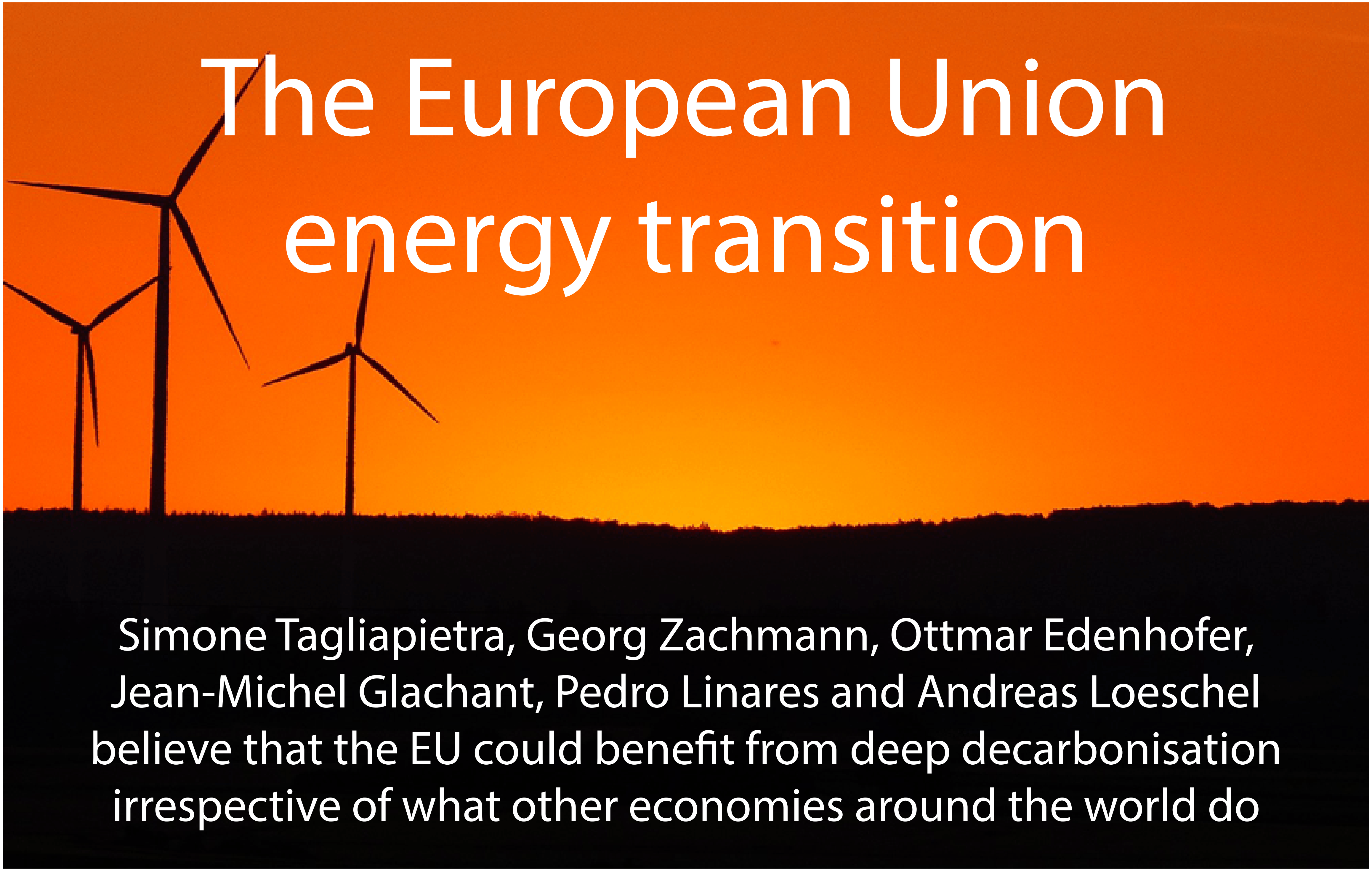


The European Union energy transition

Simone Tagliapietra, Georg Zachmann, Ottmar Edenhofer, Jean-Michel Glachant, Pedro Linares and Andreas Loeschel believe that the EU could benefit from deep decarbonisation irrespective of what other economies around the world do

FOUR PRIORITIES UP TO 2024 TO FOSTER THE EU ENERGY TRANSITION

Priority 1. Adopt tranformative policies to decarbonise the transport sector

Priority 2. Get the electricity system ready for a substantial increase of renewables

Priority 3. Strengthen the EU comparative advantage in low-carbon technologies

Priority 4. Foster decarbonisation in industry and buildings

Control and mitigate distributional effects

Decarbonise in line with the Paris Agreement

Seize economic and industrial opportunities

Develop an 'EU way' for energy competitiveness and security

The issue

Over the last decade, the European Union has pursued a proactive climate policy and has integrated a significant amount of renewable technologies – such as solar and wind – into the established energy system. These efforts have proved successful and continuing along this pathway, increasing renewables and improving energy efficiency would not require substantial policy shifts.

But the EU now needs a much deeper energy transformation to:

i) decarbonise in line with the Paris agreement;

ii) seize the economic and industrial opportunities offered by this global transformation; and

iii) develop an EU approach to energy competitiveness and security, as the EU has neither the United States' shale potential nor China's top-down investment possibilities.

Policy challenges

A full-fledged energy transition is becoming economically and technically feasible, with most of the necessary technologies now available and technology costs declining. The cost of the transition would be similar to that of maintaining the existing system, if appropriate policies and regulations are put in place.

In short, the EU could benefit from deep decarbonisation irrespective of what other economies around the world do. The transition can also be socially acceptable, if the right policies are put in place to control and mitigate the distributional effects of deeper decarbonisation.

The time to act is now, because energy is a rigid system in which infrastructure and regulatory changes take a decade to be fully implemented, while competition is not sleeping – as Chinese solar panels and the rise of the electric vehicles industry clearly show. Policy choices made up to 2024 will define the shape of the EU energy system by 2050.

Setting the right energy priorities for the new EU institutional cycle

The new members of the European Parliament and European Commission who start their mandates in 2019 should put in place major policy elements to unleash the energy transition. Political capital is – as always – limited, but four

The deep decarbonisation of electricity, transport, industry and buildings is an environmental imperative for Europe, and a unique economic opportunity priorities are crucial to foster the EU energy transition: i) adopt transformative policies to decarbonise the transport sector; ii) prepare the electricity system for a substantial increase in renewables[1], at acceptable cost and without compromising security; iii) strengthen the EU's comparative advantage in low-carbon technologies; and iv) foster the decarbonisation of industry and buildings.

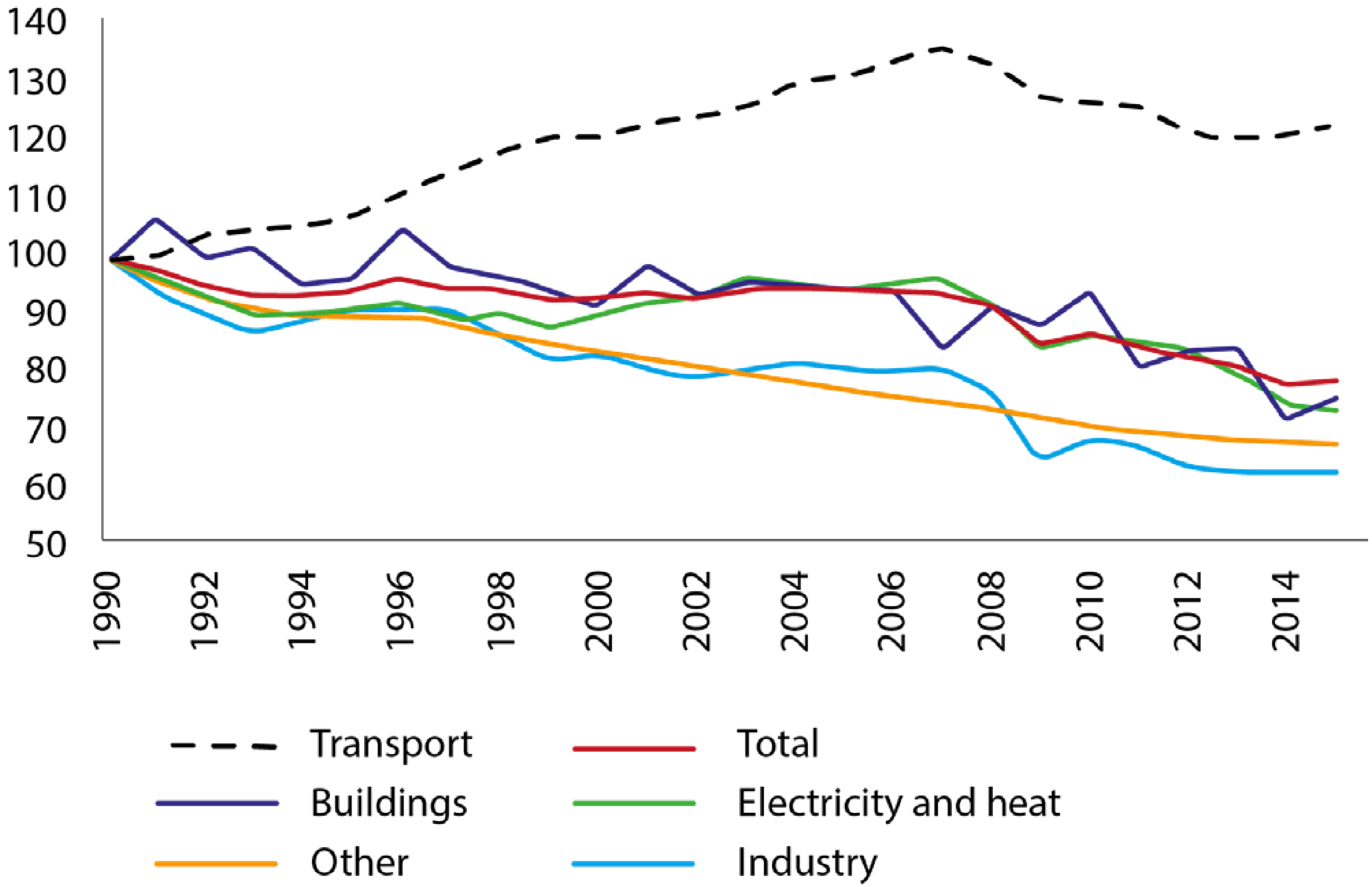
The deep decarbonisation of electricity, transport, industry and buildings is an environmental imperative for Europe, and a unique economic opportunity. Decarbonising the European economy would make a significant contribution to the fight against global warming, as well as cleaning-up the air European citizens breath every day. Air pollution continues to be an invisible killer in Europe, causing each year almost half a million premature deaths (European Environment Agency, 2018a).

Decarbonising the European economy also signifies investing in the industries of tomorrow. Europe has the potential to be a global leader in the manufacture of products such as wind turbines, electric cars and new-generation batteries. Investing in these industries can ensure the European manufacturing system's long-term economic competitiveness and sustainability[2].

Decarbonisation policies should be carefully crafted because without extensive consideration of their distributional consequences there is a risk of social backlash[3]. Avoiding this risk is possible, but it is crucial that the EU and national governments properly assess the distributional effects of their energy and climate policies, and take adequate measures to address them (Tagliapietra and Zachmann, 2018).

This also applies to carbon pricing: the gap between actual prices and those required to achieve ambitious climate change mitigation could be closed by promoting public acceptance of carbon pricing through the effective use of the substantial revenues raised (Klenert *et al*, 2017).

Figure 1. EU greenhouse gas emissions by sector, 1990-2016



Source: Bruegel based on European Environment Agency (2018). Note: 1990 = 100.

Key policy priorities to foster the EU energy transition

Priority 1: adopt transformative policies to decarbonise the transport sector

Between 1990 and 2016, the EU's greenhouse gas emissions decreased significantly in all sectors with the exception of transport, which saw a 20 percent increase (European Environment Agency, 2018b) (Figure 1). Transport is thus becoming a key obstacle to EU decarbonisation. A particular focus should be placed on decarbonising road transport because it is responsible for more than 70 percent of overall transport emissions.

Decarbonising road transport would also improve air quality in cities, which remains a fundamental challenge for better public health in Europe. All this should be done by assessing and addressing the distributive effects of transport decarbonisation policies, notably by taking into account that countries are made up of regions and constituencies with varying characteristics, including large semi-rural territories populated by low-income individuals deprived of public transport options and heavily sensitive to direct/in-direct transport taxation (Zachmann *et al*, 2018; Danesin and Linares, 2018).

To achieve the EU vision of a carbon-neutral economy by 2050 (European Commission, 2018), much stronger policies are thus required for transportation. Otherwise, under current policies, transport emissions might well exceed 1990 levels by 15 percent in 2050 (European Environment Agency, 2016).

Decarbonisation of transport will involve a range of policies. First, to replace the kilometres travelled by road vehicles, public transport, alternative transport modes such as walking and cycling, and more integrated modes of mobility should be promoted. New mobility such as 'mobility-as-a-service' can be enabled by ongoing developments in digital technologies. For instance, smartphone apps can allow information about transportation services from public and private providers to be better combined through a single gateway that creates and manages the trip, for which users can pay via a single account.

New approaches could help overcome a major comparative disadvantage of public transport – the longer door-to-door travel times – which mainly arise from the first and the last mile in the transport chain.

The environmental impact of freight transport could be reduced by promoting a switch from road to rail and maritime, and including the environmental cost of transport in the final purchase price of goods. To unleash the enormous decarbonisation potential of these options, new policies are needed, including economic incentives such as congestion charges, public investment in railways and urban public transport, and new approaches to urban planning and development licencing.

For aviation, modernisation of airport operations and air traffic control can deliver major efficiency gains. It should also be noted that very busy European air routes, such as Berlin to Frankfurt or Paris to Amsterdam, are suitable for international high-speed trains.

A second approach to the decarbonisation of transport is promotion of clean vehicles. The average age of the private car fleet in the EU is 7.5 years. This has been increasing since 2000, and in many EU countries this age even reaches 10 years (European Environment Agency, 2018c). The average car in Europe is, typically, high-emitting. Policies should therefore promote the accelerated substitution of the existing fleet by new, more advanced, low-emitting cars.

From an economist's point of view, the first option would be to internalise fully into fuel prices the external costs of transport emissions, to disincentivise the use of older cars. However, public protests over fuel prices have shown that the political economy of these measures is very complex.

A combination of policies is therefore required, including carrots and sticks, starting from the key EU policy tool in the field: emission standards. In December 2018, the EU reached an agreement to reduce per kilometre carbon dioxide emissions from new cars by 37.5 percent by 2030 compared to 2021 (European Council, 2018).

This represents a positive step, but it not enough to ensure the deep decarbonisation of the sector by 2050. Other tools to phase-out polluting cars could include: i) gradual, long-term increases in fuel taxes that internalise fully external costs (including congestion charges) but give consumers time to adapt; ii) higher registration taxes that deter consumers from buying high-polluting cars; and iii) limitations on high-polluting vehicles accessing metropolitan areas.

To foster this transition and ensure its social acceptability, the following measures could be adopted: i) subsidies that help low-income consumers buy new cars and scrap their old ones; ii) policies that support the deployment of clean public transport (which may be crowded out by car-sharing options); and iii) R&D support for alternative vehicles.

Electric vehicles have emerged as a promising option to decarbonise the energy input into transportation. With smart charging, electric vehicles might also add additional flexibility to the power system, and thus contribute to the further integration of even greater wind and solar energy production.

But other technologies might also contribute to this decarbonisation, including lower-emission combustion vehicles in the short term or hydrogen in the longer term. EU policy should be flexible enough to be able to take advantage, in a cost-effective way, of all the alternatives available.

For long-distance and heavy transport, technological uncertainty is far greater – not to mention maritime and air transport. In these cases, various options could contribute to decarbonisation, including advanced biofuels, green gas and synthetic fuels.

Priority 2: prepare the electricity system for a substantial increase in renewables
In the EU, most of the expansion of renewable energy generation arises from utility-scale projects. Wind is more important in Europe than solar, and for wind the average project size is increasing. The most promising developments in recent years have been the technology and cost breakthroughs related to offshore wind, which have made possible really large-scale developments.

Progress has been made in integrating utility-scale renewables, but it is still an unfinished journey: transmission needs to be expanded both onshore and offshore, more flexibility needs to be added and ultimately a better market design is needed.

Furthermore, the European electricity sector is on the verge of structural change, towards more digitalisation and decentralisation. The last fundamental change in the EU energy industry was the establishment of wholesale markets in the 1990s. That change, together with the entry of new players and new technologies[4], required new common EU rules on efficiency, competition and security. The European electricity transmission industry reorganised accordingly, creating a 'smart grid 1.0'[5] to make all this work.

The ambitious EU vision of a carbon- neutral economy by 2050 calls for new fundamental changes, involving notably the greening of all the supply, activation of all demand-side management solutions, reviewing the stock of appliances, engines and their standards, sharing of all the assets, codes and data. This can only be achieved with a digitalised and decentralised energy system. Greater decentralisation and digitalisation would foster renewable energy deployment in a more efficient and cost-competitive way.

In this context, decentralisation of the energy sector would happen in various areas and for different reasons. Renewables generation would bring down the size of generating units: a nuclear power plant can have a capacity of 2 gigawatts and coal or natural gas-fired power plants a capacity of several hundred megawatts, but the capacity of an onshore wind turbine averages to 3 megawatts and the capacity of a solar panel amounts to some kilowatts.

A similar transformation would occur on the demand side, where operators would aggregate kilowatt units of consumption to enter the wholesale market. Decentralised generation, aggregated demand and individual storage would take place 'behind the meter,' in other words in a domestic or small-scale context, such as rooftop solar panels generating electricity for domestic use or batteries used to power electric cars. These domestic appliances are thus not covered by traditional energy regulation (Glachant and Rossetto, 2018).

The EU should act to accelerate this convergence between decentralisation and digitalisation. This should primarily happen in the distribution system, which is the place where the numerous distributed actions, behind and beyond the meter, physically interact by combining on a local level consumption, storage and generation.

The distribution system should become an open platform, through which the various decisions of the multiple players can interact in a transparent and flexible manner. Such an open platform would require a common distribution operation code, focusing on connected electricity devices, to allow a more flexible flow of electricity.

Secondly, it would need a framework for common data coding and sharing, offering protection from fragmentation, cyber threats or dominance abuse. A third layer would be the tariffs charged by the distribution platforms, but this might be left entirely to national legislation, with a safeguard in EU competition law against abuse of dominant position by any distribution platform.

As decentralisation and digitalisation accelerates, each European country would be free to pick the kind of industry arrangement it prefers to deliver the high EU decarbonisation target. The options would be: i) A takeover by the dominant tech companies (such as Google), which would become operators of national distribution platforms; ii) Transformation of the existing grid operators into digital companies; iii) A blossoming of start-ups that would reinvent the energy sector; iv) The growth of distributed solutions such as energy communities.

Whatever choice each member state makes, the EU will need to put in place a pan-European framework that establishes a coherent multi-level architecture for data exchange and power-flow operation. This will enable the proper interaction of transmission and distribution networks, microgrids and communities, smart buildings and the Internet of Things (Schmitt, 2019).

Priority 3: strengthen the EU's comparative advantage in low-carbon technologies

The Paris Agreement should accelerate the global transition to a low-carbon economy. Global investment in low-carbon technology sectors – driven by investment in renewable electricity generation – has increased substantially and this trend is likely to continue.

The strengthening of the EU's comparative advantage in low-carbon technologies would provide future job and growth opportunities. To achieve the EU's energy and climate policy targets, a wide range of low-carbon innovation is needed in different sectors including electricity, heat and cooling, transportation (see priority 1), the built environment and energy-intensive industrial sectors including iron and steel, metals, cement, pulp and paper and chemicals.

Compared to the rest of the world, the EU is highly specialized in research and innovation in renewables and energy efficiency in buildings, and has increased its specialisation in renewable fuels, bioenergy, batteries and e-mobility (Zachmann and Kalcik, 2018).

A country's competitive advantage in a particular sector often coincides with an R&D specialisation in the same area. For example, countries that specialise in patenting in a certain low-carbon sector are also specialised in exporting in this sector. A number of factors can drive such R&D specialisation, including policy factors such as 'technology-push' measures including innovation subsidies, and 'demand-pull' measures including public procurement. Factors such as path dependencies also play an important role for both clean and dirty technologies.

Past developments are less important for immature technologies and there is therefore an opportunity to shape the comparative advantage of many early stage low-carbon technologies. The major benefits associated with low-carbon innovation justify support throughout the innovation process from research to development and to deployment.

Public funding is particularly important in early stages of the innovation cycle. Public investment in low-carbon research and innovation and private investment (which accounts for about 80 percent of total expenditure) increased substantially in the last decade. This led to an overall increase in low-carbon technology patents (International Renewable Energy Agency, 2019).

However, there are substantial differences between the sectors: private investment in the EU focuses mainly on batteries and e-mobility, renewable energy technologies and energy efficiency in industry. Renewable fuels and integrated and flexible energy systems attract larger shares of public investment. There is practically no EU research and innovation investment in energy efficiency in buildings, in carbon capture and storage or in the decarbonisation of industrial processes, even though these are potential game changers necessary for deep decarbonisation in the coming decades and thus should be R&I priorities.

It should be noted that it is mainly applied research done outside universities and national laboratories that is responsible for technology development in energy efficiency. Energy efficiency patents are positively associated with other non-energy innovations, and so general policies to promote innovation will also foster energy conservation inventions (Rexhäuser and Löschel, 2015).

Other examples for strategic R&D are potential breakthroughs in electrochemical or alternative storage technologies, the hydrogen economy or carbon capture and utilisation. A smart low-carbon transformation with low regulatory uncertainty and ambitious goals would increase the EU's competitiveness in the global marketplace.

As well as basic research into immature technologies, learning-by-doing of near-commercial technologies can substantially drive down technology costs. Clear and stable market signals such as a minimum price on carbon that increases over time in all sectors of the EU economy will accelerate the deployment of these technologies.

Renewable support schemes that focus on market integration of renewable energy generation would foster more flexible energy systems. Standards are essential for developing smart and flexible grid systems in the EU.

Priority 4: foster the decarbonisation of industry and buildings

Industry currently produces 25 percent of Europe's GHG emissions (European Environment Agency, 2018b), and is subject to the EU emissions trading system (ETS) and thus exposed to a carbon price. This, together with the fact that industry is generally considered the most energy-efficient sector, has led to no particular policies being proposed beyond carbon trading for the decarbonisation of industry.

However, there are four elements that would justify a more active stance: i) Industry does not feel the full impact of the carbon price because of the protective measures devised by the EU to prevent loss of competitiveness. Many industrial sectors still receive free carbon allowances; ii) The EU would like to see growth in the manufacturing sector; iii) When it comes to full decarbonisation, industry faces many more technical challenges than other sectors, in particular in relation to process emissions (that is, emissions not associated with energy use); iv) The circular economy will also induce a significant move in the EU industrial sector towards more recycling, which might be used also as a lever for decarbonisation.

Therefore, stronger policies are needed to promote the long-term decarbonisation of industry in Europe. Priority should be given to the following: i) Enhance recycling of materials, through the extension of the ecodesign directive (2009/125/ EC), which should include stronger requirements for products to be more durable, repairable and easily recyclable; and by adding to producers' responsibility for the management of their end-of-life products; ii) Create markets for climate-friendly options: guaranteeing carbon prices for selected industrial processes; increasing green public procurement (using shadow carbon prices when evaluating offers, or setting limits on carbon intensity), harmonising labelling; or setting embedded carbon consumption taxes; iii) Create investment incentives while ensuring carbon leakage protection by spreading carbon pricing globally, adjusting carbon prices at the border and abandoning free allowance allocation, and applying consumption charges.

The building sector is generally regarded as difficult to decarbonise, notably because energy efficiency ambitions have proved challenging to achieve (European Commission, 2017). In this sector, similarly to transport, a robust energy efficiency effort will be the foundation of decarbonisation, with efforts led by the energy performance of buildings directive (2010/31/EU). For new buildings, Europe already has strong efficiency standards and performance is improving.

Unfortunately, because of the slow turnover of the building stock, this is unlikely to be sufficient (Buildings Performance Institute Europe, 2018). The refurbishment rate of existing buildings needs to be scaled up by at least a factor of two and the average refurbishment needs to deliver deeper energy demand reductions. This will require a combination of efficiency standards, targeted financing policies and cooperation between central and municipal governments.

Key actions for the new EU commissioners and lawmakers

The members of the European Parliament and European Commission who will start their mandates in 2019 have the historical task of unleashing the deeper transformation of the EU energy system in line with the Paris Agreement, while seizing the economic and industrial opportunities of this transformation and developing an EU approach to energy competitiveness and security. To summarise, we propose four key actions to move forward.

Key measures to decarbonise the transport sector

Replace the kilometres travelled by road vehicles by putting in place economic incentives such as congestion charges, public infrastructure investment in railways and urban public transport, while also refocusing urban planning and development licencing on sustainability. Promote the use of clean vehicles through a combination of stricter emissions standards and gradual increases in road fuel taxes to internalise fully the environmental costs of road transport.

This notably implies increasing fuel taxes and car registration taxes for polluting vehicles. Other externalities including congestion and accidents also need to be addressed. To ensure social acceptability, targeted subsidies should be put in place to support low-income consumers in the transition. The EU and its members must work more on fairness and social acceptance in an accelerated transition, and should carefully study the positive results coming from field experiments and best practices, such the Copenhagen or Amsterdam smart city plans.

Key measures to prepare the electricity system for a substantial increase in renewables
Accelerate the convergence between decentralisation and digitalisation, notably by transforming the energy distribution grid into an open platform, via which multiple players (for example, domestic renewable energy producers, community renewable energy generators or storage provided by electric vehicles) could interact in a transparent and flexible manner. This can be started by defining a common distribution operation code and by creating a common data coding and sharing framework.

The next step would be to create a pan-EU framework establishing a coherent multi-level architecture for data exchange and power-flow operation to enable the proper interaction of transmission and distribution networks, microgrids and smart buildings. This will help to further integrate utility-scale renewables, by expanding transmission both onshore and offshore, and by enhancing flexibility. The EU electricity market design should also be reformed, to make it fully supportive of a high renewables system.

Key measures to strengthen the EU's comparative advantage in low-carbon technologies
Target public sector research and innovation funding at the early stages of the innovation cycle, notably in areas in which the EU has the potential to maintain or develop a comparative advantage – such as in renewables, energy efficiency in buildings, bioenergy, batteries and e-gas and e-liquids. Develop a predictable market environment for new low-carbon technologies to foster the emergence of a corresponding industrial ecosystem.

Key measures to foster decarbonisation in industry and buildings
In industry, promote the recycling of materials, also by extending producers' responsibility for the management of their end-of-life products. Create lead markets for climate-friendly options by guaranteeing carbon prices for selected industrial processes, increasing green public procurement and harmonising labelling. In buildings, make

robust energy efficiency efforts, notably through a combination of efficiency standards, targeted financing policies and cooperation between central and municipal governments. ■

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Endnotes

1. Over the last decade, renewables have become substantially more important in the EU energy mix. In 2017, the share of energy from renewable sources in EU gross final energy consumption reached 17.5 percent, up from 8.5 percent in 2004 (Eurostat, 2019).

2. See Fredriksson et al (2018) for an in-depth discussion of the case of electric vehicles.

3. As illustrated by France's 'Gilets jaunes' movement, which kicked-off when the government announced its intention to rise fuel prices for environmental reasons, and then rapidly targeted overall high cost of living, claiming that a disproportionate burden of the government's tax reforms were falling on the middle classes.

4. For example, combined cycle gas turbine plants.

5. Smart grids and smart meters '1.0', for instance, allow distribution companies and energy suppliers to reduce the cost of metering consumption and to detect electricity thefts better. They do not create a universal, interconnected space of operation, and – more importantly – they do not offer radically new services or personalised options to consumers.

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The euro area: creating a stronger economic ecosystem

Europe has been slow to produce a fully developed financial ecosystem. Christine Lagarde argues that the time is ripe for the euro area to show new resolve and complete the banking and capital markets unions

As we celebrate the 20th anniversary of the euro—and as we think about the next 20 years—it is fitting that we should honour the courage, creativity, and perseverance of those who inspired this unique European project. That spirit reminds me of a story that was once told by a great friend of Europe—President John F Kennedy. Addressing students at UC Berkeley in 1962, he said the following:

> *"The great French Marshall Lyautey once asked his gardener to plant a tree. The gardener objected that the tree was slow growing and would not reach maturity for 100 years. The Marshall replied, 'In that case, there is no time to lose; plant it this afternoon!"* [1]

Twenty years ago, European countries did not just plant one tree, they planted an entire forest—creating a new economic ecosystem known as the euro area. The fundamental strength of that system lies in its interconnectedness and diversity—a combination that can help Europe to fully unlock its immense economic potential.

With its 19 member countries, the currency union represents the world's second-largest economy[2]. The euro is the world's second-most traded currency, making it an important reserve asset for other countries' central banks and financial institutions.

Above all, the single currency has played a central role in boosting European integration, which in turn has raised living standards across the continent. Real GDP per person in the euro area has increased by more than 60 percent over the past two decades.

It is not surprising, therefore, to see strong public support for the single currency. Three in five euro area residents say that the euro is good for their country, and three-quarters say that the euro is good for the European Union[3].

And yet, this is still a relatively young and incomplete ecosystem. It braved a massive storm during the global financial crisis, and another a short while later in the euro area sovereign debt crisis. These events left painful economic scars on many households and companies, sowing the seeds of economic disparity across member countries and within.

Today, one in four young people in the euro area is at risk of being in poverty, casting a dark shadow over the continent's next generation[4]. A related challenge is the rise of populist movements in several countries, calling into question the very idea of European integration.

The relative success of the Single Market in goods and services in increasing economic integration serves as a reminder of the failure to achieve a similar degree of financial integration

Like any ecosystem, Europe continues to face good times and bad. After a formidable run of relatively strong growth over the last few years, economic activity in the euro area is now once again slowing, and risks are rising.

In many ways the weaker economic outlook raises an important question: is the euro area better prepared for unexpected economic storms? The short answer is yes, the currency union is more resilient than ten years ago. But it is not resilient enough. Its banking system is safer, but not safe enough. Its economic well-being is greater overall, but the benefits of growth are not shared enough.

In other words, now is the time to strengthen this unique economic ecosystem. How? By improving financial interconnectedness in a way that truly serves all Europeans.

The current state of the financial system

The relative success of the Single Market in goods and services in increasing economic integration serves as a reminder of the failure to achieve a similar degree of financial integration.

There once was a vision that monetary union would serve as the foundation of a financial union—that just as there is a Single Market in goods and services, there would eventually be a single market in banking and non-bank finance as well.

We all recognize that finance is the lifeblood of commerce. At its best, it waters the seeds of innovation and facilitates the churning that every healthy ecosystem needs. At its worst, it becomes a deluge that sweeps away all that stands in its path—we saw this during the global financial crisis. And somewhere in the middle, finance can simply be an underdeveloped irrigation system, delivering some nutrients but not enough, something that prevents the green shoots of growth from reaching their full potential.

I would put Europe's financial system in this middle category. Unfortunately, political priorities seem to have moved to other areas. I, for one, do not view this as acceptable. With the economic slowdown on everyone's minds, let me say this clearly: now is the time to give euro area finance another big push.

So I will focus on the areas of financial integration where making progress is critical: the Banking Union and the Capital Markets Union.

Pushing forward on banking union

Let me start with the banking union. Before the crisis, financial integration in the euro area saw plenty of cross-border lending, especially between banks. But it was also a time of national supervision and neglect of proper underwriting standards, especially if the risks were far from home. Inevitably, what followed were sharp rises in asset prices in some countries, creating housing bubbles and fiscal bubbles. We know how that ended.

When the global financial crisis hit, the large so-called 'core' banks abruptly pulled their liquidity back to the perceived safety of home, precipitating credit crunches where once they had fueled credit booms. Asset prices collapsed. This retrenchment was an important contributor to the emergence of the euro area debt crisis just a few years later. Today, cross-border lending between banks in the euro area is back at 2005 levels.

So, should we be worried? Yes. Firms in some euro area countries pay more than twice as much for credit than comparable firms in other euro area countries. There is a similar situation for households. And this dispersion in borrowing costs has increased since 2009. It is the cost of fragmentation in finance.

Now, it is not that nothing has been done to address the problem. Far from it. In the midst of the crisis, policymakers recognized that the institutional architecture—the plumbing system—had not held up to the storms. They realized that, to be strong and to thrive, a monetary union needs a banking union, one where risk-taking is subject to proper checks and balances.

Astounding progress was made in a very short amount of time. The creation of a single supervisor for banks, higher capital buffers inside banks, the introduction of a new framework for handling bank failures and crises. These new tools became critical elements of a new system of checks and balances.

The good news for taxpayers is that, as a result, they are now less likely to be on the hook for massive bank bailouts than a decade ago. But that is not the whole story. Not only is 'home bias' still pervasive in European banking, as banks choose to lend and invest domestically, but banks are facing new challenges from new angles.

Higher capital at banks has meant lower returns on equity, implying a need to pursue leaner and more efficient business models. New entrants such as fintech firms mean new sources of competition, bringing new pressures on bank profitability and, if not carefully managed, new incentives to ease lending standards.

In sum, we need a European banking system that can bend in a storm without breaking, we need a banking system that will truly diversify risks across the ecosystem and irrigate growth. It is clear what is left to be done: establish common deposit insurance. We can find ways to resolve our legitimate national concerns and plant that vital shade-tree.

I want to emphasize that this system will be funded by banks, not taxpayers. To get this done, member countries will need to agree on a mutually acceptable balance between risk-sharing and risk-reduction—between trust and accountability. This will not be easy.

I urge euro area leaders to reignite the discussion, to negotiate in good faith and make the difficult compromises, to unlock the full potential of the banking union.

Unlocking the potential of capital markets

In parallel, we have to pursue the essential complement to the banking union: a thriving and integrated single European capital market. Just as a forest ecosystem is made more resilient by greater diversity, so Europe's financial system would be more resilient with more diversified sources of financing.

Let me give you just one data point: in the United States, the corporate bond market accounts for more than two-fifths of GDP, compared with only one-tenth in the euro area. Former Federal Reserve Chairman Alan Greenspan once referred to capital markets as the 'spare tire' of the financial system[5].

European finance also needs a spare tire. This is why Europe has chosen to chart a course to capital markets union. This major endeavour, like the banking union, is ultimately about broadening the range of domestic and cross-border financing options for firms and households. Why should people care?

Currently, euro area households store 40 percent of their financial assets as bank deposits. This leaves them very exposed to the banking sector. As long as this is the case, Europe will be overly reliant on banks for savings instruments and investment financing. Not only would an integrated capital market across the EU help companies and households reduce their reliance on banks, it would also make the ecosystem more resilient to shocks.

It would help achieve a more uniform cost of funding for firms across countries. Think of similar firms in Italy and Austria, just across the border from each other. Why should they face sharply different costs of financing when they are just a few kilometers apart?

It would also help boost people's returns on savings and help buffer domestic shocks to their incomes, as they include other countries' stocks and bonds in their portfolios. Think of Italian savers having an easier ability to invest in something besides Italian banks. Think of German savers desperate to earn something more than zero on their bank deposits. There is a long way to go.

So, how should policymakers unlock the full potential of the capital markets? While a number of reforms are needed to achieve more integrated European capital markets, let me highlight three key areas. First, transparency of information. Capital markets are all about arms-length transactions. You buy debt or equity claims on someone you've never met. Here, you rely on public information, information you can trust. The beating heart is transparency. Information on firms and financial instruments needs to be widely available, at low cost, based on strong audits, and presented in readily comparable ways.

A good example is the recently developed standard for securitization, which will give preferential regulatory treatment to simple, transparent, and standardized (STS) instruments. After a transition period, only these standardized securitizations will be eligible as ECB collateral. Securitization developed a bad reputation during the global financial crisis, but if properly done it can be used to broaden the investor base and increase funding options for small businesses.

Investors would also greatly benefit from more efficient insolvency regimes. This is my second key area. The faster and smoother the insolvency process can play out, the better. This would help free up capital that could be invested more productively elsewhere. Of course, the need for reform varies widely across Europe and insolvency procedures are deeply rooted in national traditions. Resolving a corporate insolvency in Greece takes about nine times longer than in Ireland, for example.

So yes, these reforms tend to be politically difficult and take time, but they are worth doing. The same is true when it comes to my final area—taxation of cross-border investments. One reason financial investors may be discouraged from venturing far from home is the different rules and procedures each country has on withholding taxes.

Ideally, investments in other euro area countries would be treated in the same way as domestic investments. At the very least, withholding tax rules should be simplified and harmonized to encourage greater diversification in financial portfolios.

The bottom line is that planting new trees in the capital markets could help promote a Single Market in finance and transform Europe into a more vibrant and more robust economy. It is time to replicate in finance what has been achieved in creating the Single Market for goods and services—a project that has raised GDP in the EU by an estimated 9 percent[6].

Is this overly ambitious? A fully integrated EU financial market, really? Time will tell—but my money is on Europe's courage, creativity, and perseverance.

Conclusion

Let me conclude with a quote from Molière, who once said: *"The trees that are slow to grow bear the best fruit."*[7] Some can rightfully argue that Europe has been slow to produce a fully developed financial ecosystem. Going on 20 years, the time is ripe for the euro area to show new resolve and complete the banking and capital markets unions—so it can harvest the benefits now and in the future. ■

Christine Lagarde is the IMF Managing Director

Endnotes

1. John F Kennedy's address at the University of California at Berkeley, March 23, 1962

2. When measured by market-exchange rates.

3. Eurobarometer survey, November 2018.

4. IMF Staff Discussion Note (2019): "Inequality and Poverty across Generations in the European Union."

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6. Veld, J (2019), "Quantifying the Economic Effects of the Single Market in a Structural Macromodel", European Economy Discussion Paper, No 094, European Commission.

7. Molière, Le Malade Imaginaire, Acte II, Scène V, "Les arbres tardifs sont ceux qui portent les meilleurs fruits."

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EU urgently needs to reverse its climate neutrality failure

Immediate action is necessary to ensure the EU can become carbon-neutral by 2050. Simone Tagliapietra suggests it is attainable, but the momentum must not be lost

European leaders failed in June to adopt a target to make the bloc climate-neutral by 2050, due to opposition from the Czech Republic, Estonia, Hungary and Poland. The target, which implied that by 2050 Europe would have to absorb as much greenhouse gas as it emits, has gathered momentum over the last month. Since May, the number of countries backing the target has risen from eight to 24. By European standards, this represents a surprisingly quick political development. It also suggests that remaining resistance can be overturned, and that the 2050 target can eventually be adopted.

European leaders should increase pressure on the four opposing countries and agree the 2050 deal before the UN climate conference in New York in September, where discussions will focus on how to accelerate the implementation of the Paris Agreement.

Europe needs to arrive in New York with the 2050 climate neutrality target secured, not only to stay at the forefront of global climate action but also to push China and other major polluters to follow the same path.

This is vital, as the aim of arriving at carbon neutrality by 2050 is the single correct destination point on the climate policy map. Scientists have indeed shown that achieving climate neutrality within that time frame is the only sensible way to limit global warming to 1.5 degrees Celsius, and therefore to protect the world from the more dramatic impacts of climate change.

This would represent only a starting point for Europe, though. The continent has not yet managed to reduce its greenhouse-gas emissions convincingly. After years of decline, emissions have actually picked up again in 2017. This is not surprising, as fossil fuels continue to dominate Europe's electricity, transport, industrial and residential sectors.

Just look at the electricity sector. In the last decade, Europe has strongly supported renewable energy, which now covers around 30% of consumption. But while European electricity has become greener, it has also maintained its oldest and most polluting component: coal.

The dirtiest fossil fuel still represents 20% of Europe's electricity mix, with astonishing national peaks such as 80% in Poland, 50% in the Czech Republic, 46% in Bulgaria, 37% in Germany, and 34% in Greece.

Immediate action is necessary to ensure the EU can become carbon-neutral by 2050 and thus limit global warming. The rapid rise in support of this target in the last month suggests it is attainable, but the momentum must not be lost

Only Finland and Sweden have so far taken a final decision on a coal phase-out. In other cases, countries have just made announcements, generally within a 2030 horizon. In Germany, a 2038 coal phase-out is now under discussion. Not even this, though, has ever been mentioned in central and eastern European countries featuring the highest utilisation of coal.

Possibly even worse, however, is the situation of the European transport sector. CO_2 emissions have continued to rise over the last few decades with little policy intervention by European leaders to reverse this trend. EU leaders should not only adopt the 2050 climate neutrality target before the September UN climate conference, but also demonstrate their genuine commitment to consistently pursue it.

There are no excuses: deep decarbonisation is becoming technically and economically viable, as most of the technologies needed for this transformation are now available, at ever lower costs. What is needed is a clear policy framework capable of promoting this transformation in an intelligent way, ie. by seizing the economic and industrial opportunities it offers, and by ensuring its social inclusiveness.

This has to be done right now. Policy choices made from now until 2024 will indeed define the shape of the European energy system by 2050. Europe, thus, needs not only to agree on where it wants to go, but also to make sure it consistently follows this path. ■

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Redefining Europe's economic sovereignty

Mark Leonard, Jean Pisani-Ferry, Elina Ribakova, Jeremy Shapiro and Guntram Wolff make recommendations on how to adapt the EU and national policy systems to better integrate economic and geopolitical considerations

Europeans like to believe the European Union has the collective economic size and capacity to determine its own economic destiny. But the behaviour of others global powers is increasingly calling this ability into question. China and the United States, especially, do not separate economic interests from geopolitical interests in the same way the EU does.

They are increasingly using economic connections, from cyberspace to financial links, to gain geopolitical advantage or to serve geopolitical goals. Europe's economic sovereignty is at stake.

The problem for Europe is real but manageable. This Policy Contribution examines the specific problems that China and the US pose for European economic sovereignty, and considers how the EU and its member states can better protect European economic sovereignty in a range of areas, including state aid to domestic industries, competition policy, investment screening, export controls, the international role of the euro, the role of European development banks, the European payments infrastructure and the global governance system. In each area, we recommend ways to improve the EU's capacity to wield economic power, without advocating increased protectionism or a retreat from globalisation.

We make recommendations on how to adapt the EU and national policy systems to better integrate economic and geopolitical considerations. The next European Commission should develop an economic sovereignty strategy to boost Europe's research and scientific base, protect assets critical to national security from foreign interference, enforce a level playing field in domestic and international competition, and strengthen European monetary and financial autonomy.

To guide the implementation of this strategy, an economic sovereignty committee should be established that will seek to integrate economic and security considerations within the European Commission. But the answer to this problem does not lie only in Brussels. We recommend a flexible implementation strategy that connects with member-state policy debates and makes use of 'mini-lateral' groups of member states.

The problem

The European Union was born during the Cold War. It developed during the *détente*, and enlarged after the demise of the Soviet Union. It is now part of a world that is increasingly shaped by the strategic rivalry between the United States and China. Throughout this six-decade history, the EU never took part in the competition between great powers. Even though several of its member states have deployed some military forces abroad, the EU has considered itself a soldier of peace.

Europe has shown a readiness to address the new challenges in fields including trade, foreign direct investment, finance and currency internationalisation; but what it needs is a more encompassing strategy

But whereas the EU does not send armies all around the world, its leaders like to believe that the EU has the collective economic size and capacity to determine its own economic destiny, to set its own rules for economic life, to negotiate on an equal footing with partner economies, to tame would-be monopolies and even to set economic standards and regulations for the rest of the world.

Sovereignty, for the EU as a whole, is first and foremost economic sovereignty. The collective capacity of EU countries working together to preserve their economic independence underpins the argument that the European integration process provides value to Europe's citizens. That argument is bolstered by the EU's ability to participate in defining the rules of the game for the global economy – what Chancellor Merkel calls *Handlungsfähigkeit* and the French call *Europe puissance*.

But perhaps the EU has been lucky so far. Perhaps the EU's apparent economic independence in the global context was always the result of a lack of geopolitical interference. Perhaps it could only flourish under the benevolent aegis of a real superpower. Perhaps, in other words, it only existed because no serious power was willing to challenge it and because the US was willing to protect it.

Through the first decades of its history and up until very recently, the EU has taken for granted that the global system provides a functional framework for international economic relations, which could be regarded as separate from the spheres of geopolitics and security. For sure, the economic rules were determined by power relations in the wake of the second world war.

But in the years that followed, even the US by and large followed them. Sure, the economic and geopolitical spheres often bled into each other, particularly during the Cold War. But the US regarded economic integration among

‘Western’ countries as conducive to the strength of the free world, and it stood by this principle even after the Soviet Union ceased to exist and was no longer a security challenge.

In this context, the EU was able to conduct an international economic policy that was reasonably insulated from geopolitical concerns. Its construction – with most international economic powers given to EU-level bodies and most security and foreign policy instruments left at the member-state level – reflected this assumption.

This separation between the economic and the geopolitical spheres was always fragile. It now looks outdated. The US and China have fundamentally different relationships with Europe, but have in common that they do not separate economics from geopolitics[1]. The competition between them has become simultaneously an economic competition and a security competition.

National security issues are gaining prominence everywhere, as is the almost-forgotten relationship between economics and national security. Economic connections, from cyberspace to financial links, are becoming the primary areas of great-power competition and are increasingly at risk of being weaponised (Farrell and Newman, 2019; Leonard 2016). Powerful countries often no longer abide by the primacy of economics.

In this new world there are more and more cases in which the US and China follow neither the letter nor the spirit of the rules in their relationships with the EU and its member states.

As far as the US is concerned, its decision to make full use of the centrality of its currency and its financial system to enforce secondary sanctions against Iran was a major shock to the European partners and the 2015 nuclear agreement with Iran (whose own behaviour had remained fully compliant with principles negotiated between the US, Iran and other parties in the agreement).

The US decision to abandon core principles of the global multilateral trading system and to withdraw from the Paris Agreement were further shocks for the EU and the world. Regarding China, it was also a shock to the EU to realise that China is behaving as *"an economic competitor in the pursuit of technological leadership, and a systemic rival promoting alternative models of governance"* (European Commission/High Representative, 2019).

For the EU, this new linkage across policy areas is deeply destabilising. Its own rules, and the organisation of its governance, were designed under the assumption that external economic relationships would be preserved from the interference of geopolitics.

But now the EU's main ally openly leverages its economic centrality to enforce its security preferences, while its main trade supplier departs from the internationally-accepted doctrine that investment decisions should be exclusively guided by economic criteria.

In this new context, the EU must redefine its concept of economic sovereignty and the instruments it intends to use to defend and promote it. This is not an easy challenge, but the problem is manageable. There are strategic opportunities for measures the EU can take at national and EU levels to enhance its economic sovereignty without resorting to US-style protectionism and decoupling.

The great power threat to European economic sovereignty

There are many threats to European economic sovereignty, ranging from structural demographic and technological trends to lone-wolf hackers in their parents' basement revealing state secrets. But two great powers – China and the United States – represent specific and particularly difficult problems for the European Union because of their unique capacities and approaches to the international economic order.

The two countries present distinct challenges, but overlap in one important respect: both increasingly link their international economic policies to their geopolitical goals and seek to use economic tools to secure geopolitical advantage.

China

China is governed by an all-encompassing political institution, the Chinese Communist Party (CCP). It does not treat the economic realm as separate from the political and geopolitical realms. It simultaneously seeks economic growth, technological development and geopolitical influence. For this reason, the acquisition of a European company by a Chinese company might be motivated by long-term national or even CCP priorities rather than private profit-making objectives.

There are more and more cases in which the US and China follow neither the letter nor the spirit of the rules in their relationships with the EU and its member states

Similarly, trade and investment relationships with third countries might be motivated by China's search for influence and its desire to secure commodity supplies, rather than by the intrinsic economic value of any particular project[2]. The EU has three main concerns when it comes to China: China's influence over individual EU countries, the blurring of economic interests and security/military goals, and China's divergence from multilateral standards.

Influence over individual countries

On the first, the influence that China acquires over individual EU countries through its foreign investment risks becoming an obstacle to effective foreign policymaking in the EU. For example, China can seek to use economic tools to mute European opposition to its policies (for example in the South China Sea) and its domestic human rights record.

Chinese economic influence in Europe has already meant that, for example, Hungary, Greece and Slovenia have blocked or diluted resolutions relating to international arbitration over the South China Sea[3] and on human rights[4].

Similarly, in March 2018, the EU members of the United Nations Human Rights Council all had to abstain on a Chinese resolution that re-defined the defence of human rights in terms of state-to-state cooperation according to *"mutual interests"* (Piccone, 2018). That vote hardly accorded with EU values or interests, but Chinese pressure on certain vulnerable EU members meant abstention was the only way to avoid an internal EU division.

The 16+1 initiative has also undermined EU unity by creating direct bilateral links between some central and eastern European countries and China[5]. Italy's signing on 23 March 2019 of a Belt and Road Initiative cooperation agreement[6] is set to further create tensions in the EU on the right approach to China.

These problems mostly stem from the EU's unique internal organisation, particularly the requirement for unanimity on foreign policy decisions. Other powers, including the US and Russia, have long used bilateral relations to undermine EU unity on EU foreign policy.

Blurring of economic interests and strategic objectives

Second, China has an ambitious strategy to gain economic leadership. From a historical standpoint, this is a normal goal for a rising nation, but it nevertheless poses challenges for the EU.

Winning the global competition over emerging technologies such as artificial intelligence, big data and biotech are stated national security and economic imperatives for China[7]. Many emerging technologies have dual uses and the old paradigm that technologies designed for military use will trickle down into civilian applications often works the other way in China.

Chinese plans for industrial and technological development are also based on the premise that civilian companies help with military development and applications. Its resolute industrial policies and subsidies to key sectors (solar, batteries, autonomous driving and 5G are prominent examples) represent a clear strategy to gain competitive advantage in key sectors that China sees as critical for future geopolitical and economic advantage.

Of course, technological competition as a part of geopolitical struggle is nothing new. During the Cold War, military-technological competition with the USSR provoked great fear in the West. But the current situation is vastly different. China and the West are deeply in each other's business to an extent far beyond anything seen during the Cold War. The huge degree of interconnection means there are many more channels through which each side can hurt the other.

China has some structural advantages in that competition. Important parts of the digital infrastructure are controlled by large multinational corporations, which are subject to pressure and control from their home countries. The Chinese National Intelligence Law enables the government to force private companies to collaborate with Chinese intelligence services.

Restrictions on foreign investment between the EU and China are asymmetric in favour of Chinese companies entering the EU market. In China, there are all kinds of problems for European investors, including the near impossibility of securing arbitration, difficulties in moving capital back from China and challenges to intellectual property rights. China also leverages market access to force companies to transfer technology, a practice incompatible with the spirit of World Trade Organization rules.

Finally, China heavily subsidises its own national champions and favours their access to credit, distorting the level playing field. This asymmetry means China can gain influence over technology from the European economy but this does not work the other way around. Chinese state-owned enterprises, with their enormous financial muscle, are well equipped to use western openness to gain leadership in key sectors of the global economy. There is also a problem with transparency in that it is not always clear which Chinese funds are used to raise ownership stakes[8].

EU countries have adopted measures on making Chinese investment in the EU subject to screening. The EU-China summit declaration of 9 April 2019[9] explicitly recognises the importance of *"following international standards in intellectual property protection and enforcement."* It will be important to monitor progress in these areas.

Challenges to multilateralism

Third, China is increasingly present on third markets and does not necessarily follow the EU's approach or existing multilateral principles. It is legitimate and normal for China to increase its global footprint. It is also understandable that China does not simply accept multilateral standards that were largely shaped by the US and the EU in the post-war period. Nevertheless, the fact that China has now the economic and political muscle to do so requires strategic thinking in the EU.

One topic is China's Belt and Road Initiative (BRI), which creates frictions with the existing multilateral system. Chinese BRI investment can be hugely beneficial for the recipients, offering opportunities for trade and investment for companies around the world: an airport or port, once built, facilitates trade and creates jobs (Dadush and Wolff, 2019). But the BRI deserves some criticism for its lack of transparency and for its sometimes-onerous conditionality.

China's financial claims over over-indebted countries could also be turned into control of strategic infrastructure and political influence. This has led the US and the EU to express concern that China does not follow the principles of the Paris Club, which aims to provide multilateral solutions to problems of over-indebtedness. The IMF also emphasised that the BRI should *"only go where it is needed and where it is sustainable"* (Lagarde, 2019).

Beijing has made some efforts to alleviate these concerns. For the EU, it is important to clearly establish the facts and not fall into the trap of just repeating US official statements.

As part of the BRI, China has raised its profile in the Middle East though humanitarian aid and infrastructure projects, including a July 2018 pledge of $20 billion for reconstruction in war-torn countries in the region, such as Syria[10]. This support will be welcome because the support for the region from the west is unlikely to be sufficient.

However, China's intervention could also frustrate European efforts to use reconstruction aid to induce greater cooperation from Syrian president Bashar al-Assad on issues such as refugee returns and protection of human rights.

China has also become an important economic partner and investor in African countries. This investment, if well executed, might boost much-needed growth, to the benefit of Africa and also the EU, which could find new trading opportunities. But it also means Europe faces more competition in advancing its policies on Africa. The lack of transparency over Chinese funding could also make it more difficult for western multilateral development banks to lend in the region and carry out any subsequent conditional debt restructuring.

In short, China is a major rising power with increasingly global interests that might collide with European interests. The EU has awakened to the challenge but it has not yet defined its response. It needs to shape a strategy for its foreign policy, its technology and investment policy and its policy on China in third markets and multilateral institutions.

The United States

The United States has been Europe's most important ally since the second world war. Naturally, the problems that it poses for European economic sovereignty are of a very different nature than those posed by China. The ongoing alliance with the United States reflects Europe's democratic values and history. However, the presidency of Donald Trump has created serious doubts in the EU about the reliability and implications of that alliance.

A strategic shift

The United States has always had interests and priorities that differ from Europe's. But the primacy of the Atlantic alliance and the strong belief that US national security and long-term prosperity would be best served by the strengthening of a global rules-based economic system meant that infringements of the global rules were the exception rather than the rule.

Box 1. The enduring monetary asymmetry of the global economic system

Concerns about US abuse of its special role in the international monetary system are not new. In the post-war period, the built-in asymmetry of the Bretton Woods system implied a special role for the US dollar. Countries that pegged their exchange rates to the dollar were dependent for build-up of foreign exchange reserves on US monetary policy and on the availability of US dollar liquidity.

Providing the dollars for these foreign exchange reserves required the US to run a current account deficit, but these deficits undermined trust in the US currency (this is the so-called Triffin dilemma). The issuer of the anchor currency enjoyed 'exorbitant privilege' but it also performed an exorbitant duty.

The end of the fixed exchange-rate regime in the early 1970s and the gradual move to generalised floating rates initially seemed set to reduce, and possibly end, this asymmetry. Although the dollar remained the dominant international currency, a floating exchange rate system looked fundamentally symmetric. Each participating economy could conduct its own monetary policy and freely enter into trade and financial transactions with the rest of the world.

By the late 1990s, financial opening was assumed to be universally beneficial, international macroeconomic and monetary coordination were widely considered unnecessary and the issuance of an international currency was regarded as yielding only minor benefits.

The experience of the 2008 global financial crisis forcefully challenged this view and provided a stark reminder of the dependence of international trade and finance on the US dollar. Even though the financial troubles originated in the United States, the resulting global liquidity crisis made a massive injection of US dollars into the global financial system an urgent necessity. The US decision to extend dollar swap lines to selected central banks was thus instrumental in containing the effects of the crisis. But this was not done through multilateral institutions, rather on a discretionary basis taking into account the economic, financial and geopolitical interests of the United States.

Ironically, this meant that a financial crisis that originated in America strengthened the value of the US currency and enhanced US influence over the economic policies of other economies. This situation has not fundamentally changed: the current dollar funding requirements of international banks mean that swap lines from the US Federal Reserve remain a critical backstop for the stability of many national financial systems (Bahaj and Reis, 2018).

Subsequent research has shown how the US dollar has maintained and has even expanded its exorbitant privilege in the post-Bretton Woods world. Essentially, increasing international financial integration and global growth have increased the system's reliance on the US dollar, the US financial system and thus US monetary policy. The US remains more than ever at the centre of the global financial system. Policy initiatives from the Federal Reserve and the federal government reverberate throughout the world economy (Rey, 2013).

For example, because so many international trade transactions are invoiced in dollars, as the share of trade in a given country's economy increases, its citizens require more dollar-denominated assets, and thus the local banking sector becomes more dollarised and the central bank requires more dollar reserves (Gopinath and

Stein, 2018). This in turn increases the incentive to invoice cross-border trade in dollars and creates a feedback effect.

Similarly, as global growth and investment have boomed, the supply of safe assets (Caballero *et al*, 2017), or assets that are expected to preserve their value even during adverse events, has not kept pace with demand until the US massively increased its deficits and bond prices corrected downwards.

The United States dominates the supply of safe assets, particularly in the form of US treasury bonds and notes because it remains one of the most dynamic economies in the world and one of the oldest democracies with a strong adherence to the rule of law and a long history of political stability.

The monetary and financial centrality of the United States is only one facet of the often underestimated asymmetry of the global web of economic and technical interdependence.

Whereas globalisation was assumed to result in an unequivocal equalisation of economic power, network relationships increase the power of those states that enjoy control of key nodes of the network (Farrell and Newman, 2019; Leonard 2016). In such a setting, sovereignty is unequally distributed.

In the words of political scientist John Ikenberry (2000), *"the United States sought to take advantage of the post-war juncture to lock in a set of institutions that would serve its interests well into the future and in return, offered – in most instances quite reluctantly – to restrain and commit itself by operating within an array of post-war economic, political and security institutions."*

Under Trump, however, US policy has placed much less value on the transatlantic alliance and has demonstrated on issues as varied as Iran and trade that is it willing to leverage its economic position to secure policy outcomes, even if that implies undermining the global rules-based system and EU security.

More broadly, the Trump administration has actively reduced the support it gives to the multilateral order and has used its used its unique position within the global economic order advantageous position to extract immediate economic gains from its economic partners to secure its geopolitical goals, for example in the context of Iran.

The dollar, the US's financial system and its current role as a hub for the global digital architecture provide the US with an unrivalled ability to use the global system to serve its own security goals. To what extent future US administrations will continue with that policy is an open question, but it is clear that the damage the Trump administration has inflicted on the multilateral trading system is already real and likely to be difficult to reverse fully.

The effectiveness of US secondary sanctions

The central position of the United States in the international financial system has sovereignty consequences for other countries. These consequences often stem from increasing US willingness to use financial sanctions, including secondary sanctions, to support various US geopolitical goals, for example when it comes to isolating Iran or threatening to sanction German companies over the Nord stream 2 gas pipeline project[11].

When the Trump administration decided in spring 2018 to withdraw from the Iranian nuclear deal and to return to a policy of economic isolation towards Iran, the European parties to that deal (the United Kingdom, France, and Germany) objected and decided that it was in their interests to continue with the deal. But the essence of that deal is that, in exchange for ending its nuclear programme, Iran gets to return to global markets as a more or less normal nation.

The US government sought not only to cut off Iran from US markets but also to ensure that other countries did not do business with Iran, whether or not they shared US goals. To do this, the US used so-called secondary sanctions that threatened to cut off foreign firms that traded with Iran from the US market, the US financial system and the use of the dollar. The US has supplemented this pressure by threatening to prevent the directors of companies that violate US sanctions from entering the territory of the United States[12].

In principle, a 1996 EU regulation (Regulation (EC) No 2271/96) protects European companies from US enforcement of secondary sanctions. The EU attempted to leverage this to negotiate an EU exception from US secondary sanctions. But in the context of globalisation, the even more central position of the US financial system now means that such regulations no longer have the same deterrent value.

European banks and companies do not believe in the EU's ability to protect them and place too much value on their access to the United States to even take the risk. They have pre-emptively complied with US sanctions, even as their governments have urged them not to.

In January 2019, France, Germany and the UK announced the creation of a special purpose vehicle called INSTEX that, by netting out exports and imports, would help substitute gross cross-border payments with gross intra-Iran transactions, in theory reducing the need for EU-Iranian trade to access the global payments system.

This vehicle is unlikely to lead to a significant resumption of transactions with Iran, because any company doing business with the United States can be sanctioned directly. For now, at least, INSTEX is limited to humanitarian goods that are not under US sanctions.

More generally, the provision of payments to Iran has not been stopped by technical problems but by often direct political pressure, as shown by the 2018 Bundesbank decision[13] to suspend its rules on the free convertibility of an Iranian deposit in a bank subsidiary located in Germany into cash. No evidence of possible terrorism or money-laundering concerns was reported to back up this decision.

The challenge the EU faces in preserving its economic sovereignty is compounded by its security dependence on the US. Despite efforts to at least pursue an independent defence capacity, EU strategic autonomy remains *"limited to the lower end of operational spectrum [and] the prospects for significant change are slim over the coming decade based on current government plans"* (Barrie *et al*, 2019).

Barrie *et al* (2019) found that without the US, Europe would need to invest around $100 billion to establish sufficient capacity for a maritime confrontation and $300 billion or more to fill the gaps in defending territory against a state-level attack[14].

These numbers, while high, could without doubt be funded by the rich European countries if there was political will. However, even if military capacity was available, the issue is also of how much solidarity EU countries would be ready to provide. The question is of particular relevance for the central and eastern European EU members.

Accordingly, many of the more security-conscious European states reject any sort of distancing from US policy on security issues. Moreover, even with political will, such investments would take ten to twenty years.

Europe's response

Europe's response to this new situation has been piecemeal. It has shown a readiness to address the new challenges in fields including trade, foreign direct investment, finance and currency internationalisation. But what it needs is a more encompassing strategy for the new context in which partners and competitors are prepared to let economic relationships serve broader geostrategic goals.

Such a strategy should be based on, first, a definition of what the EU considers the key tenets of economic sovereignty; second, on a clarification of the EU's goals and strategy for achieving them; and third, on a review and reform of the EU toolkit so it has the right instruments.

The starting point should be a confirmation that it is in the EU's interest to remain highly open and intertwined with international partners. In the US, there is a growing debate about decoupling from China. It is likely that tariffs already imposed by the US will substantially reduce bilateral trade between China and the US.

It is also likely that the various US measures to prevent technology transfers will further contribute to decoupling from China. US actions and announcements also create uncertainties for European companies. This is already raising concerns in a number of sectors, from automobile to information technology.

A decoupling strategy cannot be in the EU's interest. First, the EU is much more open to foreign trade than the US (or even China). Its prosperity critically depends on global economic exchange.

Second, China is set to become an increasingly relevant trading partner for the EU and it is therefore in the EU's interest to engage with China.

Third, while the US is in direct geopolitical confrontation with China, the EU is not. The US would like the EU to fully be on its side in this confrontation. However, that would mean the EU to subordinating itself to US interests.

The central challenge for the EU is therefore to uphold its economic sovereignty while staying highly intertwined with both the US and China.

A multifaceted challenge

The multifaceted challenge the EU is confronted with calls for a redefinition of the EU's strategic aims, a systematic review of the instruments at its disposal and the development of a new doctrine for international relations in a more transactional, more confrontational international context.

The EU should not try to emulate the US and China. It will never wield discretionary power in the ways that they do. Its economic system is based on explicit, stable principles, and it will remain so. State intervention is and will continue to be bound by the rule of law. These characteristics are not weaknesses. They are strengths.

But in a world of mutual dependence, economic sovereignty hinges on the ability to project economic power in response to economic aggression, and on the robustness and diversification of the domestic economic system in order to minimise damage. This is where the EU has to engage in significant retooling.

Three essential aspects of the issue are technology, finance and the EU's participation in global governance.

Technology

There is no such thing as technological independence in an open, interconnected economy. But an economy of 450 million inhabitants (excluding the UK) with a GDP of €14,000 billion can aim to master key generic technologies and infrastructures. The EU's aim should be to become a player in all fields that are vital for the resilience of the economic system and/or that contribute to shaping the future in a critical way.

This concept of technology sovereignty inspired major past EU initiatives in fields including energy, aviation, aerospace or geopositioning. It applies equally to today's infrastructures – digital networks and cloud computing – and to new fields such as genomics and artificial intelligence.

Technology is central in five debates that pervade strategic discussions:

1. *Innovation and education base:* Does the EU still possess a sufficiently wide world-class education and research base to be able not only to compete but also to understand key technological developments?

Europe so far has not had a broad discussion on the overall issue of technological sovereignty and has not defined its strategic aims in this respect

2. *Security of supply of key inputs:* Does the European Union have enough self-standing technology companies that can ensure secure supply of critical pieces if needed?

3. *Critical digital infrastructure:* The debate here focuses on the vulnerabilities of digital networks and the security implications of potential control of their key components by foreign powers[15]. A related issue is whether cloud computing should be located within the EU as it represents a critical infrastructure[16].

4. *Capacity of European firms to compete in the face of Chinese state subsidies, weaker merger control, lack of market access and forced technology transfers*. The EU's liberal and social market economy is now in direct competition with a very different Chinese political-economic model, which has a less clear separation between the state and business[17].

5. *Appropriation of rents in a data-driven economy*. In a winner-takes-all network industry, US firms have secured dominant positions, but Chinese rivals are catching up fast. US and Chinese firms have advantages in network industries that could result in entrenched monopolies – with long-lasting consequences for Europe's ability to compete in cutting-edge technologies.

Although Europe has designed responses to several of these challenges, so far it has not had a broad discussion on the overall issue of technological sovereignty and it has not defined its strategic aims in this respect. The EU and its member states possess a battery of proactive instruments to strengthen the framework conditions for European companies to prosper. Arguably, these proactive tools are under-utilised.

Proactive instruments that aim to support Europe's technological capacity to lead do not raise issues of principle. Industrial policy is traditionally more controversial but we agree that the EU needs to become better in supporting the basis of entrepreneurial success in Europe. In relation to more reactive or even protective instruments, a careful balance needs to be achieved.

The EU should remain an economy that is open to foreign investment and com- petition. Economic research is unambiguous: FDI and competition create jobs and increase growth. However, some essential interests deserve protection because Europe's autonomy and sovereignty would be severely impacted if dominated by foreign powers.

It is not the purpose of this paper to discuss in detail which initiatives the EU should take to catch up in education and research, improve infrastructure, make better use of the scale of the internal market, reform tax systems or even engage in specific industrial policy endeavours.

We only want to emphasise that such actions are integral, and often critical, to any economic sovereignty initiative. In what follows we focus on three specific topics that are prominent in the discussion with China: state aid control, merger control and investment and export control.

State aid control
Companies receiving generous state support or tax privileges distort markets. Effective control of state aid to foreign companies, on European markets and extraterritorially, is important to ensure a level playing field. To this end, competition law should be applied in a non-discriminatory way, regardless of the origin of the firm; the criteria for pursuing cases should be where markets are distorted by state aid or leniency towards excessive market power.

In theory, the avenue to pursue is to build on the World Trade Organization agreement on subsidies and countervailing measures, which provides a platform for an international collaboration and could help the EU to react in the case of subsidies that distort international trade (Mavroidis and Sapir, 2019). However, the current framework suffers from three main problems (Petropoulos and Wolff 2019).

First, the notification of subsidies is not fully transparent and its efficacy is limited. One important reason is the difficulty in dealing with state-owned enterprises. Second, remedial action is slow and complex. Third, EU state-aid rules apply to both goods and services, while the WTO rules apply only to goods. In EU economies – which are increasingly driven by services, by networks and data – focusing only on subsidies in the goods sector is insufficient.

As well as working towards more effective WTO instruments, the EU thus needs to ensure a level playing field in the EU economy. The European Commission vigilantly monitors direct or indirect subsidies provided by EU member states to national companies. The same vigilance should apply to state aid provided by foreign governments.

The main venue for tackling distortions arising from state subsidies remains the WTO, but this should be no excuse for failing to exercise vigilance. In the event WTO-based measures are not enough to ensure a level playing field, the EU should consider reviewing its competition policy instruments and their possible application to state aid emanating from foreign governments.

Merger control

Increasing returns, network effects and innovation rents contribute to the emergence of winner-takes-all markets. Competition policy in such markets affects technological leadership and has implications for sovereignty. But it is a delicate question whether, as argued by the German industry association (BDI, 2019), merger control should be relaxed to allow for the market-driven creation of European champions, or whether the Council of the EU should be given a final political veto on competition policy decisions, as argued by the German and French economy ministers[18].

We agree with the aim of strengthening the competitiveness of European companies and of assessing potentially dominant positions by looking beyond the confines of the EU market, but we doubt that a strategy of relaxation of competition principles is appropriate. Strong competition on the domestic market is often conducive to success on global markets. We also consider it unlikely that less competition domestically will make EU companies more able to enter foreign markets, including the Chinese market.

The core of the issue is the balance between producers' and consumers' interests. We agree that competition policy should review how to take into account the contestable character of domestic market shares (that is, the threat of entry and its consequences for the pricing behaviour of incumbent producers) and that a forward-looking definition of the pertinent market is important.

But we disagree with the view that competition rules should be amended to give more weight to producers' interests. The very purpose of competition policy is to protect consumers from abuse by the producers of market power, and this principle should be upheld – even more so in a context of increasing concentration and market power at worldwide level.

We also reject the idea of politicising competition policy decisions. Competition policy decisions have a judicial character and they should be taken by independent authorities.

However, we agree that there might be instances when clearly-defined security interests could justify relaxation of a merger decision. For example, in certain key network infrastructures, there might not be much competition among European producers, but disallowing a merger would mean that a foreign company will dominate that infrastructure, with negative implications for security.

In our view, there should therefore be security control mechanisms in merger control. The dilemma facing the EU, and as seen in the debate over a European equivalent to the US Committee on Foreign Investment (CFIUS), is that EU countries define what national security is – and the mechanism allows them to block a merger from a third country. But who could define that for intra-EU mergers?

Our proposal would be to empower the EU's High Representative to invoke a security clause, which would then lead to a Commission college decision on whether to overrule the proposal from the Competition Commissioner. The activation of the clause would have to be based on a clearly defined and limited set of criteria directly relating to security concerns.

This solution would not require a treaty change and would avoid the politicisation of competition policy decisions. It would, admittedly, require a strengthening of the High Representative and the European External Action Service. But we regard such potential developments as positive.

Investment and export control

The US and the EU are strengthening their investment screening and export control instruments (see Box 2 for the US). However, their approaches and even their aims differ significantly. The US explicitly intends to make use of these instruments to preserve technological leadership, restrict access to critical technologies and serve unspecified foreign policy goals.

It grants wide discretion to the executive to determine what their scope will be. By contrast, the EU initiatives are motivated by much more specific aims, of which technological lead is not part. At the EU level, the scope for discretionary decisions is also much more limited.

Box 2. The revised US approach to export control and foreign direct investment screening

The US in late 2018 updated its legislation[23] on export control and investment screening to address its concerns on China, in particular concerns on technology diffusion. The Export Control Reform Act of 2018 (ECRA) and the Foreign Investment Risk Review Modernization Act of 2018 (FIRRMA) were officially signed into law on 13 August 2018. These laws aim at enhancing export and investment control respectively and address the concern that US critical technology is released to *"end uses, end users and destinations of concern."*

Implications of ECRA and FIRRMA
The US Department of Commerce's Bureau of Industry and Services has the authority to impose restrictions on exports that *"provide the United States with at least a significant military or intelligence advantage, or for any foreign policy reason."* This broad statement gives the executive extensive discretionary powers to limit or ban exports.

The legislation expands the jurisdictional reach of export controls and tightens restrictions. For example, it establishes an interagency review process in order to identify emerging and foundational technologies currently not covered by export controls. Furthermore, the process to obtain export licenses for critical technologies will be more restrictive.

The objective of FIRRMA is to overhaul legislation in relation to an existing inter-agency committee, the Committee on Foreign Investment in the United States (CFIUS). CFIUS is authorised to review certain foreign investments and determine their impact on national security. The new law widens the range of transactions to include non-controlling investments in US firms that are engaged in critical technology or other sensitive sectors.

The law also establishes the Critical Technology Pilot Program (CTPP), which focuses on the implementation of the FIRRMA related to businesses that *"produce, design, test, manufacture, fabricate, or develop one or more critical technologies."* The text highlights that a delay in the CTPP *"would create an unacceptable risk of erosion of US technological superiority."*

Critical technologies

The rule establishing the CTPP lists[24] critical technologies including defence articles, chemical, biological, nuclear and missile technology, and emerging and foundational technologies defined in section 1758 of ECRA.

A review process that defines these technologies is at time of writing underway, but according to the legislative text, representative technology categories include: biotechnology, artificial intelligence, position, navigation and timing (PNT) technology, microprocessor technology, advanced computing technology, data analytics technology, quantum information and sensing, logistics technology, additive manufacturing, robotics, brain-computer interfaces, hypersonics, advanced materials, advanced surveillance technologies (Federal Register, Vol. 83, No. 223 p. 58202).

As far as foreign investment is concerned, the EU and its member states are bound by the provision of the Treaty that prohibits restrictions on the free movement of capital (Art. 63 TFEU). Unlike in the US, limitations on FDI, including from third-country companies, cannot be justified by such broad aims as the preservation of technological leadership.

And while a clause of Article 64 TFEU provides an escape from the prohibition of restrictions on capital flows from or to third countries, it requires unanimous agreement of the EU member states. The potential for blocking foreign investments remains therefore much more circumscribed than in the US case.

Several EU countries have introduced, or are considering introducing national security exceptions to standard investment rules. In the UK, the government announced in 2018 that foreign-initiated mergers and investments that might raise national security concerns will be subject to national security assessments. In the event an assessment concludes that there is a risk to national security, the government will impose remedies or block an investment altogether[19]. Similar provisions have been introduced in Germany[20].

On 14 February 2019, the European Parliament adopted an EU framework[21] for screening foreign direct investment. The regulation introduces a mechanism for cooperation and information-sharing among member states but stops short of giving veto powers to the Commission.

The objective of the framework is greater coordination of national security-related screening of foreign investment. It will help increase awareness as well as increase peer pressure across the EU. But it does not establish an independent EU authority for investment screening.

Foreign investment can be banned if infrastructure is used in a way that threatens national security. The list of EU-wide interests over which the Commission has the right to issue an opinion is much narrower than US export regulation and CFIUS.

On export control, the EU's regime is limited to dual-use exports (exports of items that can be used for both civilian and military purposes) with a clear focus on peace and security and non-proliferation of weapons of mass destruction.

A draft regulation[22] proposed in 2016 by the European Commission and under consideration at time of writing, would broaden the definition to include cyber surveillance technology, clarify intangible technology transfer and technical assistance and add a requirement for authorisation of export items not explicitly listed. However, the focus remains on security and human rights aspects rather than on safeguarding technological superiority, as it is in the US.

In our view, the EU is right not to emulate the US in its approach to investment and export control. But the European CFIUS framework is unsatisfactory because it keeps the definition of security concerns at the national level – while an integrated single market requires more than coordination to effectively protect security interests across the EU.

The EU should develop a common approach and common procedures for the screening of foreign investments and it should empower the Commission with the right to recommend on security grounds the prohibition of a foreign investment. The final say should belong to the Council deciding by qualified majority.

Furthermore, not all decisions are of a black and white nature. For this reason, the EU should also develop instruments, such as a dedicated investment fund. This would make it possible to offer member states alternatives when foreign investments are deemed undesirable.

Finance

The EU has long regarded global finance as a domain in which the US-led multilateral order reigned supreme. Reflections on the reform of the international monetary system notwithstanding, the working assumption has been that the US dollar would remain the reference global currency for trade and investment purposes and the global financial architecture would remain centred on the Bretton Woods institutions. As far as payment infrastructure was concerned, the issue was simply not on the radar screen.

These assumptions – which were already somewhat shattered by the global financial crisis and the euro area crisis – have been challenged by the US decision to leverage its central role in the global monetary and financial system to impose its own international policy preferences.

At the same time, China's assertiveness and its declared intention to promote the international role of its currency and to develop its own financing instruments indicate looming tectonic changes in the global monetary architecture.

An already heterogeneous global monetary and financial system is now confronted with a real risk of fragmentation, if not ultimately break-up. In this context the EU is confronted with a series of strategic choices.

Global currencies

With a share of about 22 percent, still close to the 1999 level (but significantly below the level reached in the early

2000s), the euro is the second international currency after the US dollar and significantly ahead of other currencies. As far as central bank reserves are concerned, the euro's share in 2017 was 20 percent compared to 63 percent for the US dollar, 5 percent for sterling and the Japanese yen, and 1 percent for the Chinese renminbi. Clearly, the euro is an important international currency with a strong regional reach and a strong role in the invoicing of euro area trade flows, but is very far from challenging the dominance of the US dollar.

Ten years ago, Pisani-Ferry and Posen (2009) mentioned five factors that then accounted for the limited international reach of the euro: a limited economic base, financial fragmentation, uncertain governance, non-economic limitations (by which they essentially meant the lack of an European security policy) and a discouraging stance towards its *de-jure* adoption by third countries.

In the meantime, the euro crisis has shattered confidence in the solidity of the European currency, though progress has been made on governance. The other observations made by Pisani-Ferry and Posen (2009) remain valid.

The EU's official doctrine has long been that it neither encourages nor discourages an international role for the euro. However, the European Commission (2018) adopted a more positive tone and outlined proposals that would contribute to increasing the use of the euro by non-residents, including the promotion of its use for international agreements and trans- actions in the energy and food sectors, and for invoicing for sales of aircraft[25].

Piecemeal initiatives are unlikely to bring about significant change. Three reforms could however significantly affect the international role of the euro:

1. *The creation of deep and integrated European capital and banking markets:* Numerous obstacles such as differences in regulation or supervision obstruct the cross-border integration of financial activities. There

is still much too much ring-fencing in the euro area for pan-national banks to emerge. As a result, financial markets remain relatively fragmented and are insufficiently deep and liquid for foreign investors to invest in.

2. *The creation of a euro area safe asset:* As emphasised by Coeuré (2019), euro-denominated safe assets amount to a small fraction of dollar-denominated safe assets. There is little doubt that the creation of a non-national benchmark safe asset would greatly increase the attractiveness of the euro for international investors, but there is also little doubt that even if such an asset would not involve debt mutualisation, its creation would require significant political obstacles to be overcome[26].

3. *Swap lines to central banks* of countries where the euro is widely used by the private sector. Swap lines are essential to ensure that banks operating in a foreign currency can retain access to liquidity even at times of market stress, which is why during the global financial crisis the Federal Reserve extended liquidity lines to a web of central banks in advanced countries[27].

However, the provision of such swap lines can involve fiscal risk. For this reason, the European Central Bank in 2008-09 did not directly provide euros to then non-member countries. Overcoming this limitation would therefore require political support and would boost the euro as a truly international currency.

Global financial architecture

The global financial architecture was initially conceived as a single system structured around two sister institutions: the International Monetary Fund and the World Bank. Regional development banks also provided support, but within the framework dominated by the Bretton Woods institutions.

In recent times the system has evolved in at least two significant ways:

1. A web of financial safety nets has supplanted the single net once provided by the IMF. Now, credit lines potentially available from bilateral swap lines, most significantly the Federal Reserve, and regional financing arrangements such as the European Stability Mechanism and the Asian Chiang Mai Initiative each account for amounts broadly equal to the IMF's total resources;

2. A series of new development finance institutions has been created, the most notable of which are the Shanghai-based New Development Bank (2014) and the Beijing-based Asian Infrastructure Investment Bank (2015). Furthermore, China launched in 2013 the Belt and Road Initiative, through which provides investment credit to a wide range of countries.

These changes have been significant enough to raise concerns about the fragmentation of the global financial architecture and to prompt calls for *"bold and defined steps to ensure that today's institutions – global, regional and bilateral – work together as a system"* (G20 Eminent Persons Group, 2018).

An unravelling of the post-second world war financial order is indeed possible. Growing tensions between the US and China could, for example, lead the US to assert dominance over the Bretton Woods system (where it holds a blocking minority) and lead China to secede from it and build a separate system of bilateral, regional and multilateral financing arrangements. Short of outright fragmentation, adversarial behaviour within the multilateral institutions is also a distinct possibility.

To cope with these challenges, the EU is equipped with two significant financial instruments: the European Investment Bank (EIB), with goals of fostering infrastructure development, innovation, investment in smaller companies and the transition to a low-carbon economy in the EU, and the recently-created European Stability Mechanism, which has the core mission of providing financial assistance to euro area countries that risk losing market access.

Both institutions are focused on the EU: 90 percent of EIB lending goes to EU countries, and the ESM's scope is limited to the euro area. The EU also contributes, alongside the IMF, to financial assistance to non-euro area members (balance-of-payment assistance) and to partner countries (macro-financial assistance).

Europe is also home to several financing institutions, the most significant of which is the London-based European Bank for Reconstruction and Development. The EBRD was established in 1991 to support the private sector in central and eastern Europe and the former Soviet Union during the transition to a market economy.

It has a diversified shareholder base, with the EU-27 and its member states accounting for 54.3 percent of total capital, and the UK for another 8.5 percent. The United States is also a founding member and holds a 10 percent capital share. China joined EBRD in 2016, holding 0.096 percent capital share. The bank has gradually broadened its scope to intervene in the Maghreb, Egypt, the Middle East and Mongolia.

The EU so far has not taken a strategic approach to the reshaping of the global financial architecture. Moreover, US-EU agreement can no longer be taken for granted. Europe should think strategically and prepare options for responding to a transforming international system. Specifically:

1. *The EU should prepare for the possibility of a politically- or geopolitically-motivated stalemate over the provision of IMF assistance to a neighbouring country*. Currently the EU is not equipped to provide such assistance outside the context of an IMF programme.

A way to make this possible could be to amend the treaty establishing the European Stability Mechanism so that the ESM could provide conditional assistance to third countries. A possible, though financially less-potent alternative, could be to reform the balance-of-payments instruments for third countries funded by the EU budget to make this provision independent of the IMF;

2. *The EU should define its strategy towards the role of European development banks in third countries*, and the division of tasks between them. The EIB and the EBRD have different mandates but also different shareholders, with the EIB being 100 percent controlled by the EU whereas the EBRD is a Europe-based international institution with a predominantly EU shareholder base (including after Brexit).

There are two clear ways forward: to give the EIB, which has so far been mostly focused on investment within the EU, a greater international role; or to broaden the geographical scope of EBRD operations to turn it into a sort of a European counterpart to the Asian Infrastructure Investment Bank.

The first option would have the advantage that the EU would retain total control, and the downside that the EIB has limited experience of investment in third countries. The second option would build on the EBRD's international experience and on its wider shareholder base. Relying on such a strategy would have the advantage of leveraging the EU's involvement in it.

Payment infrastructure

The willingness of the US to exercise political power over the international payment system makes European firms vulnerable to unilateral pressure. The depth of the EU's and US's economic and financial interdependence would make it extremely difficult to ensure autonomy through the building of parallel systems, as pursued by Russia.

The creation of a special vehicle for Iran should therefore be regarded as a political signal rather than an actual channel for significant transactions. In our view, there is a need to strengthen Europe's political power and make it more able to withstand pressure, if necessary through the adoption of appropriate and proportionate economic retaliatory measures.

At the core of the global payment infrastructure is a financial messaging service, SWIFT, which is used for almost all cross-border payments. Such a global public good can only function well if all major players support its activities.

By its very nature, it is highly interconnected, and is therefore also subject to political pressures from governments. Disconnecting a country's banks from the SWIFT financial messaging systems isolates that country almost

The willingness of the US to exercise political power over the international payment system makes European firms vulnerable to unilateral pressure completely from the global financial system, curtailing its ability to conduct business even with countries that have not sanctioned it.

In November 2018, as a result of US pressure, SWIFT, registered and governed under Belgian law, disconnected Iranian banks, saying the step, *"while regrettable, [had] been taken in the interest of the stability and integrity of the wider global financial system."* The US can monitor SWIFT data thanks to a deal with the EU on the US Terrorist Finance Tracking Programme[28] and, in case of non-compliance with the US sanctions, the US Treasury could have sanctioned SWIFT, its executives or its board members.

China and Russia had already noticed the vulnerability that participation in such an interconnected payment system presents. They started collaborating on a payments system in 2014-2015[29]. They have now fully functional domestic payments (and some domestic cards) and intend to connect them; other countries have expressed an interest in joining.

The option of separating out its financial (and, as a consequence, economic) system from that of the US is not one the European Union can pursue or wishes to pursue. The only way for it to oppose unilateral US secondary sanctions with which it disagrees is to rely on retaliation. The size of the European economy and the European market would be large enough for the threat of retaliatory measures to weigh significantly on US unilateralism.

Global governance

The EU plays a key role in multilateral organisations including the IMF, G20 and WTO. It regards these as fundamental pillars of the rules-based global system. Over last decade, voices of discontent with globalisation and its governance have become more forceful.

However, increased interdependence and the emergence of true global public goods call for more cooperation on a global scale. In more and more areas, however, the best options on offer are non-binding coordination procedures and soft pledge-and-review mechanisms.

The challenges for the EU are, first, how to make effective use of its voice in existing international organisations, and second and more importantly, how to promote effective collective action on a global scale.

IMF

The EU's voting share at the IMF (EU 29.61 percent; of which UK: 4.03 percent) exceeds by far that of the largest single shareholder – the US 16.5 percent – and is well above the veto threshold. China, by contrast, only has 6.1 percent of the voting rights. For important decisions, 60 percent of the members that hold at least 85 percent of the vote is required, meaning that both the US and the EU hold veto power, whereas China, India, Brazil, Russia and South Africa jointly fail to reach the veto threshold[30]. This representation has given the EU significant influence, though the EU is generally assessed as less influential than the US.

The EU's mixed-representation model appears to give it significant weight in multilateral forums, with the added complexity that not all EU member countries are members of these clubs. The EU28 has 25 percent of the G20 seats (not counting guest countries), because individual country membership is complemented by the EU as a member (though the EU cannot hold the presidency). The EU has been similarly influential at the Financial Stability Board and the Bank for International Settlements.

Whether a single EU or euro area seat would strengthen EU's influence at the IMF has long been discussed. In any case, the roots of external weakness are found in internal division: the coexistence of opposite views and philosophies within the EU is not conducive to unified external positions.

In other words, the problem is more of substantive positions than of institutional representation. Furthermore, there is currently no appetite among EU countries to delegate external representation to the EU level.

The EU however faces a stark choice. In the context of heightened US-China tension, persistent under-representation of China and other emerging countries in the multilateral institutions mirrored by persistent European over-representation against the background of its diminishing economic weight, is likely to strengthen the emerging world's defiance against what is often perceived as Western-dominated institutions serving as guardians of a Western-biased global order.

The trade-off for Europe is clear: fight to preserve the power it enjoys within the Bretton Woods system at the risk of precipitating the fragmentation of global governance, or accept a diminished role, as a condition for more involvement in, and ownership of the global institutions by China and other rising powers. The right path is not obvious but the perennial and regularly postponed debate on the consolidation of EU or euro area chairs in the Bretton Woods system should not be postponed much longer.

WTO

The WTO is at risk of disintegration with its dispute resolution framework already near collapse. The US has criticised the WTO for being unable to uphold rules and for regulatory overreach, but it is also openly defiant of multilateral rules that constrain its freedom of manoeuvre.

China has not transformed into a market economy, which everyone hoped would be the result of its membership of the WTO. State capitalism, property rights and developing country classification need to be addressed. A fundamental goal of international rules on trade is to prevent a large economy from unfairly using its size as an advantage. The US's invoking of a national security clause to impose tariffs is particularly worrying, as it did, for example, in 2018 for steel and aluminium tariffs, and is threatening to do for cars. It leaves it up to the EU to find partners to uphold the basic principles of free and fair competition in trade.

The EU has the market size and institutional capacity to do so, while the open US-China trade war gives other countries reasons to reach out to the EU.

Unlike the US, China considers itself a champion of trade multilateralism and the WTO. The EU and China have actually declared their intention to collaborate on reforming it. However, China's support to multilateral trade principles lacks depth. While it may abide by the rules of the WTO, it does not abide by their spirit.

It is legitimate and normal for China to increase its global footprint; the fact China has now the economic and political muscle to do so requires strategic thinking in the EU

This is why EU agrees with the US that WTO reform is necessary to better uphold the WTO principles and to address the risk that trade rules fail to take into account the specificities of the Chinese economic model and therefore fail to tackle unfair competition from Chinese producers.

The EU's aim should be to preserve the multilateral trading system as a core infrastructure of globalisation. The EU as an open economy with a large internal market can best leverage its influence over the global rules through a multilateral system. The same applies in a series of other fields, from greenhouse gas emissions mitigation to banking regulation.

But if this approach fails to gain enough traction, as is likely to be the case, alternatives need to be developed. Even post-Trump, the world is unlikely to return to the post-war multilateral architecture. Global governance is bound to be more patchy, more fragmented and more often based on weak mechanisms.

As a strong proponent of a rules-based system, the EU should equip itself for this new configuration. Dadush and Wolff (2019) proposed concrete action for an EU trade strategy in the case the WTO ceases to function.

Conclusions and recommendations

The EU needs a change of mindset to address threats to its economic sovereignty. It must learn to think as a geopolitical power, define its goals, and act strategically. After decades during which priority was given to internal integration – through the single market, common regulations, common policies and the creation of a common currency – it needs to refocus its attention on its relationship with the rest of the world.

Building economic sovereignty does not imply turning one's back on globalisation or refraining from taking an active part in global collective action. Global competition and linkages are good for growth, innovation and consumer choice. Europe's aim is not, and should not be, to reduce trade or investment links with the global economy. It should be to strengthen the rules-based order, not to undermine it.

Building economic sovereignty also does not mean containing the spread of technology. Such an attempt would most probably be unsuccessful: even at the height of the Cold War, technology diffused broadly within a matter of years. In the current much more interconnected world, technological leadership depends on continuous investment and innovation and benefits from engagement and cooperation.

Concretely, the EU is bound to benefit from cutting-edge Chinese technology. The EU's aim should be common and effective rules for intellectual property, investment and subsidies. Simultaneously, it should strengthen Europe's capacity to protect core infrastructure where direct security interests are at stake and to respond effectively to foreign initiatives that undermine its economic sovereignty.

Building economic sovereignty, however, requires the EU to stop thinking and acting as a 'fragmented power'. Currently, European economic governance purposefully ignores geopolitical considerations. Because of a division of tasks in which Brussels deals with international economic concerns such as trade, while related geopolitical issues belong largely to EU member states, the EU has behaved as a fragmented power (Sapir, 2007).

It has enormous potential power, but its decision-making structures are too disjointed to use that potential. It is high time to unlock this potential. Building European economic sovereignty will involve patient negotiation between European partners on a series of specific, often technical measures, and a gradual implementation period.

Not all EU countries have the same perception of their sovereignty and the threats it faces. Some are simply too dependent on the US security umbrella to oppose almost any US initiative. Some have built strong economic ties with China and refrain from criticising it. In the fields of trade policy or single market regulations, where policy initiatives are by nature common, compromises will need to be found. In others such as industrial policy or cyber security, variable-geometry approaches can be implemented.

Details matter. It is easy for economic measures justified on geopolitical grounds to be captured by special interests and to lapse into protectionism with lasting negative consequences for both economic growth and national security. State aid intended to maintain technological competitiveness can easily become inefficient jobs programmes.

Efforts to broaden the use of the euro can easily morph into subsidies for favoured banks. These risks imply that such measures need to result from a considered process that is capable both of weighing the trade-offs between economic efficiency and national security and of maintaining a reasonable distance from special interests.

To both achieve a change in mindset and to give it institutional expression, we recommend a four part strategy for the EU:

1. An economic sovereignty agenda

2. A reformed policy toolkit

3. An effective machinery

4. A flexible implementation strategy

An economic sovereignty agenda

We propose an economic sovereignty agenda focused on European and national measures that will create opportunities and incentives to integrate economic and geopolitical considerations at the appropriate levels of governance. The agenda should have four key goals:

- Boost Europe’s research, scientific, technology and innovation base;
- Protect assets critical to national security from foreign interference;
- Enforce a level playing field in both domestic and international competition;
- Strengthen European monetary and financial autonomy.

This effort should be top of the policy priorities of the new European Commission when it takes office in late 2019. We would suggest that the new Commission president should outline this economic sovereignty agenda in his or her first speech to the European Parliament, and should publish a more detailed proposal by early 2020.

A reformed policy toolkit

The EU has reasons to be proud of its policy system. It has been able to grow into a respected regulatory, trade, competition and monetary giant whose initiatives measure up to those taken by other major powers. It has done this while ensuring levels of transparency, integrity and effectiveness that meet the best global standards.

But the EU has to adapt its policy toolkit to cope with the new reality of greater geopolitical and geo-economic competition. New initiatives are necessary in eight key fields:

1. State-aid control should not be limited to EU companies. The EU should vigilantly monitor distortions to international trade and investment resulting from support provided to industry by foreign governments. Direct and indirect subsidies should, if possible, be tackled in the context of the WTO. If not possible, the EU should consider reviewing its competition policy instruments and their possible application to state aid granted by foreign governments.

2. Building on a strong and independent competition policy, the EU should define precise procedures to take into account economic sovereignty concerns in competition decisions. European Commission merger control and the abuse of dominant position decisions should remain based on economic criteria and on independent, legally-grounded assessments.

Importantly, competition policy exists to protect consumers not producers. The EU needs to avoid politicising competition enforcement or it risks capture by powerful producer interests. However, competition policy decisions should also take into account the broader scope of internationalised markets and whether incumbents' market power can be tamed by the threat of potential entry.

To address cases in which competition policy decisions might raise security concerns, the EU's High Representative for Foreign Affairs and Security Policy should be given the right to evoke a security clause and object to a decision proposed by the competition commissioner.

3. Because foreign investment gives access to the entire internal market, the EU cannot regard investment control as a purely national affair. It should develop a common approach and common procedures for the screening of foreign investments and empower the Commission with the right to recommend on security grounds the prohibition of a foreign investment.

The Council should be given the right to decide by qualified majority vote to block a foreign investment based on a Commission recommendation. The current investment-screening mechanism is a step in the right direction but it is insufficient to tackle the common dimension of decisions relating to foreign investment. The EU should also develop instruments, such as a dedicated investment fund, to offer member states alternatives when foreign investments are disallowed.

4. As the world evolves towards a multi-currency system, economic sovereignty will increasingly require a greater international role for the euro. But the euro will not become a truly international currency without EU initiatives to support it in this role.

Three conditions are crucial: first, a deep and integrated capital and banking market; second (and related), the creation of a euro area safe asset; third, the ECB should be able to extend swap lines to partner central banks so they can serve as lenders of last resort to local banks conducting business in euros.

5. The EU should prepare for the possibility of a politically- or geopolitically-motivated stalemate over the provision of IMF assistance to a neighbouring country. It should consider how an external role could be given to the ESM or how to strengthen EU-budget funded balance-of-payments instruments available to third countries.

6. The EU needs a strategy for development banks. It should determine whether it intends to develop the external role for the EIB or rather to leverage its investment in the EBRD to turn it into a truly multilateral development institution based in Europe and controlled by European shareholders.

7. The EU should also stand ready to respond to unilateral sanctions it disagrees with through appropriate

and proportionate economic retaliation measures. While it can explore ways to overcome secondary sanctions and permit domestic companies to continue to trade with third countries recognised by the EU as legitimate partners, the creation of special vehicles for such transactions will never lead to significant outcomes.

8. The EU should preserve and leverage its influence over multilateral institutions. But this requires giving consent to an accelerated rebalancing of quotas and votes, without which European countries could end up enjoying oversized power in diminished institutions. Rebalancing should also be accompanied by a consolidation of European chairs, although that might not in some cases increase European influence.

An effective machinery

European governance was not built to implement an encompassing economic sovereignty strategy, but rather to manage separately sectoral policies. Reforms are thus needed, as follows:

A European Commission Economic Sovereignty Committee: the European Commission has already prioritised making the EU a stronger global player. The priority area brings together several relevant European commissioners (foreign and security policy, neighbourhood and enlargement, trade, international cooperation and development, civil protection and humanitarian aid under the chairmanship of the High Representative).

Our proposal would reform this in several ways.

- First, it would introduce an economic security element by including key commissioners whose portfolios are not generally thought of as having sovereignty implications, including competition policy, economic and financial affairs, and research, science and innovation, under the chairmanship of the Commission first vice-president.

- Second, it would introduce a standing staff for the committee with the task of tackling cross-cutting issues and monitoring compliance among directorates-general. This staff should include economic experts alongside diplomats and security specialists.

- Finally, the staff would seek to create an organic link with the staff of similar bodies in key member states, to enable coordination of economic sovereignty efforts across the levels of governance.

In addition we would suggest that a Committee on Foreign Investment in the European Union, staffed by some of the economic sovereignty staff and containing representatives of relevant directorates-general, be charged with making recommendations on the national security implications of large foreign (non-EU) investments or mergers in the EU.

This committee would present its recommendations to the High Representative and the College of Commissioners. Also, an office of Financial Sanctions Enforcement staffed by representatives of the European External Action Service, the Directorate-General of Economic and Financial Affairs, and relevant member state representatives would closely coordinate with banks and other financial institutions to ensure that European sanctions regulations are strictly enforced. It would also impose penalties on entities that violated sanctions.

A flexible implementation strategy
Implementing these changes cannot be just a Brussels-based EU-wide effort. This is not only because many relevant powers remain with the member states, but also because economic sovereignty issues can be divisive within the EU.

Perceptions of threats and attitudes towards Russia, China and the United States are far from uniform. It is also because the EU and its member states will need to coordinate closely with other European partners, starting with the post-Brexit UK, which is likely to share many of its neighbour's priorities and concerns.

While an EU-wide approach is desirable, a more flexible approach based on 'minilateral' groups of states is likely to be necessary. As we have noted, EU member states differ significantly in their perceptions of security threats, their vulnerability to external pressures and their attitudes towards both the US and China.

Whatever involves the functioning of the single market or the customs union will need to be agreed on by the whole EU but for other aspects, a club-type approach similar to that advocated by Demertzis *et al* (2018) is likely to be the best short-term option. The overarching intent is to create structures that integrate economic and national security considerations at both European and member-state levels. ■

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Endnotes

1 There are of course many other threats or potential threats to European economic sovereignty. Russia is one, but its economic leverage is limited by its economic incapacity. Even its ability to wield the energy weapon is in decline, thanks to increasing energy diversification, EU efforts to liberalise the European gas market and the related programme to build interconnectors to link European gas markets. Non-state actors might also constitute a threat to economic sovereignty by damaging critical infrastructure or influencing election outcomes, with potentially significant economic consequences.

2. Wu (2016) described well the challenge for Europe: "When embarking on the process of reintegrating China, China's major partners may not have anticipated the extent to which the Chinese Party-state would reshape its economic structure along its own unique path. Over the past decade, we have witnessed the rise of 'China, Inc.,' a form of economic exceptionalism with intertwined linkages between the state, the Party, and public and private enterprises."

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6. Available (in Italian) at: www.governo.it/sites/governo.it/files/documenti/documenti/Notizie-allegati/Italia-Cina_20190323/Memorandum_Italia-Cina_IT.pdf

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8. One example seems to have been Geely's February 2018 increase in its ownership stake in Daimler. Another example is the 2015 Chinese acquisition of Swedish company Silex Microsystems, which helped the Chinese transfer a key technology to China. On Silex, see Emily Feng, 'How China acquired mastery of vital microchip technology', Financial Times, 29 January 2019.

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11. See for example Hallie Detrick, 'US Threatens to Sanction German Firms Constructing Russian Gas Pipeline', Fortune, 14 January 2019, available at http://fortune.com/2019/01/14/nord-stream-2-sanctions/, and Daryna Krasnolutska, 'US Reiterates Threat of Nord Stream 2 Gas Pipe Sanctions', Bloomberg, 21 May 2019, available at https://www.bloomberg.com/news/articles/2019-05-21/u-s-reiterates-threat-of-nord-stream-2-gas-pipeline-sanctions

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13. See Mark Schieritz, 'Kein Cash für die Mullahs', Zeit Online, 8 August 2018, available at https://www.zeit.de/2018/33/iran-geldauszahlung-deutsche-konten-us-sanktionen-atomdeal
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15. Vodafone, for example, has decided to exclude Huawei from participation in core telecom infrastructure (see Nic Fildes, 'Vodafone suspends installation of Huawei kit in European core networks', Financial Times, 25 January 2019, available at https://www.ft.com/content/8d55f756-2078-11e9-b2f7-97e4dbd3580d).
16. The European Commission has a dedicated Cloud Computing Strategy.
17. This concern was expressed in a January 2019 policy paper from the Federation of German industries (BDI, 2019), which prompted a somewhat dirigiste policy reaction, as highlighted in a German government industrial strategy paper (BMWi, 2019).
18. See https://www.bmwi.de/Redaktion/DE/Downloads/F/franco-german-manifesto-for-a-european-industrial-policy.pdf
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24. See https://home.treasury.gov/system/files/206/FR-2018-22182_1786904.pdf.
25 European Central Bank board member Benoît Coeuré has also highlighted the potential gains for monetary policy from a greater international role for the euro (Coeuré, 2019).
26 Zettelmeyer and Leandro (2018) argued that the most promising option might be so-called E-bonds issued by a public

entity against a diversified portfolio of loans to euro area sovereigns.
27 These swap lines were in principle reciprocal, but they were de-facto asymmetric because the US never drew on them.
28 See https://ec.europa.eu/home-affairs/what-we-do/policies/crisis-and-terrorism/tftp_en
29 See Karen Yeung, 'China and Russia look to ditch dollar with new payments system in move to avoid sanctions', South China Morning Post, 22 November 2018, available at https://www.scmp.com/economy/china-economy/article/2174453/china-and-russia-look-ditch-dollar-new-payments-system-move
30 The Executive Board is composed of 24 directors. Countries with the largest voting shares—United States, Japan, Germany, France, the UK, Russia, China and Saudi Arabia are represented individually. The remaining Executive Directors represent constituencies, or groups of countries, with European countries spread across seven multi-country constituencies.

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The European Union's response to the trade crisis

The global trading system is being challenged. Uri Dadush and Guntram Wolff consider the possible outcomes and how the EU can respond

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The global trading system, a source of prosperity, is under attack on various fronts. The causes run deep and require a strategic response from the European Union and from the main trading nations. The future of the system hinges on the answer to three questions, and the scenarios associated with them:

- Can the World Trade Organization be reformed?
- Is the United States' scepticism about the system a new normal?
- Can China undertake reforms that would make its system more compatible with the WTO?

The possible outcomes for the global trading system could be good or bad, depending on how each of these issues is resolved. Under a good set of scenarios, the EU should persist on its current course with some significant adjustments. We call this Plan A, which would aim to preserve the multilateral trading system. Under a bad set of scenarios, the EU will have to contend with a possible break-up of the multilateral trading system, requiring the formulation of a Plan B.

The EU needs today to put in place its Plan B, not only to prepare for a far less favourable trading environment, but also to clarify the trade-offs implicit under Plan A. All major trading nations must recognise that the alternative to making compromises is not the status quo, but something much worse.

Introduction

The European Union's economy has never been as closely integrated with the rest of the world as it is today. The share of extra-EU trade in the EU's GDP has increased from 15 percent in the mid-1980s to 24 percent today, while the share of intra-EU trade in total EU-trade has remained at around 63 percent over the same period (European

Commission, 2018a). The EU is now the world's largest trading bloc, even if intra-EU trade is left out. The EU's economy depends on its stable trade relationships around the world.

Table 1. International trade flows in 2017, € trillions

	Exports	Imports	Total trade
China	1.9	1.4	3.3
US	1.3	2.0	3.3
EU total	5.2	5.1	10.4
EU intra	3.4	3.3	6.6
EU extra	1.9	1.9	3.7
World	15.5	15.7	

Note: Total trade is the sum of exports and imports. Discrepancies between world exports and imports and intra-EU exports and imports are due to statistical issues. EU refers to the 28 members states of the European Union at time of writing.
Source: Bruegel based on International Trade Centre (2019) and Eurostat (2019).

But the world trading system, on which the EU's economic activity depends, is engulfed in an unprecedented crisis. How the EU responds will be critical not only in terms of the living standards of Europeans over the next decade and beyond, but also in terms of growth prospects and stability across the world.

In this *Policy Contribution*, we examine the root causes of the current problems, develop good and bad scenarios for what could happen next, and provide recommendations for how the EU should respond. We argue that the EU needs to redouble its efforts to preserve the multilateral trading system, which we call Plan A. We also argue that the EU must devote serious consideration to a Plan B, which would respond to a dark scenario in which the World Trade Organization falters. Plan B is needed not only to prepare for the worst, but also because it helps clarify the trade-offs implicit in the policy choices under Plan A.

The EU should re-examine its own red lines, reviewing its trade and macroeconomic policies with greater alacrity than is presently evident

The world trading system under attack

The trading system is under attack on three main fronts:

- First, the inability of the WTO to make progress in critical areas such as services, agricultural subsidies, investment, the facilitation of global value chains and digital trade calls into question the value of the organisation and the sustainability of its legal framework.

- Second, the United States is directly challenging the WTO's dispute settlement system by (at least up to the time of writing) blocking the replacement of members of the WTO Appellate Body[1], which could cease functioning in 2019[2]. The United States is also openly ignoring the spirit of WTO rules and engaging in managed trade. Countries that respond to the United States with retaliatory tariffs or by trying to make a deal are in danger of walking down the same path.

- Third, China is accused of not playing by at least the spirit of the rules. In the WTO context, China is accused of systematic theft of intellectual property, forcing investors in China to share such property (forced technology transfers) and employing widespread and opaque subsidisation, especially of and by its state-owned enterprises (SOEs; see for example European Commission, 2018b).

  Lack of market access and the lack of reciprocity are further concerns (European Union Chamber of Commerce in China, 2018). Some prominent US observers believe that China's economic system is incompatible with membership of the WTO, not just because of the preceding concerns but also because of the opaque and weak rule of law. The United States also objects to China's *Made in China 2025* programme, which it considers a plan to dominate the industries of the future.

The EU and Japan share many of the United States' concerns about China and are collaborating with the United States in proposing WTO rule changes. The US-China trade and geopolitical conflict undermines the stability of the multilateral trading system (see also García-Herrero, 2019).

These frictions have already done permanent damage to the system, since they have undermined the credibility of the WTO and are also encouraging countries that are so inclined to adopt protectionist measures and/or to weaken or reject proposals to strengthen the rules-based multilateral trade system[3]. For example, according to the *Global Trade Alert Report* (Evenett and Fritz, 2018), India and South Africa, which have two of the most protectionist trade regimes among the G20, adopted 926 and 230 discriminatory instruments respectively from 2008-18, and 98 and 19 respectively in 2018[4]. India raised its applied tariffs on numerous products in 2018. Unfortunately, even if future US administrations revert to policies supportive of the WTO, the doubt will persist that the

United States or another of the world's great powers will ignore or refute the system when it is opportune for their domestic politics. Less immediate, but equally important, are the concerns about China. While China formally sticks to the letter of the WTO framework, there is broad agreement in the EU and the US that state subsidisation and forced technology transfer are not satisfactorily addressed by the existing WTO agreement on subsidies and countervailing measures[5].

Causes of the attack on the trading system

The causes of the current attack on the trading system run deep and require a strategic response. The resistance to globalisation is probably in large part a result of the secular trend in skill-biased technological change which accounts for rising inequality, economic disruption and the stagnation of most incomes, a trend especially evident in advanced countries, but not only there.

Globalisation also contributes to increased disruption and inequality directly because it creates demand for higher skills disproportionately and gives rise to many 'winner-takes-all' opportunities, especially for platform companies that can scale-up quickly and inexpensively. The disruption has been made worse by the rapid rise of China and the coming-on-stream of low-skilled workers across the developing world.

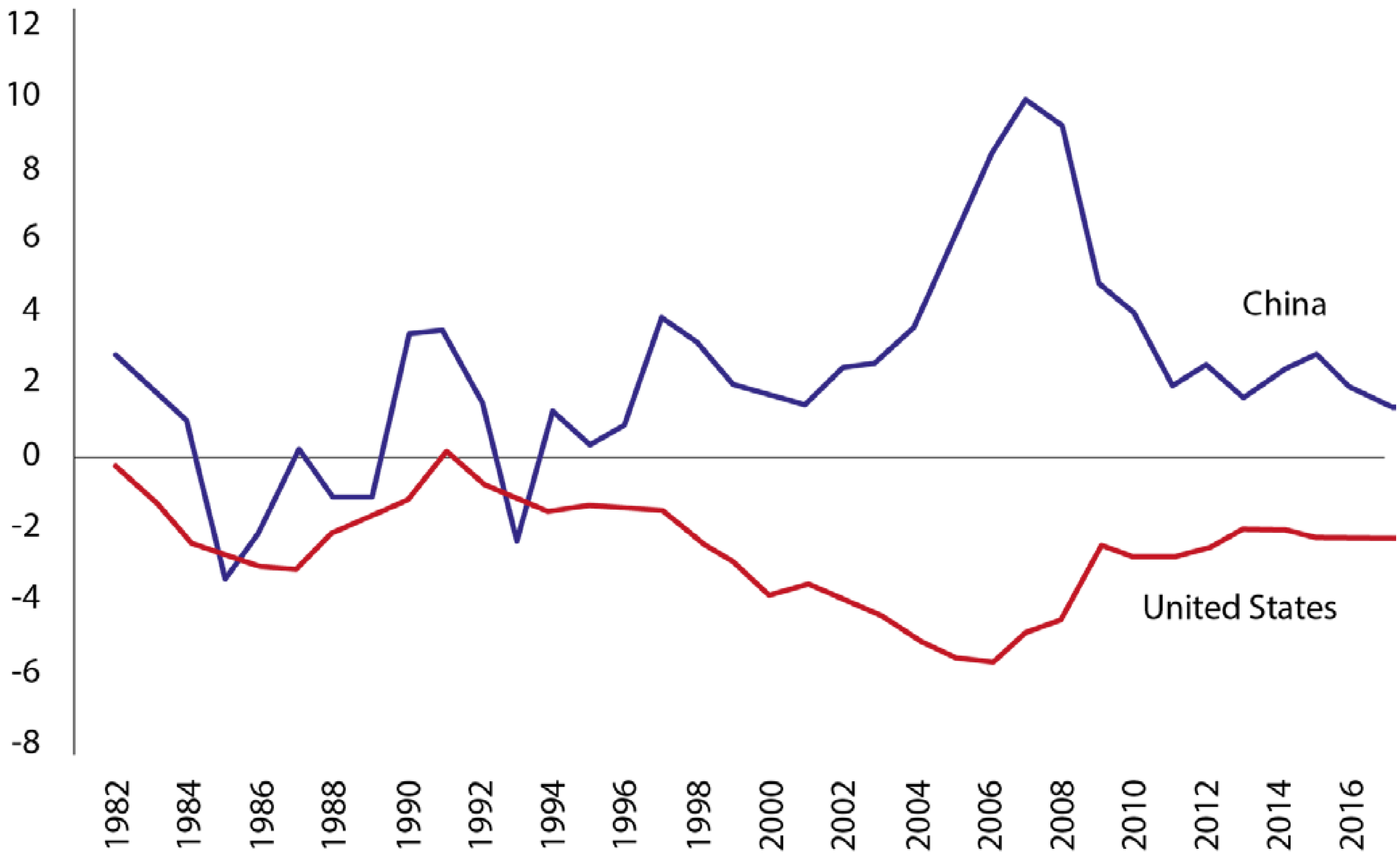
Rightly or wrongly, large current account and bilateral imbalances (Figure 1) remain a source of tension, despite the narrowing of China's overall surplus and the United States' overall deficit in recent years (the latter is widening again despite higher tariffs in 2018).

Even if economic factors are at the root, political factors – such as resurgent nationalism and fear in the United States that it is losing its primacy – also contribute to the disaffection with globalisation, and these political factors have a life of their own. Populist and nationalist leaders capitalise on the fear of globalisation to erect trade and investment barriers and to severely restrict immigration.

Brexit, though a unique phenomenon, can be read as reflecting some of these concerns. However, both export and import interests have gained in political weight with the increase in trade. With raw materials, parts and machinery accounting for 75 percent of world trade (UNCTAD, 2017), companies worry about the viability of the global value chains on which they rely.

Many people, especially young people, see their ability to buy foreign goods, invest and travel abroad as a natural right. For all these reasons, most large economies including the EU remain committed to increased openness in trade and foreign investment.

Figure 1. Current account balance as a share of domestic GDP



Source: Bruegel based on World Bank (2018).

Economic analysis shows that protectionism is not the right answer to the problems. Rather, more attention should be paid to the plight of the most vulnerable. *Ex-ante* policies include investment in skills and infrastructure, or more generally in policies that improve competitiveness. *Ex-post* policies include measures to share the gains from global integration (Freytag *et al*, 2018).

However, the national populists have typically refused such a course, preferring to blame foreigners and put up protectionist barriers. Meanwhile, mainstream politicians in Europe and elsewhere are hampered by budget constraints, or for other reasons do not pursue policies that enhance public investment and social welfare.

A case for preserving the world trading system

The world trading system has been remarkably successful in promoting trade and must be preserved. The system rests on three main pillars: the WTO, preferential trade agreements and domestic institutions.

The WTO is a global public good that supports open and predictable trade based on reciprocity. It now includes 164 members, accounting for 98 percent of world trade, with another 22 members at various stages in the accession process. The WTO provides the bedrock of international trade law, as it is based on the principle of non-discrimination across nations. It is a true globally-operating multilateral framework with enforcement rights.

Under WTO rules, regional agreements are governed under the WTO's General Agreement on Tariffs and Trade (GATT) Article 24 (substantially all trade and tariff reductions). These preferential trade agreements now cover about one third to one half of world trade. Thanks to the formation of the European Union and its bilateral agreements with partners, EU members can count typically on 75 percent of their trade being covered by them (Ahearn 2011).

International commercial disputes are prevalently resolved in domestic, not international, courts. Domestic institutions – the rule of law – that affect or directly govern international trade are crucial and are being continuously reformed. Although some of these reforms have moved in the direction of trade restrictions (according to the *Global Trade Alert Report*, Evenett and Fritz, 2018), over the last 10 years G20 countries have adopted 9,041 measures that discriminate in favour of domestic producers), for the most part, the trend over the last few decades has been in the direction of facilitating international trade and of complying with WTO disciplines.

The combined effect of multilateral, regional and domestic reforms on the freedom and predictability of trade has been remarkable. The Most-Favoured Nation (MFN) applied tariffs of low- and middle-income countries have declined by 70 percent since the mid-1980s (World Bank, 2017a). And about 85 percent of exports from the poorest countries now enter advanced countries duty-free (UN Committee for Development Policy, 2019).

The effectively applied tariffs (which take account of all preferential agreements) have declined even more. Despite a hiatus in the wake of the global financial crisis, world trade now represents a far larger share of world GDP than it did twenty and thirty years ago.

Crucial questions for the future of the world trading systems

The future of the trading system hinges on the answers to three related questions, and the scenarios related to them (see also Akman *et al*, 2019).

Can the WTO be reformed?

Good scenario: in a good scenario, the WTO's negotiating arm would be revitalised, on the condition that the membership can agree to move forward on specific issues and to address them through plurilateral agreements[6].

These would involve members who represent a critical mass of trade and who would be willing to grant concessions to non-participants on an MFN basis.

It is also possible that members accounting for a critical mass of trade could agree a plurilateral agreement that is not MFN in exchange for concessions in other areas, as happened with the Agreement on Government Procurement agreement which was approved under the Uruguay Round.

It is difficult to imagine that plurilateral agreements can be reached without the involvement of the major trading economies, underscoring the importance of the United States, China, the European Union and Japan, among others, resolving their present differences.

An important part of that discussion, in our view, will be to find ways to improve the operation of the agreement on subsidies and countervailing measures, so that it effectively constrains WTO members, especially those where the rule of law and the judiciary do not operate as they do in the US and the EU. Such improvements would also go a long way towards responding to the concerns of the US about the WTO's judicial function.

<u>Bad scenario:</u> if the WTO negotiating arm is not revitalised, the institution will lose relevance and its judicial role will be undermined. Trade law, like any law, must evolve with the times to maintain its legitimacy, requiring a functioning rule-making system.

Most urgent at the time of writing, the WTO Appellate Body requires at least three members and could cease being operational as of November 2019 if retiring members are not replaced. This would undermine the resolution of trade conflicts within a binding legal framework.

Do the Trump Administration's trade policies constitute a new normal in the United States or are they are an aberration?

Good scenario: many of the concerns expressed by the current administration, especially those related to China, will persist. However, the tone and the methods deployed will change in the future. We do not believe that the United States' body politic is likely to abandon the WTO completely. Most American politicians and American businesses do not favour a lawless trading regime, even if they do not exclude a power-based approach to China's perceived infractions.

Especially pressing today is the question of whether the United States will challenge the WTO dispute settlement system only on procedural grounds – in which case solutions might be found – or whether it has come to perceive it as an unacceptable infringement on its sovereignty.

Again, our baseline belief is that it is likely that a future United States administration would accept procedural changes to the WTO dispute settlement system that address its concerns; however, we are less sure that the current administration is prepared to do so.

Bad scenario: rightly or wrongly, an important ruling by the WTO dispute settlement body against the US could lead the US to leave the organisation. Other countries would then need to face the reality of a WTO without the US.

If the US reverts to a policy of isolation and protection – as it did for much of the nineteenth century and early twentieth century, a vast share of its exports and imports will no longer be covered by agreed rules. It is also possible that the US and other major trading nations will increasingly be tempted to ignore these rules if they cannot be updated in negotiations.

Is the Chinese system compatible with the WTO and if so, is China willing and able to implement the reforms needed to address the concerns of its main trading partners?

Good scenario: China has derived great benefits from its membership of the WTO and more broadly from policies of closer integration into the global economy. Naturally, China should want the system preserved.

However, there are clear instances of Chinese free-riding in relation to China's large SOE sector, various forms of state intervention that tilt the playing field, forced technology transfer, lack of market access and the lack of protection for intellectual property. These issues would be gradually addressed.

Bad scenario: China refuses or is unable to undertake the reforms to its state capitalist system that are required to create a more level playing field in international trade. Tensions with the US and its allies escalate, and countries are forced into the unwanted choice of siding with China or with the US. As in the scenario in which the US turns inwards, all aspects of international relations would become more complicated.

What should the EU strategy be? Towards a Plan A and a Plan B

In addressing the implications of these scenarios, the EU should act on the basis that globalisation will continue even if, or as, the trading system runs into severe difficulties and slows the process for a while.

To understand the persistence of globalisation, it is useful to keep in mind the three forces behind it. First, globalisation is an entirely spontaneous economic process driven by arbitrage (buy low, sell high) in the world markets for goods, services, capital and labour. Human beings will continue to engage in this arbitrage, which they do as naturally as they breathe.

Second, the arbitrage process in the four markets is greatly facilitated by improvements in transportation and information technologies, which reduce trade costs, including communication costs and face-to-face costs. These improvements have enabled a significant transformation in the international division of labour that began around 1990 in relation to industry, production processes and tasks.

And now, we are experiencing a drastic reduction in matching costs for business-to-consumer and consumer-to-consumer transactions, which might trigger the development of massive services outsourcing. These changes are expected to continue and even accelerate, mainly because of further advances in information technologies.

Third, it is true that historically, policies, macroeconomic depression and international conflicts have interrupted globalisation in individual countries and regions in many instances, and, sometimes even across the world.

However, history shows that a withdrawal from globalisation is not technologically or economically sustainable. Politically, countries that have withdrawn from globalisation have often also had to resort to repression. In shaping their long- term strategy, EU policymakers should assume that no country, even the largest such as the US or China, can isolate themselves from globalisation without incurring enormous costs.

EU policymakers need to redouble their efforts to ensure that the multilateral trading system is preserved – Plan A. The main aim of Plan A would be to preserve the multilateral system, which is not only a fundamental interest of the EU but is arguably even more critical for small economies around the world.

Plan A is quite close to the strategy that the EU has been pursuing in recent years but we also recommend some important adjustments that would increase the probability of success. The EU is pursuing several objectives at present, and is doing so quite appropriately:

- The EU is striking bilateral and regional trade agreements, and engaging in domestic reforms that improve its international competitiveness and facilitate its integration into global value chains. The successful conclusion of trade agreements with Japan and Canada, and the ongoing finalisation of the agreement with Singapore, are in line with that strategy.

  These steps increase the competitive pressure on all other economies to remain within the present trading system, including within the WTO as the legal bedrock of the system. These are also steps that guard against the worst consequences of bad scenarios, should they materialise.

- EU members are pursuing measures that aid the adjustment of the most vulnerable to the proliferation of labour-saving technologies and to international trade involving low-wage economies. These policies require the pursuit of ex-ante and ex-post domestic policies that help ensure that global economic engagement does not increase inequality.

  The EU, with its comparatively strong welfare systems, is in a good position on these issues, even though it is costly and open to regulatory arbitrage. Its welfare systems and its training systems will need further adaptation – subjects that are beyond our scope here, but critical[7].

- The EU endorses plurilateral approaches to WTO negotiations. It supports WTO reforms in critical areas such as the operation of global value chains (investment rules, intellectual property protection, trade facilitation, etc), digital trade, services and agriculture.

- The EU supports procedural changes to the WTO dispute settlement process to improve the speed and thoroughness of the system. While these changes need to take into account the concerns of the United States, the focus should be on making the system work better for all parties.

- The EU continues to make full use of the WTO dispute settlement process to deter unilateral measures. It should always be clear to the EU's partners that, in the event of their taking protectionist steps that affect the EU, such steps will backfire on them.

  More specifically, should the United States impose tariffs on automobile imports from its allies on national security grounds, the European Union should consider this action an emergency safeguard measure (not a legitimate national security measure) and retaliate as per the emergency safeguards agreement, as was done for steel and aluminium.

- The EU recognises that the United States, which has long been the lynchpin of the international trading system, is legitimately pushing for changes to some aspects of the current system, especially in relation to China. At the same time, the EU should insist that the US plays by WTO rules.

There are also major areas in which the EU can do more to increase the likelihood that the trading system will be preserved – ie. that Plan A will succeed.

- As an integral part of Plan A, the EU should re-examine its own red lines. It should review its trade and macroeconomic policies with greater alacrity than is presently evident. This would include another look at the Common Agricultural Policy with a view to reducing subsidies, tariffs and non-tariff barriers[8].

It would also include reducing its applied tariffs in sectors such as textiles, automobiles and in various other cases where tariff peaks exist. Ideally, these measures would be implemented through MFN commitments under the WTO. Alternatively, they could be used as means to make progress on crucial bilateral negotiations, such as those with the United States and with Mercosur.

- As part of these reforms, countries with very large current account surpluses should re-examine the appropriateness of their macroeconomic, taxation and structural policies. Large-surplus countries are right to affirm that neither global nor bilateral trade imbalances can be, nor should they be, effectively corrected through trade policy measures, but only though changes to macroeconomic and structural policies. But large-surplus countries should also show greater willingness to adopt such macroeconomic and structural reforms, which are ultimately also matters of self-interest for these countries.

- The EU needs a policy that reflects China's rising economic weight without – as appears to be happening in US-China relations – falling into the trap of geopolitical competition that might have ominous consequences. For all its remarkable progress, China remains on average a relatively poor country, with per capita income at PPP 21 percent lower than that of Bulgaria, the EU's poorest member (World Bank, 2017b). China's exports of goods and services per person in 2017 were only $1,743, compared to $6,800 for the United States, $12,388 for France and $21,000 for Germany (World Bank, 2017c, 2017d).

  Still, these averages mask the fact that some parts of China are now high-income regions and several Chinese firms are now at the cutting edge of technology and sophistication. The richer regions of China are comparable in size to some nations in Western Europe, and their economies directly compete with European industries.

China's rapid transition poses major governance challenges for its leaders. It should be clear that the EU cannot change China's state capitalist system. It should instead insist that China, which is by some measures already the world's largest economy and appears destined to become the largest trading nation by a wide margin, must rapidly adopt reforms that avoid the most blatant trade distortions – reforms that correspond to its new-found status.

China doing its fair share would include reducing its MFN applied tariffs and adoption of stringent rules on subsidisation in traded sectors, on protection of intellectual property and on the rights of foreign investors. The frameworks governing SOEs – in China and elsewhere – should minimize their distorting effect on international trade[9]. The best way to achieve these reforms would be through a multilateral effort in which China is a leading participant.

In shaping its trade relationship with China, the EU should be wary of generalisations and stereotypes and should focus instead on specific cases of infringement. For example, China's SOEs are far less productive and innovative than its private companies and, while their share of investment has risen in recent years, their share of profits and exports has declined sharply.

In some export sectors, Chinese subsidies, where they exist, might even be positive for European consumers. On the other hand, such subsidisation schemes, even if they are bad for Chinese growth and good for European consumers, can represent unfair competition or dumping policies, which are harmful for European producers in some instances.

The EU should be especially vigilant in relation to China's protection of, and state support for, young industries where first-mover advantage and economies of scale determine long-term competitive positions. Here, strong responses are needed as long-term advantages could be gained by China that would risk loss of significant parts of the EU's value creation for a long period of time.

When it comes to forced technology transfer, European companies make the choice to invest in China and many are adept at deciding which technologies they expose and which they protect. But the Chinese policy of using market access as a lever to force technology transfer is problematic and needs to be addressed.

In the medium term, though, the EU might not remain a net loser from the transfer of intellectual property, given that China is already the largest source of new patents and scientific articles and increasingly needs to protect its own innovations. This provides some negotiating space for the EU in its relations with China.

All that said, in shaping its China policy, the EU should bear in mind that European consumers and firms derive large benefits from the rapidly expanding trade and investment links with China. China is a far less export-driven economy than it was just a few years ago and it now imports almost as much as it exports.

Moreover, China, which in 2017 imported goods and services amounting to $2.2 trillion, roughly 30 percent less than the United States, could under plausible assumptions[10] import 30 percent more than the United States in 2030. It is therefore in the EU's interest that China reforms and remains an important market for European companies.

China's size, its long history of state involvement and of state capitalism, and the consider- able extent to which its different provinces can pursue independent policies, means that the reforms needed to eliminate these distortions are complex and will take time. The EU must strike a balance between exercising continuous pressure for change while avoiding falling into the trap of geopolitical rivalry.

Such a constructive approach towards China encourages change through the WTO and through bilateral negotiations. The China policy needs to be complemented by the strengthening and the build-up of domestic EU instruments that ensure a level-playing field within the EU.

For example, the EU's state aid instruments need to evolve so that subsidised foreign companies entering the EU market cannot distort the market. While such measures need to be WTO-compatible, they cannot be based only on notifications to the WTO, as these are insufficiently accurate and timely.

The risk of a collapse of the multilateral trading system is real and must be addressed systematically

Plan A might fail for a variety of reasons, in particular if the various bad scenarios materialise. The EU therefore must reflect on a Plan B. This Plan B is clearly not a desired outcome, but it would be careless not to reflect on what the world would look without a functioning WTO and with trade relations based on power relations. The risks are too high for the EU to ignore such an outcome.

In the worst-case scenario, the WTO could collapse quickly – ie. over the next few years if the US refuses to replace members of the Appellate Body – or the organisation might gradually lose relevance over the next decade or two if its negotiating arm is not revitalised. In the latter case, the EU has more time to execute Plan B, but Plan B is still needed today.

If the United States refuses to replace the members of the Appellate Body, the EU, with China, Japan and others, could conceivably continue for a while to operate under present dispute settlement arrangements minus the United States, until a more permanent arrangement is found that engages the world's largest economy (or until a new US administration reverses course).

It is also possible that the EU, China and several other parties could decide to resort to an alternative mechanism for dispute resolution within the WTO, ie. arbitration under Article 15, a procedure that is purely voluntary and that the United States might or might not decide to accept.

However, none of the alternative arrangements are likely to be permanent. Unless the negotiating arm of the WTO is revitalised – which would almost certainly become more difficult if the US remains outside – the EU cannot discount the possibility that the days of the WTO as we know it are numbered.

Not only would the dispute settlement system have lost credibility and the negotiating arm ground to a halt, but the EU would have lost its most important ally in its effort to modernise the organization, move forward on the new issues and provide a counterweight to China's rising power. The day might then come when, even for the EU's multilateralists, the benefits of WTO membership might be more than offset by the constraints it imposes and the unwieldy nature of its negotiating procedures.

In those unfortunate circumstances, the essence of Plan B would be a wider set of bilateral and regional trade agreements. However, while under Plan A the purpose of these agreements is to support and complement the WTO, under Plan B the purpose of the EU's bilateral and regional agreements would be to replace the WTO to the greatest extent possible.

That means that the EU must seek an even wider set of agreements that also include effective dispute settlement provisions. Already, individual EU members are covered by bilateral and regional agreements (the EU itself) for, on average, about 75 percent of their trade. Several new agreements are also being negotiated with Singapore, Vietnam, Mexico, Chile, Australia and New Zealand (European Council, 2019).

Assuming the agreements hold, individual EU members would be protected to a significant degree from the worst consequences of a world without the WTO. Assuming NAFTA or some version of it survives, the US would also be protected to a degree, though less so than EU members. China is the least protected of the large traders, but is working towards more bilateral trade agreements, including through its Belt and Road Initiative.

Under Plan B, the EU's greatest challenge would be to avoid that its trade with its largest trading partners, the US and China, becomes continuously disrupted by a series of unmanageable disputes. While the EU could possibly rely on its size and influence to maintain some order in its trade with small nations, based on historical norms even in the absence of trade agreements, the same cannot be said of the US and China, with which the EU is quite evenly matched.

Under Plan B, the EU's greatest challenge would be to avoid that its trade with the US and China becomes disrupted by a series of unmanageable disputes

In fact, a distinct possibility under Plan B would be that the global trading system breaks down into three major blocs – with far reduced trade between those blocs and increased trade within them. The global economy would certainly suffer a major blow from such a scenario.

Under Plan B, bilateral negotiations with the US and China would therefore acquire far greater urgency. At present, the most important of these is the strained negotiation with the United States, a successful conclusion of which would almost certainly require a major redrawing of the EU's red lines (as mentioned).

Further down the road, the initiation of a bilateral trade agreement with China would be just as critical. Current exploratory negotiations with China are limited to a bilateral investment treaty. As part of Plan B, the EU should immediately launch a study on what a trade agreement with China would entail. It could well turn out that such an agreement would be unviable, because the terms would be unacceptable either to the EU or to China, or to both.

The EU will also need to reach a comprehensive bilateral trade agreement with the United Kingdom, which is one of its most important trading partners, because the WTO framework would no longer be available. Here, its weight gives the EU considerable leeway in setting the terms of the agreement as the UK will be fully dependent on an agreement with the EU, by far its most important trading partner (46 percent of the UK's good exports go to the EU).

If the WTO falters, and if the EU was than unable to reach bilateral trade agreements with the United States and China, trade relations with the EU's most important partners could continue for a while to be based on inherited norms. A natural initial reference point would be the presently applied tariffs and rules of the WTO.

It is conceivable that such disciplines could be maintained under bilateral interim deals and could be enforced under an agreed dispute settlement system, such as arbitration or such as already exists as provisions in many bilateral regional agreements.

As part of Plan B the EU should start to study how such a system could be made to work to minimise disruption. A system of this kind would be hugely inferior to the present WTO, but it could also offer some advantages of speed and flexibility. For example, remedies could be better articulated, including the possibility of financial compensation. And, the system would allow for the negotiation of partial rules or agreements in specific sectors, allowing for a process of continuous renewal.

From a global perspective, such arrangements would be clearly far inferior to the present multilateral system. However, this shortcoming could be mitigated to some degree by allowing for an open architecture under which third countries could negotiate to become part of one of the 'mega-regional' arrangements, of which there would naturally be three, EU-US, EU-China and China-US.

Clearly, the most exposed to a collapse of the present system would be the middle and lesser powers, whose bilateral agreements cover little trade. For example, countries such as Brazil, India and South Africa – countries with a history of protectionism – would be more exposed than countries such as Chile, Mexico and Morocco.

The preparation of Plan B should not be done solely by experts working in isolation. It should instead involve consultations with a wide group of stakeholders. One notable consequence would be to sharpen the understanding of what a failure of Plan A might entail. It is important that everyone understands that the counterfactual to redrawing the EU's, the US's and China's red lines might not be the status quo, but something far worse.

Conclusions

The global trading system is currently severely challenged. The EU should pursue its current Plan A, while moving some of its red lines. Plan A consists of fostering more bilateral trade agreements and constructively but firmly engaging with China on reform of its economy while seeking to find solutions with the US.

To make success more likely, the EU should re- consider some key issues, such as more forcefully addressing its internal and external imbalances and opening up its agricultural markets more readily in the context of WTO agreements or new bilateral agreements.

But equally importantly, the EU needs to prepare for a world in which the global multilateral trading system is damaged beyond repair. Studying this scenario more carefully will also help all involved players from the US, China and the EU to grasp the costs they might face. In this way, the chance of compromise might be increased. ■

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Endnotes

1. Under the WTO's dispute settlement procedure, any member can bring a case against any other member for not living up to its commitments in a specific instance. After a period of consultations, and in the event the dispute is not resolved between the parties, the WTO membership appoint a panel of experts to decide whether the WTO member whose policy is being challenged is at fault. In case of a finding of fault, one or both parties to the dispute can appeal to the Appellate Body. The Appellate Body consists of seven permanent members, representative of the WTO membership, who serve four-

year terms. The Appellate Body can uphold, modify or reverse the panel's legal findings. A minimum of three Appellate Body members is required in order to adjudicate on a dispute. Because new appointments and reappointments have been blocked, the Appellate Body is at time of writing down to three members, of whom one will retire in late 2019.

2. US complaints include procedural concerns such as the speed of the process and the continued involvement in cases of appellate body members even after they leave office. More fundamentally, the US objects to the ostensible 'overreach' of the appellate body to adjudicate in ways that go beyond what was negotiated, and also to opine on issues that go beyond the case in question. At a Center for Strategic and International Studies (CSIS) event on 19 September 2017, US Trade Representative Robert Lighthizer said: "the United States sees numerous examples where the dispute-settlement process over the years has really diminished what we bargained for or imposed obligations that we do not believe we agreed to. There have been a lot of cases in the dumping and countervailing-duty, the trade-rem- edies laws, where, in my opinion, the decisions are really indefensible, and even a lot of people who have much more free-trade orientation who read these question(s). And we've had tax laws that have been struck down. We've had other provisions where the WTO has taken – really, I think, took the position that they were going to strike down some- thing they thought shouldn't happen rather than looking at these – the GATT agreement as a contract. So what we've tended to see is that Americans look at the WTO or any of these trade agreements and we say, OK, this is a contract and these are my rights. Others – Europeans, but others also – tend to think they're sort of evolving kinds of governance. And there's a very different idea between these two things. And I think sorting that out is what have to do."

3. The rejection of global governance systems appears to be an important feature of this administration; see for example Bolton (2000).

4. In comparison, the United States, Germany and China, the three largest trading nations, adopted 1,661, 1,249 and 452 discriminatory measures respectively from 2008-18.

5. For details and a concrete proposal on how to address this issue, see Mavroidis and Sapir (2019).

6. The rationale for plurilaterals is that it is easier for a subset of WTO members representing a 'critical mass' of nations to reach agreement on a single issue of importance to them, than for all WTO members to agree on a very wide set of issues.

The 'everyone has to agree on everything' approach to WTO negotiations (single undertaking/consensus approach) has become extremely unwieldy with the increase in the number and diversity of WTO members and the increase in the number of issues that the WTO deals with.
7. See for example Darvas and Wolff (2016).
8. In addition to responding to the demands of some advanced nations, agriculture reforms would encourage many developing nations to redouble their commitments to the WTO.
9. Also within China there is a debate on how to achieve a level playing field between SOEs and private companies. This discussion comes under the heading of 'competitive neutrality'. We are not in a position to assess how far the recent decisions will go. See, for example,
https://www.caixinglobal.com/2018-12-26/state-council-endorses-competitive-neutrality-101363735.html
10. The assumptions are that China's real GDP grows at 6 percent a year from 2017 to 2030 and that the United States' real GDP grows at 2 percent per year, and that Chinese and US imports grow at the same rate as their respective GDPs.

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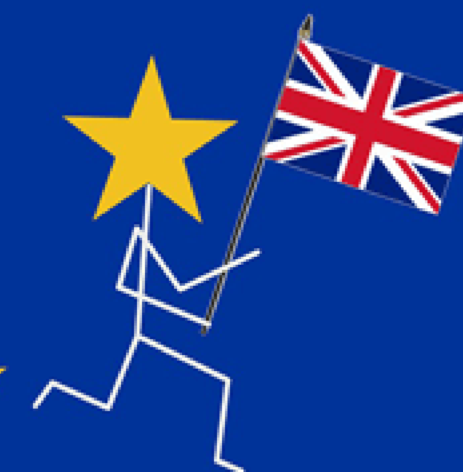
Where Brexit goes, the law shall follow



The UK is leaving the European Union. Rebecca Christie looks at how the financial industry and the law firms that support it are preparing for what comes next

The UK is leaving the European Union, in spirit if not in immediate legal jurisdiction. While the next phase of Brexit won't emerge until October, the financial sector is already on the move. London, long the dominant hub for bankers and investors, will cede ground to a quartet of cities within the EU core. In turn, London's lawyers are moving to Dublin, raising questions about how they can work cross-border going forward.

Paris, Frankfurt, Amsterdam and Dublin are the locales with the most to gain overall from the transition, with Luxembourg, Brussels and Warsaw all picking up business as well. Rather than a unified mass transition out of London to another singular hub, the financial industry is using Brexit as an opportunity to diversify. Just as banks have learned to keep their headquarters and back-up facilities in separate physical locations, now they are splitting up their operations in terms of function and human capital.

A lot of the discussion has focused on risk and loss. What is London giving up? What infrastructure shortcomings will emerge? What will it cost and who will shoulder the burden? The modern world has grown accustomed to seamless trading, so any threat to the financial plumbing is a serious concern.

At the same time, Brexit has sparked a transition with some positives. Each of the European cities that gains a share of London's departing business will see a boost from the jobs and households that will relocate– not just in the short run but in the years to come, as financial firms choose not just where to move but where to set up future operations.

For every big insurance company or American bank that moves its EU headquarters to Dublin, for example, a cluster of smaller supporting businesses is likely to emerge. For every executive household a bank needs to move to Paris, a corresponding drop in living expenses is likely to offset the cost of the move.

For the European Union as a whole, this transition can be promoted as offering something for everyone, with benefits spread widely among the 27 countries who remain in the bloc. There are also benefits for London, especially in the eyes of the Brexit-backing public. For those voters, a smaller City is an attraction, not a drawback. If London's real-estate market cools off, and if global investors lose a little of their thirst for a UK pied-à-terre, it opens up housing for locals. Likewise, if London loses some of its swagger, Britain's less urban populations may regain some of their voice.

Where the UK specifically is concerned, financial-adjacent business may bear the brunt of issues yet to be resolved. For example, lawyers will not only need to negotiate the Brexit transition, they will need to manage it for their own profession.

A lot of the discussion has focused on risk and loss. What is London giving up? What infrastructure shortcomings will emerge? What will it cost and who will shoulder the burden?

Ireland, one of the few EU jurisdictions that is both English-speaking and under a common-law rather than civil-law framework, has been the epicentre of changes to the legal profession. British lawyers have signed up to the Irish bar since the prospect of Brexit emerged, as big law firms register their staff en masse. As of the end of May 2019, a total of 2,970 England and Wales solicitors had been admitted to the Irish Roll of Solicitors since January 1st 2016, with about 600 more applications at various stages of being processed. These lawyers in transition now make up nearly 15% of the total.

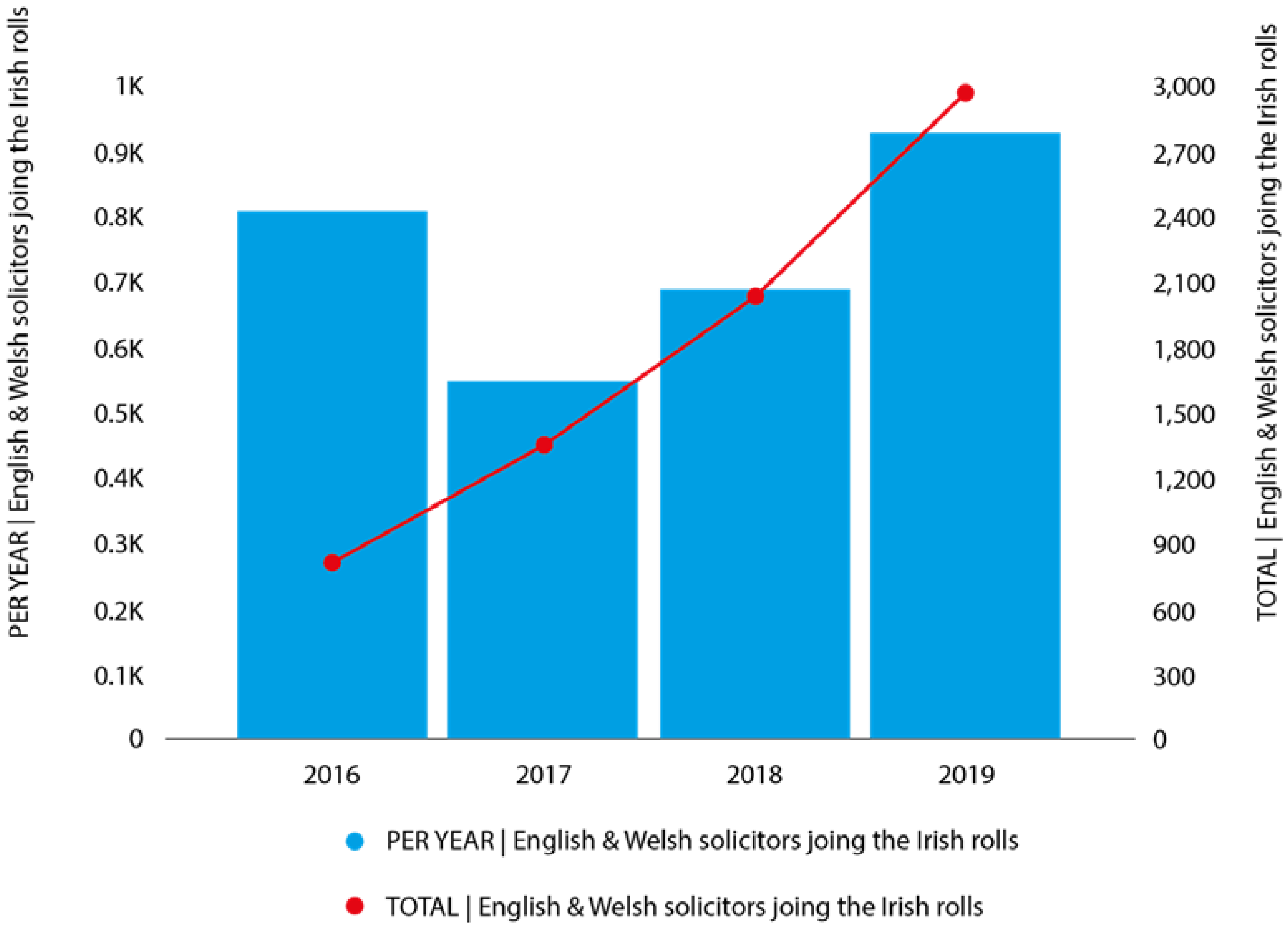
This has further raised the question of what Ireland will consider valid residency for those who practice law in its system. For now, the answer to this complex question depends on how the EU's relationship with post-Brexit Britain takes shape. Under some scenarios, this could greatly complicate working relationships, especially for London-based clients. Will they continue to be able to use a London-based lawyer to manage their EU affairs, or will they need to switch to partners in Brussels or Dublin to make sure everything can work smoothly? In the past, Europe has been willing to travel to London, but now Londoners may need to make the journey in reverse.

The EU will face tough choices over when and if to offer mutual recognition to regulators in non-member countries. It will be difficult to create Brexit-proof legal contracts when the shape of the new legal order has yet to emerge. *"The post-Brexit recognition and enforcement of English judgments across the EU remains unclear. Unless and until these issues are resolved, there is likely to be additional complexity, uncertainty and risk for businesses and individuals as a result of Brexit,"* the Irish Law Society wrote.

Britain seems confident it won't be a huge shift, and so far the financial-sector numbers back that up: banking assets leaving London amount to only about 10% of the total so far, according to think-tank New Financial. It's possible this amounts to the tip of the iceberg, but it is equally possible that financial business flows gradually away

Figure 1. English & Welsh solicitors joining the Irish rolls

2016	2017	2018	2019	Total
806	547	690	927	2,970



Source: Data provided by Irish Law Society, June 2019. As of the end of May 2019, there were 19,888 solicitors registered on the Irish Roll of Solicitors. As of that date,14.9% of solicitors on the Irish Roll were England and Wales solicitors that had enrolled since June 2016.

from London in a way that shrinks but doesn't decimate the metropolis' role as a financial hub. Inertia is a common European response to managing thorny problems.

In the three years since the UK's 2016 referendum on EU membership, the markets have had plenty of time to prepare. Banks and other financial firms are establishing or activating licenses within the EU, designing systems that will work under a variety of outcomes and taking a flexible approach to their workforces.

Official-sector actors might have a tougher road – EU institutions may be barred from doing business with financial firms that aren't subject to EU legal proceedings, for example. But while the financial industry would prefer an orderly and well-planned transition, in the event of a hard Brexit most private market participants will still be fine.

For most of the industry, contingency planning and transition periods are already in place: licences have been set up and activated, legal frameworks are already under revision. The European Commission said on June 12th that the financial sector has made *"significant progress"* in getting ready, pointing out a few areas to work on in the run-up to the next deadline. *"Insurance firms, payment services providers and other financial service operators which remain unprepared regarding certain aspects of their business (for example contract management and access to infrastructures) are strongly encouraged to finalise their preparatory measures by 31 October 2019."*

Generally speaking, workarounds are possible and transition periods are part of every scenario. *"After a thorough examination of the risks linked to a 'no-deal' scenario in the financial sector, the Commission has identified only a limited number of contingency measures to safeguard financial stability in the EU27,"* the EU's executive branch said in December.

For critical pieces of financial infrastructure, the EU has already made clear that adjustment periods are part of its contingency planning. For example, the plans published at the end of last year included a 12-month extension for derivatives clearing and contract novation, and a 24-month guaranteed equivalence status for UK central depositaries used by EU firms; the latest guidance suggests those can be adjusted as needed depending on the date of exit.

It's conceivable that after Brexit, the UK might remain within the single market or a customs union with the EU for an extended transition, or indefinitely. This would be a triumph for negotiators on both sides if it could be agreed, especially given the setbacks faced by the originally negotiated and so-far unadopted Withdrawal Agreement. Generally speaking, whatever new framework emerges is likely to have more roadblocks than the status quo and may wobble whenever Britain's domestic politics flare up.

Also in question is what happens if Britain never leaves at all. While the UK has shown no sign of wanting to reverse course, it also is currently without a prime minister or a workable strategy. As last month's European Parliament elections show, anyone planning a post-Brexit Europe also needs to plan around including a UK that hasn't actually left.

At its most extreme, this might even mean that a future British government revokes Article 50, hitting reset on the status quo and raising a slew of questions about what measures would remain available to a member state with one foot, but only one foot, perpetually half out the door.

So far, outright discussion of these possibilities remains confined to backchannels and coffee chatter. But as October nears it has begun to leak into the public sphere, as British officials repeatedly rule out 'no deal' without any sign of getting closer to an agreement.

Regardless of where Brexit stands, the EU will need to integrate its capital markets more fully in order to support economic growth and guard against the next financial crisis. Anti-money laundering is a thorny EU conundrum, if not especially Brexit-linked.

More generally, cross-border banking brings challenges for regulators in the 'home' countries of firms' financial headquarters as well as the 'host' countries where they do much of their business. Should regulators require firms to tether some of their assets to specific locations, or is the system safer when capital can flow freely across borders?

How can financial firms merge when every country has its own insolvency proceedings and other local infrastructure? And how will the new system decide which judges and lawyers have the authority to settle these disagreements?

Whether or not London stays in the single market, the EU will have to come to grips with whether to concentrate on a centralised, homogenous regulatory framework or allow regional differences to prosper in support of a diverse and competitive financial sector.

Big countries and small countries may find they have different interests in the amount of local flexibility that should be allowed, and Europe will have to build a workable system that takes these competing interests into account. Brexit will be a catalyst for all sides to push for change on their priorities. ■

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Low funding jeopardises Europe’s innovation missions

Semih Akcomak and Bastiaan Overvest consider the European Commission plans for research and innovation spending, and find that the spending is relatively small

The European Commission plans to spend about €120 billion on research and innovation under mission-oriented programmes between 2021 and 2027. This column shows that planned spending is small both relative to the total R&D spending of individual EU countries and relative to previous missions.

In addition, there is a lack of clarity on how missions will be determined, designed and governed. Experiences in other countries suggest that the Commission should find new ways of increasing funding to missions and increase clarity on the implementation of mission-oriented policies.

The European Commission plans to spend about €120 billion on research and innovation under mission-oriented programmes between 2021 and 2027. This column shows that planned spending is small both relative to total R&D spending of individual EU countries and relative to previous missions. In addition, there is a lack of clarity on how missions will be determined, designed and governed. Experiences in other countries suggest that the EC should find new ways of increasing funding to missions and increase clarity on the implementation of mission-oriented policies.

Mariana Mazzucato's book, *The Entrepreneurial State*, drastically changed how policymakers think about innovation policy and the appropriate role of government (Mazzucato 2013). This led to a renewed appreciation of mission-oriented innovation policies in the EU. About one third of the 224 EC documents on 'mission-oriented' policies after 2010 were in fact produced in 2018[1].

Similarly, of about 30 academic articles on missions published after 2010, around one third were produced in 2018. There are also two special issues in *Industrial and Corporate Change* (Kattel and Mazzucato 2018) and *Research Policy* (Kuhlmann 2018) on mission-oriented and transformative innovation policies.

In this light, it is not surprising that Europe is moving towards mission-oriented policies to support innovation. At the beginning of 2018, the Commission announced that the new Framework Programme, Horizon Europe, will follow mission-oriented principles (Mazzucato 2018a). Accordingly, EU research and innovation efforts will be guided by ambitious and inspirational missions with clear targets addressing grand societal challenges.

There is much to do in terms of reallocation of funds within the EU budget and between national governments and the EU, which may entail restructuring of EU institutions and programmes to work for missions

What are missions?

Mission-oriented policies are supply- and demand-side market-shaping public policies that aim to affect the direction of technological change. For instance, the Apollo Project in the US (1961-1972) aimed at putting a 'man on the moon' but, as a by-product, contributed to new industries (such as micro-electronics and ICT) and created vast spillovers that continued for many years after the project ended[2].

Taking the UN Sustainable Development Goals as a reference, the EU aims to replicate this experience by creating 'new' missions that will tackle grand societal challenges. Missions will be selected using five criteria (Mazzucato 2018a):

(a) they are bold and inspirational with wide societal relevance;

(b) they give a clear direction to research and innovation efforts by putting time-bound targets;

(c) they are ambitious but realistic to achieve in a certain time period;

(d) they should focus on solving the problem rather than on the actor, discipline or sector; and

(e) they are flexible and open to multiple bottom-up solutions. Research and innovation projects financed by the Framework Programmes are supposed to tackle the specific problem defined under the mission.

Though not officially determined yet, Mazzucato (2018a, 2018b) presents possible examples for such new missions: 100 carbon-neutral cities by 2030 (climate change), a plastic-free ocean by 2025 (clean oceans), and decreasing the burden of dementia by halving the human burden by 2030 (citizen health and wellbeing).

Lack of clarity on how missions will be determined, designed and governed

Despite all the efforts of the Commission, it is still not clear how missions will be selected and what concrete difference they will bring to the ongoing thematic funding of the Framework Programmes. New missions are very different from the mostly defence-related old missions in terms of actor involvement, citizen engagement, centralisation of governance and their link to diffusion-oriented policies (Soete and Arundel 1993, *Research Policy* 2012).

Designing missions to tackle grand societal challenges at the EU level is a giant policy experiment on its own – especially in an environment with 28 different national policies, procurement and investment systems as opposed to one single market.

How other EU programmes on regional development, cohesion and agriculture work for innovation missions is also not explicit. It is expected that missions will be created on overarching topics such as health, climate, digitalisation, transportation, and energy (Mazzucato 2018b).

Looking at the above criteria and examples, it seems that funding of missions under the research and innovation programme will affect other EU programmes on agriculture, cohesion and environment. A portion of the planned spending on Regional Development & Cohesion (€273 billion), Agriculture & Maritime Policy (€372 billion) and Investing in People, Social Cohesion & Values (€140 billion) over the 2021-2027 period can, for instance, support missions directly by creating specific 'innovation windows' under each EU programme just as in the case of the new InvestEU programme. This will not only enhance interactions between programmes but also may provide additional funding for innovation missions (Foray *et al*. 2018) for the case of innovation and cohesion policies.

National R&D investments dwarf EU investments

The Framework Programme is the main EU tool for supporting research and innovation activities. Total EU-level funding for the next round of the 2021-2027 Framework Programmes (Horizon Europe) will increase by 25% and reach €100 billion. While this is spectacular in absolute terms, EU funding is still small, compared to total national funding on R&D in individual EU countries.

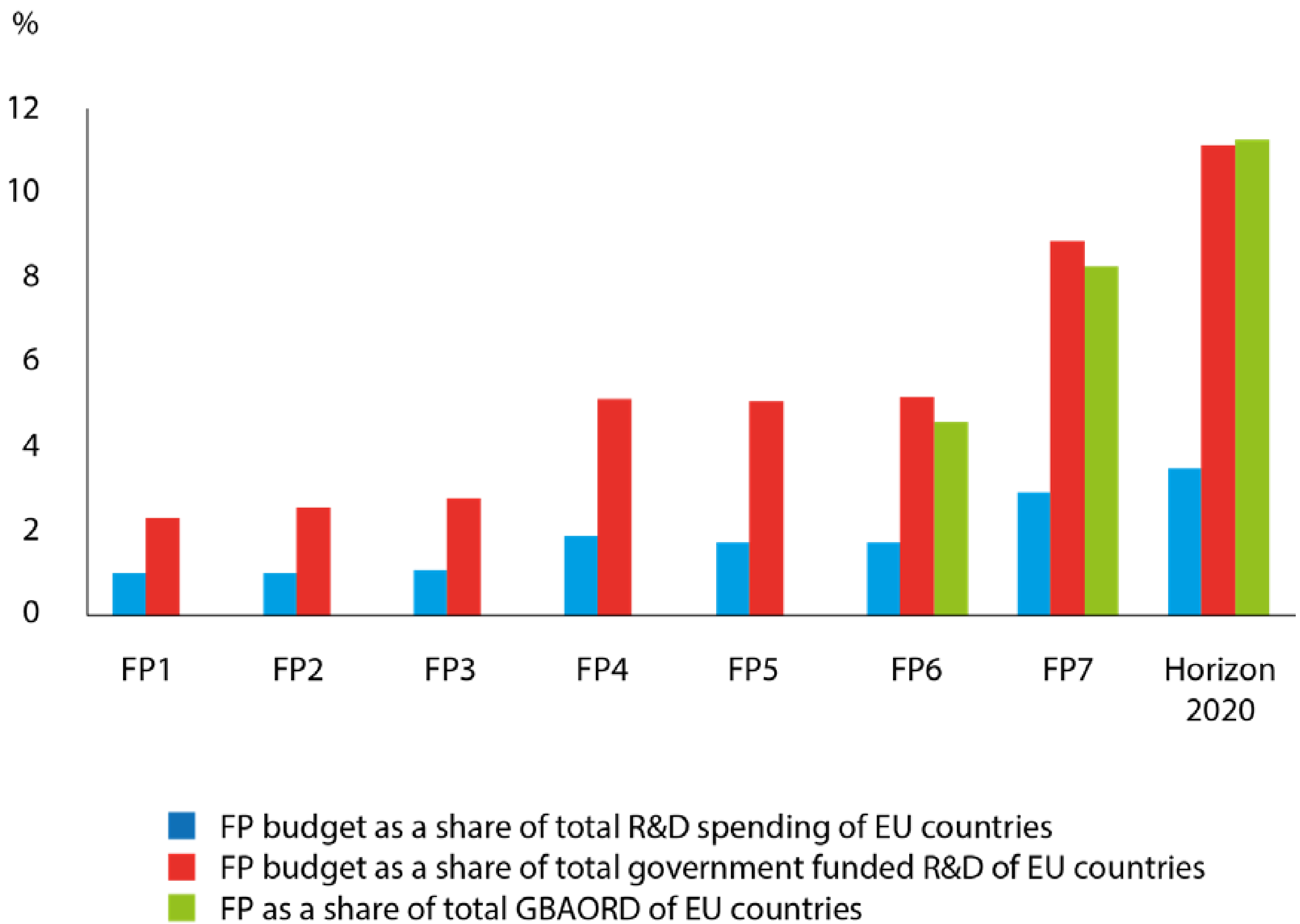
Figure 1 below shows that EU funding on Framework Programmes has risen from about 1% to 3.5% of total national spending of EU countries on R&D from Framework Programme 1 (1983-1987) to Horizon 2020 (2014-2020). In the same period, EU funding on Framework Programmes has risen from about 2% to 11.2% of national spending on R&D where the source of funding is the government.

Though it is difficult to differentiate R&D funding from innovation funding, the budgets of benchmark missions are comparably high. The US spent $25.4 billion on the Apollo Project (1961-1972), which was approximately 9% of national R&D spending in those years. Germany's spending on the Energiewende is about 7-8%.

The investment in the Second Delta Plan of the Netherlands of about €18 billion from 2017 to 2031 is about 7%. US spending on SunShot and total solar energy missions will reach $150 billion between 2016 and 2020 which is about 5%. China's spending on New Energy Vehicles will be about 3% of its respective national R&D spending in designated periods[3].

Thus, Horizon Europe's 2021-2027 budget of about 4% relative to total national R&D spending of individual EU countries is low. Even if we assume that all of the Horizon Europe budget (€97.6 billion) will be directed to several, still undetermined missions and will include other initiatives that can partially be viewed as missions such as

Figure 1. The budget of Framework Programmes as a share of total R&D spending of EU countries, 1983-2020



Source: Calculated using the Eurostat statistics. For data availability reasons and comparability with the EU definition before the enlargement in 2000, we used EU15 + Norway + Switzerland to calculate EU totals. In the current composition of the EU, the EU15 constitutes 95 percent of the total EU R&D spending (2016 numbers). Even then, about 15% of the cells that are used in the calculations are imputed.

the European Space Agency (€16 billion) and Euratom (€2.4 billion), the €120 billion spending on research and innovation missions is still less than 5% of total national R&D spending of individual EU countries.

As the mentioned facts and numbers show, missions around the world tend to spend more both in absolute and relative terms. It is still not clear how the EU will design the missions, how this will affect the current thematic funding of the Framework Programmes, and how the policy mix that will financially support the missions is determined.

All in all, experiences in other countries suggest that the European Commission should both find new ways of increasing funding to missions and increase clarity on the implementation of mission-oriented policies.

The next Framework Programme, Horizon Europe (2021-2027), will be guided by mission-oriented policies and will be a learning period not only for beneficiaries but also for policymakers, civil servants and practitioners. To be successful, missions need to be clearly defined and well-funded.

There is much to do in terms of reallocation of funds within the EU budget and between national governments and the EU, which may entail restructuring of EU institutions and programmes to work for missions. ■

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Endnotes

1. For the whole list of EC documents, see https://tinyurl.com/y87wahvo
2. See, for instance, the leaflet “NASA Facts” published in July 2004 (https://www.nasa.gov/sites/default/files/80660main_ApolloFS.pdf) presenting various examples of technologies that resulted from the Apollo Project.
3. The calculations are based on the EC’s detailed documentation on 16 benchmark mission cases around the world and Eurostat statistics on spending on R&D. From the cases it is not possible to differentiate R&D and innovation spending. There is an indication of a budget that is supposedly spent to support the mission in each case.

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Fostering human capital investment in the EU

An EU tax credit to preserve incentives for investment in human capital is needed, Debora Revoltella, Philipp-Bastian Brutscher and Patricia Wruuck advocate

Spending on education underpins the formation of human capital. But intra-EU labour mobility means that returns to such spending often accrue somewhere other than where the investment takes place, which can lead to sub-optimal levels of investment in countries that are subject to persistent outward migration. This column advocates for more intra-EU coordination on investment in education and proposes a novel mechanism for fostering more investment in human capital across the EU.

About 11.5 million Europeans of working age live in an EU member state other than their country of citizenship, representing about 4% of the total working age population[1]. Compared to ten years ago, the share has increased by about 60%. Higher intra-EU labour mobility reflects an increasing degree of integration of labour markets, prosperity differentials between member states, as well as strong push and pull factors arising from the financial crisis and subsequent sovereign debt crisis.

Over the past ten years, the new member states have experienced the largest cumulative outflows, with more than 14% of the working age population in Lithuania, for example, leaving their country for another EU country for work, education, or other reasons. Mobility from Southern Europe over the same period was more limited in comparison, but South-North migration picked up during the financial crisis (Batsaikhan *et al*. 2018). Germany and the UK have been the main countries of destination for intra-EU movers from both Southern and Eastern Europe over the last decade.

Most intra-EU movers are well qualified, with 80% of people who moved to a different EU member state in the last ten years having a medium or high level of education. On average, recent movers are more highly educated than nationals in the countries of destination (European Commission 2019).

For the EU as a whole, labour mobility is beneficial

From an individual perspective, labour mobility is a good thing. It means the opportunity to find employment where labour market conditions are better, and thus to gain new experiences and enhance skill formation. Labour mobility is also beneficial to overall EU competitiveness; a dynamic labour market that allocates labour and skills efficiently is important to innovate, grow and invest (EIB 2018). Moreover, labour mobility is needed to deepen the Single Market for services, which can help boost productivity.

The mismatch between where investment activities take place and where the corresponding returns accrue raises questions of intra-EU fairness, with some countries 'harnessing the benefits of investment activities paid for by others'

From an economic resilience perspective, labour mobility is also desirable. Low mobility (in the absence of wage flexibility) means long and painful adjustment processes to shocks in a currency union (Blanchard and Katz 1992). While there is evidence that cross-country mobility has become more important over time, overall labour movements in Europe still play less of a role in helping to absorb country-specific economic shocks than in the US (Beyer and Smets 2015)[2].

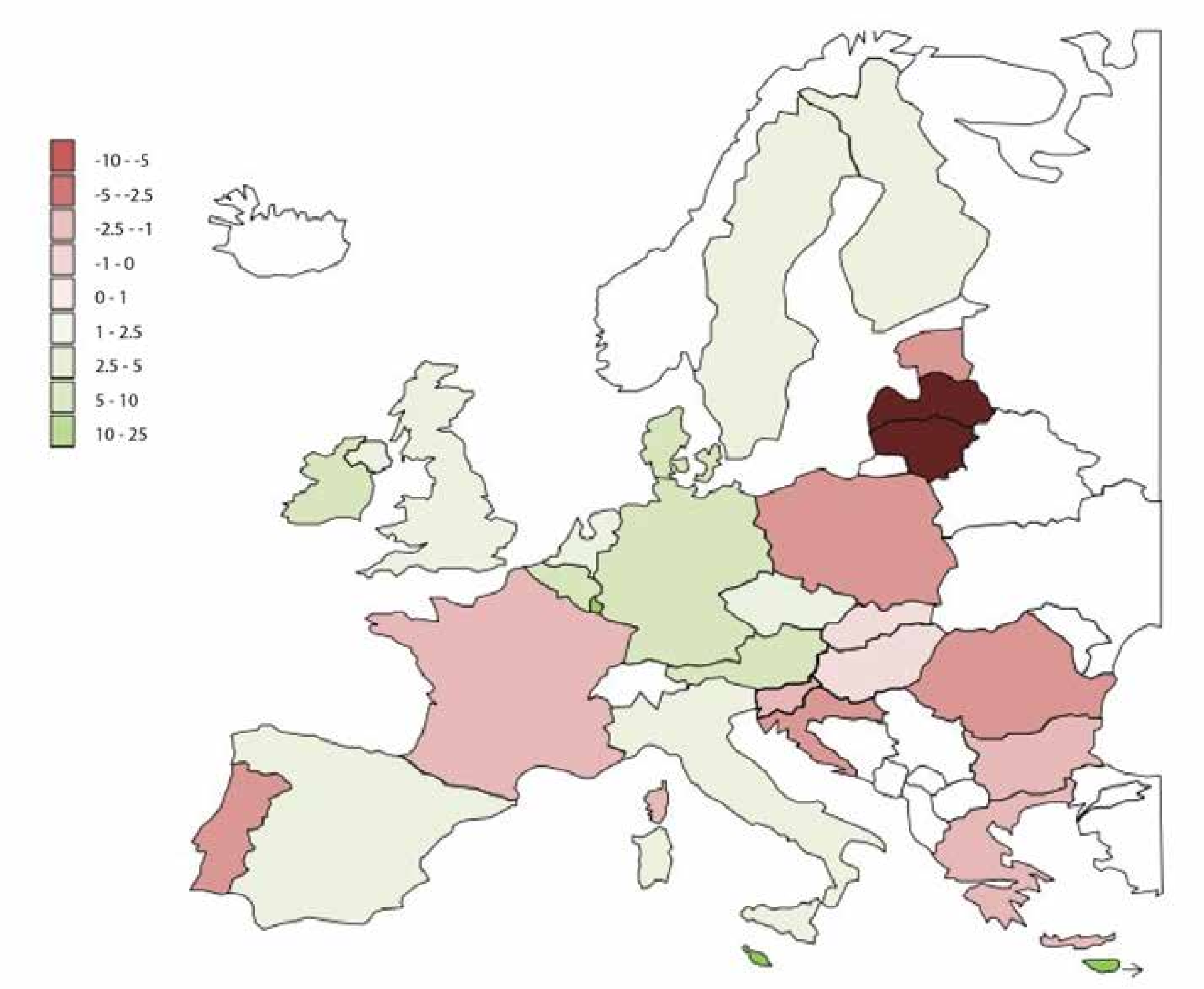
Concerns about crowding out of workers in receiving countries, on the other hand, appear mostly unjustified. Overall, the existing evidence suggests that the impact on wages due to incoming labour supply is small and immigrants often contribute to easing labour shortages rather than replacing the local workforce, moving to sectors and occupations where their labour is most needed (Kahanec and Zimmermann 2016, Kahanec and Guzi 2016, Kahanec and Pytlikova 2016).

The national view can differ, particularly for those countries who are persistent net exporters of labour

The benefits and opportunities that labour mobility brings about at the individual level and at the EU level notwithstanding, large and persistent outflows of people can be a substantial drag at the country level. Here, the literature on 'brain drain' links losses in the stock of human capital to negative effects on innovation, labour markets, and countries' fiscal situation, which is generally only partly compensated for by remittances or easier access to foreign markets through diaspora networks.

For Central and Eastern Europe, where net outward migration has been most pronounced over the past decade (see Figure 1) and dominated by the emigration of educated and young people, large-scale emigration has exacerbated skill shortages and slowed growth as well as income convergence (IMF 2016 and EIB 2018); although there is evidence that in some instances migration from new member states may have also led to improved knowledge flows and thus strengthened innovation in the region (EBRD 2018).

Figure 1. Net migration flow of EU citizens, 2007-2016 (% of working age population)



Note: Figures refer to cumulative net outflows of nationals to other EU countries between 2007 and 2016. Adjusted for returning population.
Source: Eurostat - Emigration by age group, sex and citizenship [migr_emi1ctz]. Population on 1 January by age and sex [demo_pjan]. Immigration (for EU28 countries except reporting country plus reporting country) by age group, sex and citizenship [migr_imm1ctz]. Population on 1 January by age and sex [demo_pjan]. Immigration data for EU28 countries is for years 2013-2016. Years 2009 and 2012 for this series are from the EC annual report on intra-EU labour mobility 2017. Missing years have been interpolated.

What is more, high and persistent outward migration also means a loss in government subsidies. Governments cover a major portion of the cost of education in the form of education subsidies, with public spending on the tertiary-educated population being particularly high (see Table 1)[3].

These subsidies are generally rationalised by the gap between private and social returns to education. As, in the case of the emigrating population, the latter accrue largely outside of the country where the education took place, the subsidy becomes a net cost.

The mismatch between where investment activities take place and where the corresponding returns accrue raises questions of intra-EU fairness, with some countries 'harnessing the benefits of investment activities paid for by others' (see Figure 2). In addition, a mismatch between investment activities and returns risks to have a negative effect on overall investment levels in human capital formation – if the most educated leave the country, the incentive for governments to invest in their education may be dampened[4] (even though from an EU-wide perspective, such investment would be desirable).

Similarly, if emigration rates are highest among those with 'portable skills', governments may be inclined to put more emphasis on educating professions that are more likely to stay, 'producing' too many lawyers and historians and too few 'nurses and doctors' from an EU-wide perspective.

The negative effect that outward migration can have on investment in human capital formation is often made worse by the negative consequences of high (net) outward migration on the fiscal stance in countries with 'persistent net outward migration'. Foregone taxes from emigrants imply ceteris paribus tighter government finances, which need to be matched by lower government expenditures. Some of this is likely to fall upon education. The problem is accentuated by the fact that young workers aged 25-45 with a relatively high level of

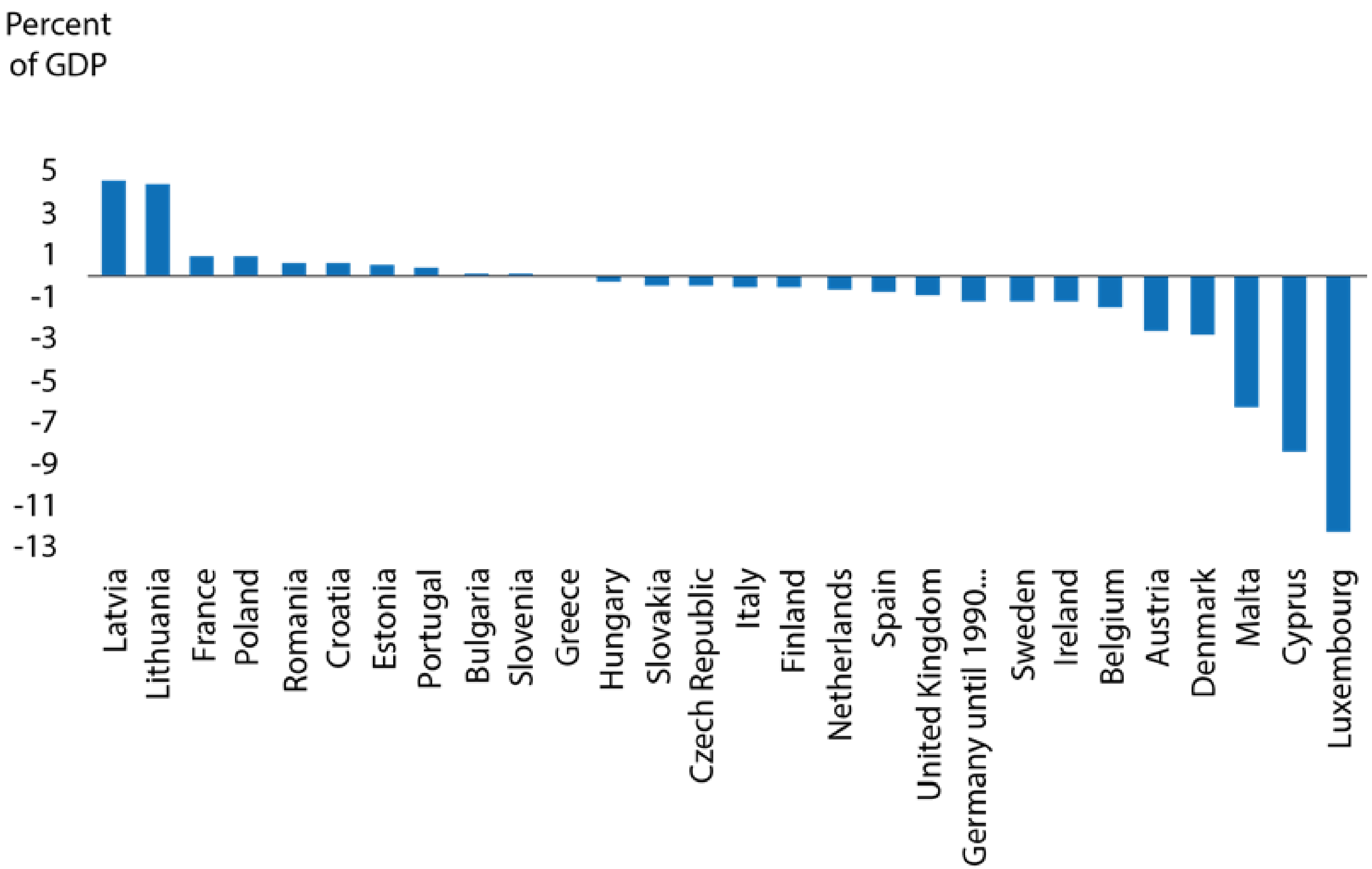
Table 1. Government spending on education by country (per student, as a percent of GDP per capita)

	Primary educated	Secondary educated	Tertiary educated
Belgium	20.9	24.7	32.3
Bulgaria	20.3	20.2	15.8
Czech Republic	15.3	23.8	21.9
Denmark	25.3	28.9	42.5
Germany	17.5	23.1	36.7
Estonia	20.6	20.7	26.8
Ireland	15.6	21.9	23.3
Greece	19.7	22.6	9.2
Spain	17.6	19.1	23..3
France	17.6	26.7	33.6
Croatia	24.4	24.4	25.8
Italy	21.2	22.6	25.9
Cyprus	31.9	38.3	33.3
Latvia	30.2	29.9	23.4
Lithuania	18.5	17.1	19.1
Luxembourg	19.9	20.3	41.7
Hungary	18.5	19.8	22.8

Malta	26.3	36.1	48.3
Netherlands	17.0	22.9	33.4
Austria	22.5	27.2	36.3
Poland	25.2	22.2	25.6
Portugal	22.8	28.7	26.0
Romania	9.8	14.7	22.7
Slovenia	27.4	24.7	22.4
Slovakia	19.1	18.9	25.2
Finland	21.3	26.0	35.5
Sweden	21.9	24.4	43.2
United Kingdom	24.4	22.0	38.6

Note: Figures refer to the average for the period 2012 to 2015. Where data was missing an average over adjacent years was taken.
Source: United Nations Education, Scientific, and Cultural Organization, (UNESCO). Initial government funding per student as a percentage of GDP per capita

Figure 2. Estimated net spending on the education of emigrants by country



Note: Authors' calculations. The figures are derived as follows: government expenditure on education of emigrants = Emigrants by level of education over total population multiplied by the cost per student for that level of education. Saved expenditure on education of immigrants = Immigrants by level of education over total population multiplied by the cost per student. The cost estimates are always those for the country under consideration.

Source: Eurostat - Emigration by age group, sex and citizenship [migr_emi1ctz]. Population on 1 January by age and sex [demo_pjan]. Immigration (for EU28 countries except reporting country plus reporting country) by age group, sex and citizenship [migr_imm1ctz]. Population on 1 January by age and sex [demo_pjan]. Immigration data for EU28 countries is for years 2013-2016. Years 2009 and 2012 for this series are from the EC annual report on intra-EU labour mobility 2017. Missing year have been interpolated. Eurostat: Population by educational attainment level, sex, age and country of birth (%) [edat_lfs_9912]. United Nations: Education, Scientific, and Cultural Organization, (UNESCO). Initial government funding per student as a percentage of GDP per capita. OECD: Education profile of migrants. DIOC 2010/11 education, who typically constitute the main group of emigrants, tend to make up the biggest (net) contributors to public finances.

Existing redistribution channels at the EU level address the issue at best partially

Existing EU schemes are insufficient to address the risk of under-investment in human capital formation.

- First, they account for a relatively low share of total public investment in education only (about 1%).

- Second, existing schemes – while clearly beneficial – only address the problem partially. Support via ERASMUS(+), for example, provides subsidies to facilitate pursuing studies or getting work experience abroad, aiming primarily at individuals that have already completed a large part of their education[5].

Other existing EU funds, such as cohesion and regional development funds, aim at correcting imbalances across countries and regions via compensation, which is not necessarily the same as compensating regions with high outward migration that invested a lot in their students. While correlated, being poorer does not necessarily mean high net outward migration nor high public investment in human capital.

To address the resulting risk of under-investment in human capital in times of rising intra-EU mobility but little willingness of member states to increase their contribution to existing redistributional schemes, we advocate learning from Japan's experience.

Japan as an example for a European tax credit for investment in human capital

Japan, like many other countries, experiences large intra-country flows of skilled and younger people from poorer, often rural areas to cities. While the country's overall population is shrinking, Tokyo's population (like that of other big cities) keeps on increasing by about 100,000 people per year.

The way the Japanese address the resulting mismatch between where most educational investment takes place and where the returns to this investment accrue – as well as the associated tensions between cities and rural regions – is as follows. People can donate a share of their income tax, which is local, to a region of their choosing in return for a 1:1 tax credit on next year's tax. The share can range from anywhere between 0% and 40%. The idea is that if taxpayers donate part of their income tax to their hometowns, Tokyo (and other large cities) no longer freeride on the substantial public expenditures required to raise and educate internal migrants.

The programme has become hugely successful in enticing donations since its launch 2008, with volumes surging in particular after the administration of Prime Minister Shinzo Abe, as part of its regional revitalisation initiative, doubled the upper limit on the tax-deductible donations. The annual amount of donations made to municipalities across the country reached ¥365.3 billion (€2.9 billion) in fiscal 2017 – 45 times the volume in its initial year in 2008[6].

Could such a scheme help to better align investment in human capital formation and returns to such investment across EU countries? Probably yes. It would mean that foreign-born (or foreign-educated) workers can opt in to voluntarily donate a part of their income tax to their home country with a view to supporting human capital formation. Just like in Japan, the donation could then be used as a tax credit towards their tax bill in the following year.

Complement existing redistribution channels and support education as a European public good

This would be a novel and complementary way to foster investment in education. It would be targeted at supporting human capital, also at an early stage where local investment is key, thus helping in particular those countries/regions that would otherwise be under-compensated for their investment efforts in this area.

As the donation is voluntary, countries/regions would have an incentive to develop and highlight (for instance, through a common platform) good practice examples of investment in human capital formation. This, in turn, would make for a good complementary initiative to existing re-distributional schemes – in particular if EU funds co-invest in these projects – insofar as it would help to make visible where EU funds go and why the resulting investments are desirable.

For most net recipient countries in terms of migrant workers, the scheme would not entail a big loss in tax revenues overall – in particular if it is combined with a ceiling (relative and absolute)[7]. By design, it would be flexible, reflecting changes in individual mobility situations. From a wider perspective, it could be a step towards addressing that some parts of Europe feel being taken advantage of/left behind within the EU and help to ensure equal access to quality education and excellence across the EU. ■

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Endnotes

1. Based on European Union Labour Force Survey estimates.

2. For adjusting to region-specific shocks, the contribution of migration is rather similar but adjustment takes longer in the EU.

3. The total public expenditure on education is defined as the sum of the expenditure on education and education administration made by local, regional, and central governments. It includes: i) current expenditure on education—expenditure for goods and services consumed within the current year, eg. staff salaries, pensions and benefits; contracted or purchased services; other resources including books and teaching materials; welfare services and other current expenditure such as subsidies to students and households, furniture and minor equipment, minor repairs, fuel, telecommunication, travel, insurance, and rents; as well as ii) capital expenditure on education—expenditure for assets that last longer than one year. It includes expenditure for construction, renovation and major repairs of buildings and the purchase of heavy equipment or vehicles.

4. This works via higher uncertainty of realising the gains and changes in the composition of the (local) electorate that can further reduce the incentives for investment in education, favouring for instance higher spending on social and retirement benefits for non-movers.

5. Erasmus+ also provides some support for organisations to promote transnational learning, cooperation and organisational capacity building and networking activities.

6. An important design aspect of the scheme in Japan is that it limits the gifts that municipalities can offer in return for a donation (to currently no more than 30% of the amount of donations). Municipalities that violate the rule are excluded from the program and the donations made to those municipalities no longer be tax deductible. Note that the furusato nozei system is currently undergoing reforms with a view to better balancing inflows and outflows, broadening the user base and improving the effective use of funds for regional revitalization for instance by strengthening contributions based on projects.

7. To avoid a too strong drag on recipient government's' fiscal situation, the scheme could be complemented with both a relative ceiling on how much individuals can donate as well as a maximum share of the total tax income that any one country may have to forego due to the scheme. The latter would be to shield smaller open economies that heavily rely on labour from other EU countries from an undue burden.

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What reforms are still needed, and why?
In January 2018 CEPR published a Policy Insight recommending euro area reforms. Agnès Bénassy-Quéré et al identify priorities that should be at the centre of discussions on euro area architecture

In this column, the authors argue that the problems that prompted their paper are still there, new problems are on the horizon, and the current state of the policy conversation on euro area reform is disappointing. They also identify priorities that should be at the centre of discussions on reform.

In January 2018, we published a paper recommending euro area reforms to the French and German governments (Bénassy-Quéré *et al*. 2018). The motivation for the paper was the continued financial and political fragility in the euro area, notwithstanding the economic recovery and important reforms such as common banking supervision, the creation of the European Stability Mechanism and the broadening of the ECB's policy toolkit.

The financial system remains fragile because of the continued exposure of sovereigns to domestic banks, as well as banks to their national sovereigns, and limited room for manoeuvre by the ECB. Political fragility prevails because the key grievances of the crisis remain unaddressed.

Crisis countries feel that excessive austerity was imposed on them, and that the euro area does not provide a level playing field for their banks and corporations, whose access to credit is relatively expensive. Creditor countries feel that they live in a system that does not ultimately enforce the no-bailout clause of the European treaties, exposing them to large fiscal liabilities.

As a solution to these problems, we proposed a set of reforms that would both increase risk sharing and strengthen market discipline in the euro area. The key idea was that risk-sharing mechanisms, such as European deposit insurance (EDIS) and a European unemployment re-insurance, could actually strengthen discipline, provided that first losses would continue to be borne at national level, and provided insurance premia were aligned with risk.

The reason for this is that, in the presence of stronger safety nets, it becomes possible to solve severe fiscal crises through orderly debt restructuring, obviating the need for both self-defeating austerity and enormous crisis loans that might not be repaid.

We also argued for regulatory 'concentration charges' that would reduce the domestic sovereign exposures of banks, and for a reform of EU fiscal rules to ensure that they provided enough discipline in good times, while not

Leaders and ministers seem to lack the sense of urgency and the sense of purpose that would be needed in the current situation. They do not seem to appreciate the lingering fragility of the euro area, the proximity of the economic risks, and the danger of relying excessively on the ECB for addressing problems magnifying economic downturns. And we argued for better enforcement mechanisms; imposing fines on nations is rarely credible. A better approach would be to require countries that spend more than the ceiling allowed under the rules to finance the extra expenditure by issuing subordinated bonds, raising the costs of such issuance, and protecting incumbent bondholders.

What is new?

Since we wrote our paper, four things have happened that are relevant to our initial worries, the proposed solutions, and economic reform in the EU more broadly.

First, we received broad support both for the general strategy proposed in our paper and for some of the proposals, along with some criticism (Pisani-Ferry 2018). For example, IMF authors published a paper advocating a very similar approach (Berger *et al*. 2018). There seems to be consensus among policy economists on how to reform the Stability and Growth Pact, namely, to focus on expenditure ceilings set to slowly reduce the debt ratios of overindebted countries[1].

Most importantly, the Meseberg declaration by German Chancellor Angela Merkel and French President Emanuel Macron of June 2018, and a subsequent EU summit, seemed to take some of our concerns and solutions on board[2].

Fixing the euro area's banking system was recognized as a high priority, leading to a reaffirmed commitment to a backstop from the (ESM) for bank crisis resolution, as well as explicit reference to a European Deposit Insurance Scheme. Referring to a prior letter by the Eurogroup's president, political leaders also signalled openness to more flexible forms of ESM lending to countries that do not experience a full-blown crisis as well as bond clauses to allow for orderly sovereign debt restructuring and the bail-in of private creditors, without automaticity.

Second, despite these promising signals, the implementation and follow-through of euro area reform have been largely disappointing. There was an agreement on implementing the ESM backstop to the common resolution mechanism, but it may be too small, especially when faced with liquidity issues, and is subject to national vetoes. EDIS and sovereign concentration charges are still largely considered taboos in the political debate.

The very principle that a common currency area may need a fiscal component, such as a common unemployment re-insurance, continues to be rejected by some euro area members. As of April 2019, a consensus may be emerging for a small budget within the EU's regular multi-year budget, possibly in an order of magnitude of around €20 to €30 billion, earmarked for specific support for member states in the area of innovation and in the form of loans.

While such a budget may constitute a first step, it would not fulfil any euro area macroeconomic stabilisation function, nor would it be a suitable tool to support national fiscal policies in case of an economic slowdown or recession.

On other key issues there has been virtually no progress. Despite the intellectual consensus there seems to be no appetite to change common fiscal rules to make them more transparent and less intrusive, but rather to give national governments more flexibility to use national fiscal policies.

Third, the economic outlook for the euro area has darkened. The slowdown of major euro area economies, including Germany, in the second half of 2018 has led the ECB to put the normalisation of interest rates on hold. Protectionism in the US is a significant concern, both because the trade war with China undermines investor confidence and may be contributing to the cooling of the Chinese and US economies, and because of concerns about at trade war between the US and Europe.

With interest rates already near zero and government bond holdings close to the limits that the ECB had set itself in order to avoid pushing private lenders to the sidelines, the ECB's room for stopping the next recession is limited. Any new instruments may be increasingly controversial. At the same time, the EU lacks fiscal stabilisation mechanisms. Unless the next recession disproportionately hits the stronger members – those that have fiscal room to respond – the euro area will be short of instruments to contain the crisis.

Fourth, the discussion on economic policies in the EU and the euro area has recently broadened, in part in reaction to economic nationalism in China and the US. Germany's Economy Minister Peter Altmaier published a National Industrial Strategy 2030 in February 2019, which was followed by a joint *Franco-German Manifesto for a European industrial policy fit for the 21st century*.

President Macron made a new push for European reforms in early March 2019, which abstained from returning to euro area issues but contained additional proposals in the area of EU trade and public procurement policies, and argued for a revision of European competition policies.

While the new focus of these policymakers on raising productivity growth and innovation maintaining EU economic sovereignty in the face of external challenges is welcome, some of the proposals that have been floated – in particular, promoting national and European champions and weakening EU competition policies – raise major concerns (Feld *et al*. 2016, Fratzscher and Duso 2019, Pisani-Ferry 2019, Zettelmeyer 2019).

To summarise, the problems that prompted our January 2018 paper are still there, new problems are on the horizon, and the current state of the policy conversation on euro area reform is disappointing. Leaders and ministers seem to lack the sense of urgency and the sense of purpose that would be needed in the current situation. They do not seem to appreciate the lingering fragility of the euro area, the proximity of the economic risks, and the danger of relying excessively on the ECB for addressing problems that political leaders are unwilling to solve.

Priorities going forward

In light of the weakening economic cycle, the deficiencies of the euro area architecture may thus come to the fore sooner than we had expected a year ago. Four priorities on euro area reform should be at the centre of the discussion.

First, euro area leaders must finish the job started in 2012 of breaking the vicious circle between banks and national governments. This requires making EDIS a reality but also breaking another important taboo, namely the lack of meaningful regulation of bank exposures to sovereigns. This could be achieved by limiting how much domestic sovereign debt banks can hold (for example, through sovereign concentration charges).

Moreover, the creation of a safe asset for the euro area, without mutualising sovereign risk, should be explored further. This would contribute to severing the financial link between national governments and banks and reduce the costs of restructuring government debt in cases where debt is unsustainable. It could also prevent destabilising cross-border flights to safety.

Second, there should be a discussion both on the reforms of the fiscal framework for the euro area, but also about the appropriate fiscal policy amid the economic slowdown and the substantial downside risks facing Europe at the moment. The current fiscal rules have proven to be overly complex, hard to enforce, and procyclical. The EU should move towards simple public expenditure rules guided by a long-term debt reduction target.

Third, priority should be given to the creation of a proper macroeconomic stabilisation tool for the euro area. An important reason why some countries experienced crises that were far more severe than necessary over the past ten years was the lack of fiscal stabilisation. The Eurogroup had raised the possibility of introducing an unemployment insurance scheme that might fulfil such a stabilisation function – irrespective of whether or not it is labelled a 'euro area budget'.

Such a scheme could play an important role in helping countries avoid a deep recession and crisis. It can be set up without creating a 'transfer union, thus addressing concerns of Germany and other northern European countries. The objective now should be to better explain the economic benefits of such a stabilisation mechanism.

Fourth, the EU should focus on completing the Single Market, including through Banking Union and Capital Market Union, and an integrated research and investment strategy (in particular, to fight climate change). The reforms of the euro area emphasised in our previous work make a contribution towards this objective. A particularly important dimension is the integration of the banking market.

Beyond technicalities, euro area countries share a common interest in having banks that diversify risk rather than concentrating it along national lines. The tendency towards within-country concentration of the banking market is not a sound development.

The push by the French president and other EU politicians to strengthen other economic dimensions of the European Union in the areas of climate change, external security, competition, trade, and industrial policy is important and timely. However, these initiatives should not undermine European competition policy.

These priorities, which concern the euro area as a whole, are a vital complement to reform efforts aiming at enhancing productivity, growth and fiscal consolidation at national level. Without stronger efforts both at the euro area and the EU level, Europe will not prosper. ■

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Endnotes

1. Changes in tax revenue would not affect the expenditure ceiling unless they are the result of tax policy (eg. via a tax cut). A collapse in revenue in a downturn would hence be fully absorbed by an increase in the fiscal deficit. Conversely, during a boom, expenditures would remain constrained by the ceiling, leading to high fiscal surpluses. As a result, automatic stabilisers would be more effective than they are today (Beetsma et al. 2018, Feld et al. 2018, Darvas et al. 2018).

2. See https://www.elysee.fr/emmanuel-macron/2018/06/19/meseberg-declaration-renewing-europes-promises-of-security-and-prosperity.en, as well the EU Commission roadmap for EMU reform at https://ec.europa.eu/commission/sites/beta-political/files/euco-emu-booklet-june2018_en.pdf

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Upward steps on the income ladder

Since their accession to the EU 15 years ago, the incomes of most central Europeans have increased faster than the incomes of longer-standing members. Zsolt Darvas finds the very poorest people have not progressed in some countries

Since the 10 central European countries joined the EU on May 1st 2004, their average income converged towards the EU average. Several aspects of EU membership could have contributed to this process, such as improved market mechanisms, institutions and business environment, access to the single market, the involvement of central European companies in European and global value chains, and access to EU education and labour markets. Perhaps the vast EU financial support of these countries also played a role (see a summary in my 10-year anniversary blog post here).

However, the picture is not universally positive. In some countries, such as Hungary, the World Governance Indicators have steadily deteriorated since the early 2000s, while in others the improvements were small or there were no improvements at all, as highlighted by Maria Demertzis and Inês Gonçalves Raposo.

Yet there was convergence in average incomes. Let's look beyond averages: have the poor, the middle class and the rich succeeded equally since they joined the EU?

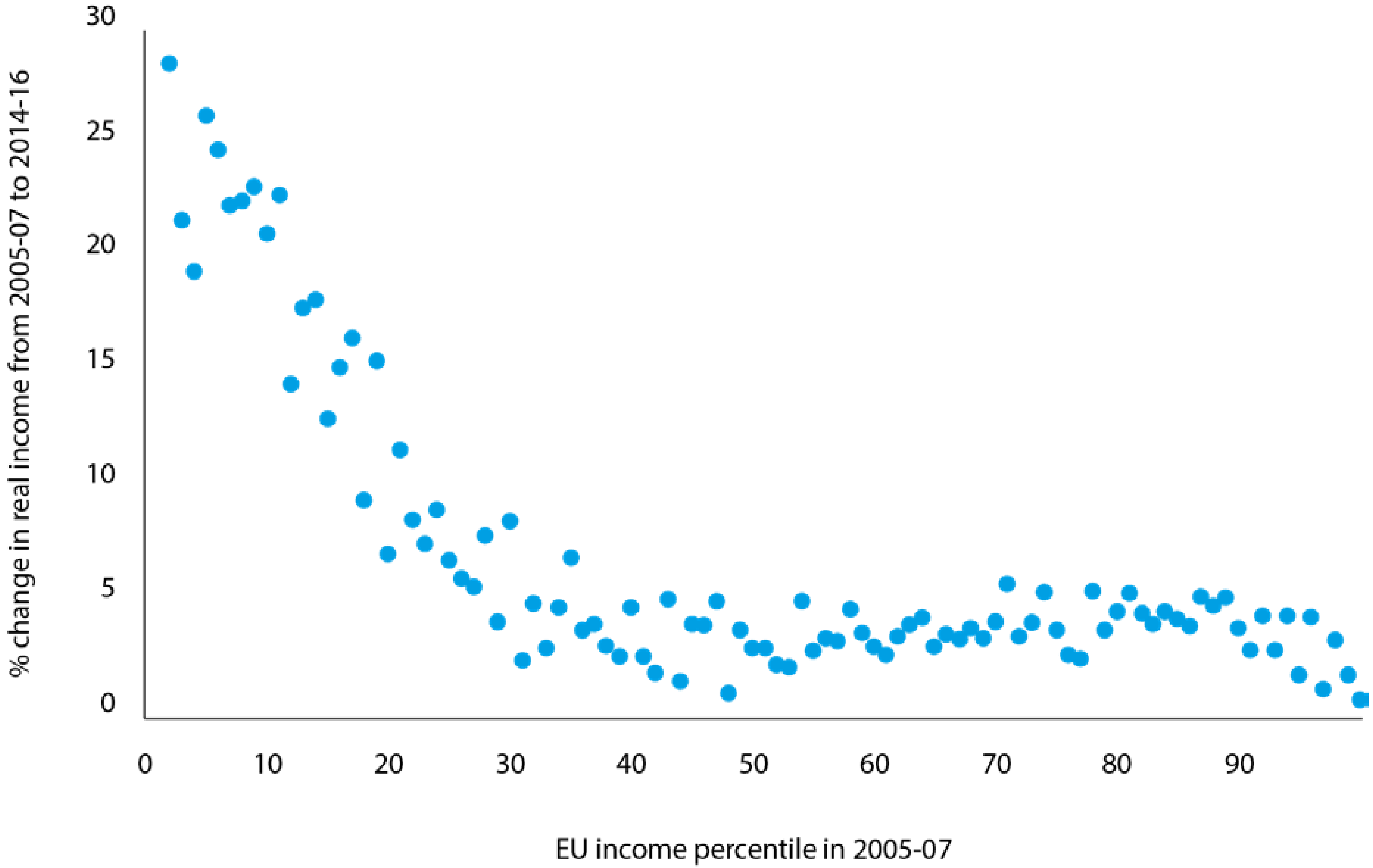
To answer this question, I approximate the income of each percentile group – that is, the poorest 1%, the second poorest 1%, and so on – for each EU member state. Then I combine them to obtain the EU-wide income distribution. I focus on disposable household incomes from the EU-SILC survey, so I consider only household income (not all kinds of income included in GDP) and after taxes and transfers. Since income shares vary quite a lot from one year to the next for the poorest and richest segments of the society, I report change from the average income in 2005-07 to the average of 2014-16. See a few technical notes about my calculations at the end of this post and let me start here by focusing on some key findings.

Figure 1 shows that the real income growth of the relatively poorer segments of the EU society benefitted rather significantly, seeing about 20-30% real income growth from 2005-07 to 2014-16 on average. The poorest 1% is not included on the chart, because their average income is negative – there are more duties to pay than their income – and it is difficult to interpret the percentage-change in a negative income. Those people belonging to roughly the 30-99 percentiles of the EU-wide income distribution benefitted from rather similar income growth of around 4%, while the richest 1% hardly saw any income growth on average. So, Figure 1 clearly shows that the EU as a whole became more equal from 2005-07 to 2014-16.

Figure 2 shows that the share of the 12 member states that joined the EU in 2004 and 2007 (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia in 2004; Bulgaria and Romania in 2007 – I have to exclude Croatia, who joined in 2013, because data starts only in 2009) was rather high among the poorer

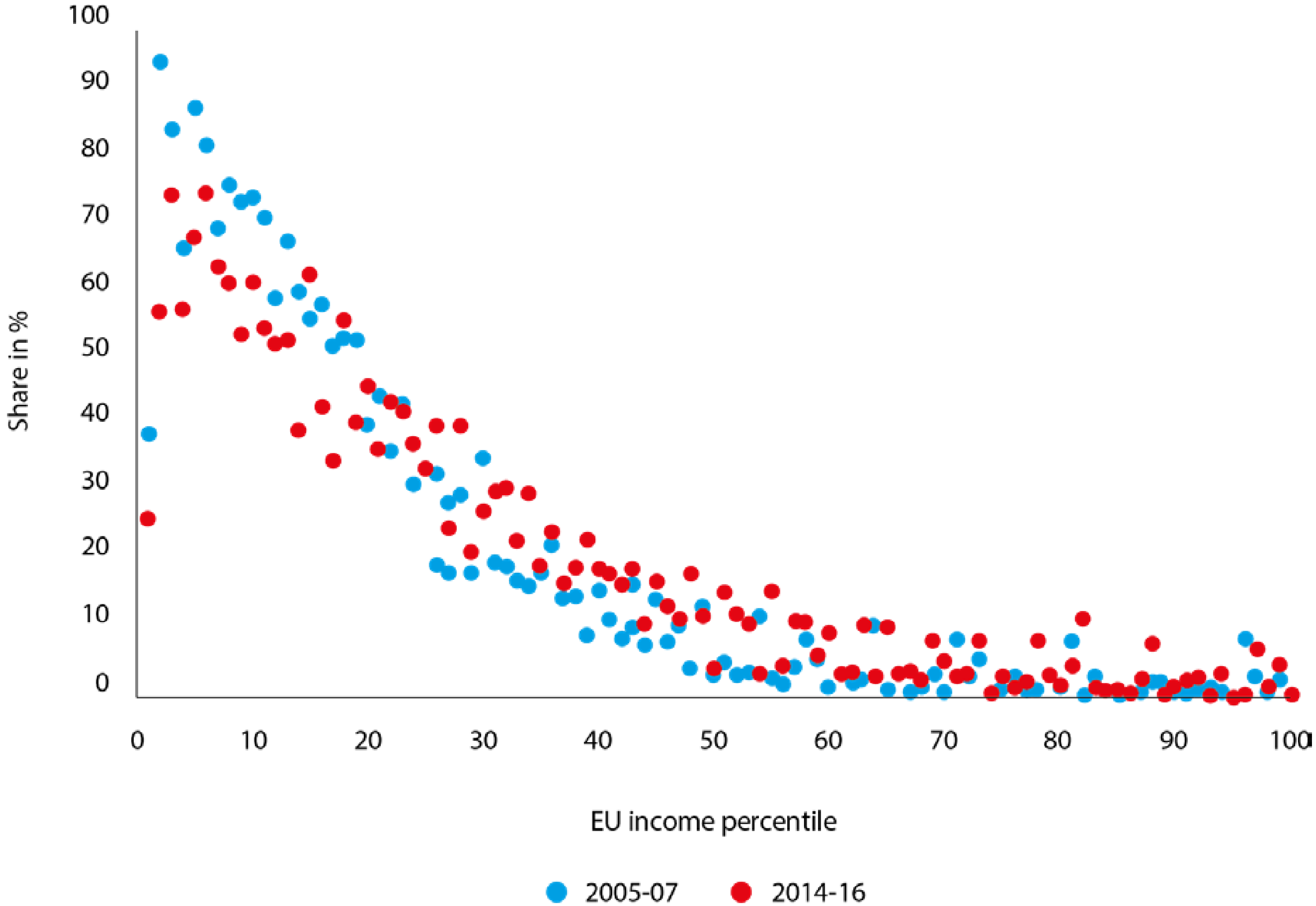
There is a clear upward movement, then, on the European income ladder for both the poor and the rich central Europeans

Figure 1. EU as a whole: income growth from 2005-07 to 2014-16 by income percentiles



Source: author's calculations Note: first 27 EU members are considered, including the UK, but not Croatia. The chart shows the % real income growth from the average of 2005-07 to the average of 2014-16 for each income percentiles of the EU, except the first income percentile, which has negative income.

Figure 2. The share of 12 new member states in EU income percentiles



Source: author's calculations. Note: the first 27 EU members are considered, including the UK, but not Croatia. The chart shows the share of the 12 countries that joined the EU in 2004 and 2007 in the EU income distribution by percentiles in 2005-07 and in 2014-16.

percentiles of the EU income distribution in 2005-07, but less so in 2014-16. For example, the share of the 12 new members in the second poorest 1% segment of the EU population was 96% in 2005-07, but fell to 58% in 2014-16.

The central European rich has also moved up: for example, in 2005-07, 8% of the 96th percentile of the EU income distribution was from this region (mostly due to the richest Polish). Most of these people moved up to the 97th percentile by 2014-16 (see the calculation method in the annex for further details).

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Let's look at developments within countries. Figure 3 shows rather mixed changes. The rich fared much better than the poor in Bulgaria, Cyprus, Estonia, Hungary, Lithuania and Slovenia. The opposite holds for Latvia and Poland (and Croatia, for which a shorter time period is available), while for the Czech Republic, Malta, Romania and Slovakia the results are more mixed. In many countries (Bulgaria, Estonia, Hungary, Lithuania, Romania and Slovakia) the poorest 1% still has negative income (and thereby these people are not included on the chart).

Therefore, while climbing up the EU-wide income ladder is good news for most central Europeans, more attention must be paid, and more help offered, to those who are left behind.

Figure 3 also allows for some notable observations of the 15 older EU members. For example, eight of them have, on average, negative income for the poorest 1% segment of the society (Austria, Denmark, Germany, Greece, Italy, Spain, Sweden and the United Kingdom). In Italy the real income declined in all percentile groups, yet poorer people suffered even more. For example, the income of the second percentile fell by a stunning 72% in real terms, nearing Greek values. Most percentile groups, and especially the poorer people, also suffered income declines in

Luxembourg, Portugal and Spain. Therefore, helping the poor should be on the agenda of most older EU member states too. ■

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Annex: notes on the calculation method

Eurostat publishes income shares data for the following groups in each country: the 1st, 2nd, 3rd, 4th, 5th, 95th, 96th, 97th, 98th, 99th and 100th percentiles, the ten deciles and the four quartiles in its dataset Distribution of income by quantiles – EU-SILC survey. However, data for other percentiles are not made public and data is rounded to one digit after the decimal. Lack of further significant digits is really problematic for low-income groups because, for example, an increase in the income share from 0.1% to 0.2% might falsely suggests that the income of that group is doubled, while it could be possible that it has changed from 0.149% to 0.151%. I call (again) for Eurostat to publish at least three significant digits for all income share indicators.

I therefore use an approximation, the so-called Lorenz Curve regression method, to estimate the income share of those percentiles of the income distribution that are not available at all (percentiles between 6 and 94), and the 1st percentile which is not available with suitable precision. I found that the Lorenz Curve regression method is very precise in a recent article just published in World Development. For the 2nd, 3rd, 4th and 5th percentiles I have not used the imprecisely reported income shares, but instead I use the average of the bottom and the top cut-off income points (which are available at a high level of precision from Eurostat's Distribution of income by quantiles – EU-SILC survey [ilc_di01] dataset).

For the 95th, 96th, 97th, 98th, 99th and 100th percentiles I used the income shares provided by Eurostat. Price levels differ between countries, which calls for the use of purchasing-power-adjusted income indicators. However, Eurostat publishes only a current-price purchasing-power-adjusted income variable, which is ideal for cross-country comparison but not for comparison across time.

Therefore, I use purchasing-power-adjusted income for the initial (2005-07) level of income, but I calculate the change from 2005-07 to 2014-16 by the inflation-adjusted local-currency value of income. The source of 'Mean equivalised net income' is Eurostat's Mean and median income by age and sex – EU-SILC survey [ilc_di03] dataset, while the source of the price index is Eurostat's HICP (2015 = 100) – annual data (average index and rate of change) [prc_hicp_aind] dataset.

Using the estimated income shares for each percentile and mean income, I calculate the actual income (in constant-price local currency) for each percentile of each country in each year. Then I calculate the change from the average of 2005-07 to the average of 2014-16 for each percentile and country. This calculation implicitly assumes that, within a country, the same people remain in the same percentile through the years. While this implicit assumption must be wrong, it can still provide a good proxy, because some people remained in the same percentiles, some have moved up, and others down.

Once these country-specific real income growth rates for each income percentile are estimated, I combine them, using population size, with the European income distribution by considering the 2005-07 income at purchasing-power standards.

Let me also note that Eurostat reports negative net income values (for the level of income) for the lowest income percentile for about half of the EU countries. Such negative income is a regular feature of income surveys. They can result from tax liabilities exceeding gross incomes or from certain investment losses, or when the business of a self-employed individual has made a loss.

Of course, they can also arise from incorrect reporting. Top incomes are also generally incorrectly measured in income surveys, due the under-representation of rich people in such surveys and the under-reporting of the income of those who participate. Poorer people might also under-report their income, especially if it is earned on the black market. Such problems have to be kept in mind when working with income survey data, as I do in my post.

A final note on Eurostat data is that the various EU-SILC statistics are presented for the survey year, and not for the underlying income reference period. The income reference period in EU-SILC is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the UK (for which the income reference period is the current year) and Ireland (for which the survey is continuous and income is collected for the last twelve months).

That is, with the exceptions of the UK and Ireland, a value for a particular year in the Eurostat database refers to the previous year, eg. the 2017 values in the Eurostat database refer to 2016

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European Parliament election results: the long view

Following the latest European elections, Nicolas Véron updates his previous analysis of trends in the share of European Parliament seats among 'mainstream' and 'non-mainstream' parties

HERMES AVIATION
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Comments about the European Parliament election results are predictably all over the place, and typically reveal more about the commentator than anything else. To get a clearer sense of direction, it may be useful to compare the outcome not only with recent opinion polls, or the previous election, but also with all the other ones before.

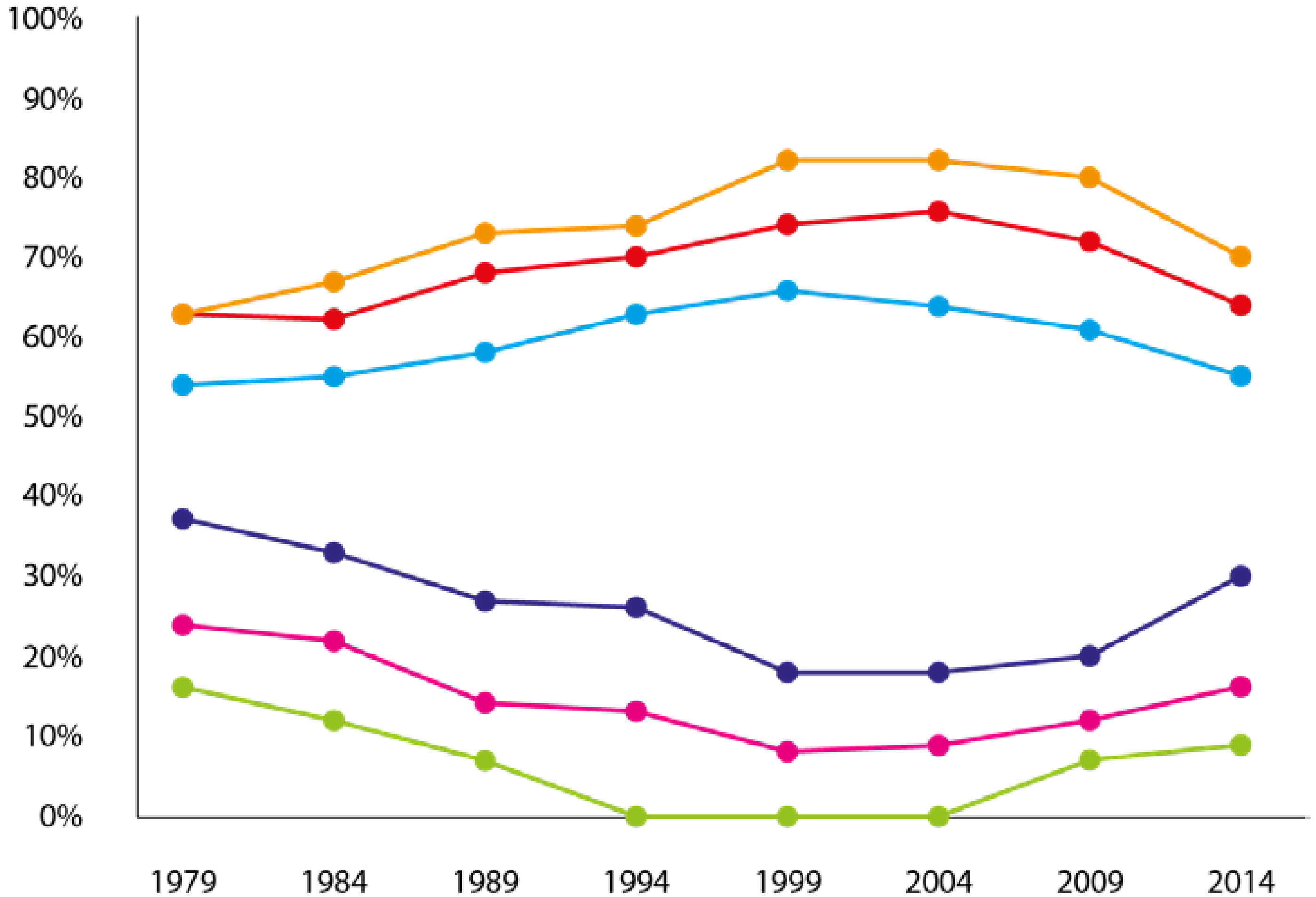
My own perspective is affected by the fact I did exactly that after the previous round in 2014, when I published a chart and brief post arguing that the then-observed increase in votes for what I dubbed 'non-mainstream' parties was significant, but did not bring them to historically unprecedented levels.

In this post, I take my own 2014 methodology as a commitment device to analyse the results of the 2019 election. Below is the 2014 chart.

The emphasis on methodology is important, because the devil is in the labelling. 'Populist' or other similar monikers are often in the eye of the beholder. There is a widespread sense that some parties are more disruptive than others, but such perceptions are easily distorted – not least since some of these 'insurgents' have been firmly in power for some time, such as Fidesz in Hungary since 2010.

Similarly, my choice to label UK conservatives as 'non-mainstream', except during the long decade of their membership of the European People's Party (EPP) group, may be questioned from a British perspective, but makes more sense from an EU perspective both before and after the Tories-in-the-EPP parenthesis (the green line in the chart refers to the group now named European Conservatives and Reformists [ECR], and its predecessor the European Democrats in the late 1970s and 1980s). That same choice arguably makes even more sense today.

Figure 1. Share of total Members of the European Parliament.



- Two main parties [EPP + S&D]
- Three centrist parties [EPP + S&D + ALDE]
- 'EU mainstream' [centrist + Greens]
- Conservatives
- Right-of-center groups
- 'European non-mainstream' [right-of-center + left-of-center + independents

Source: Bruegel

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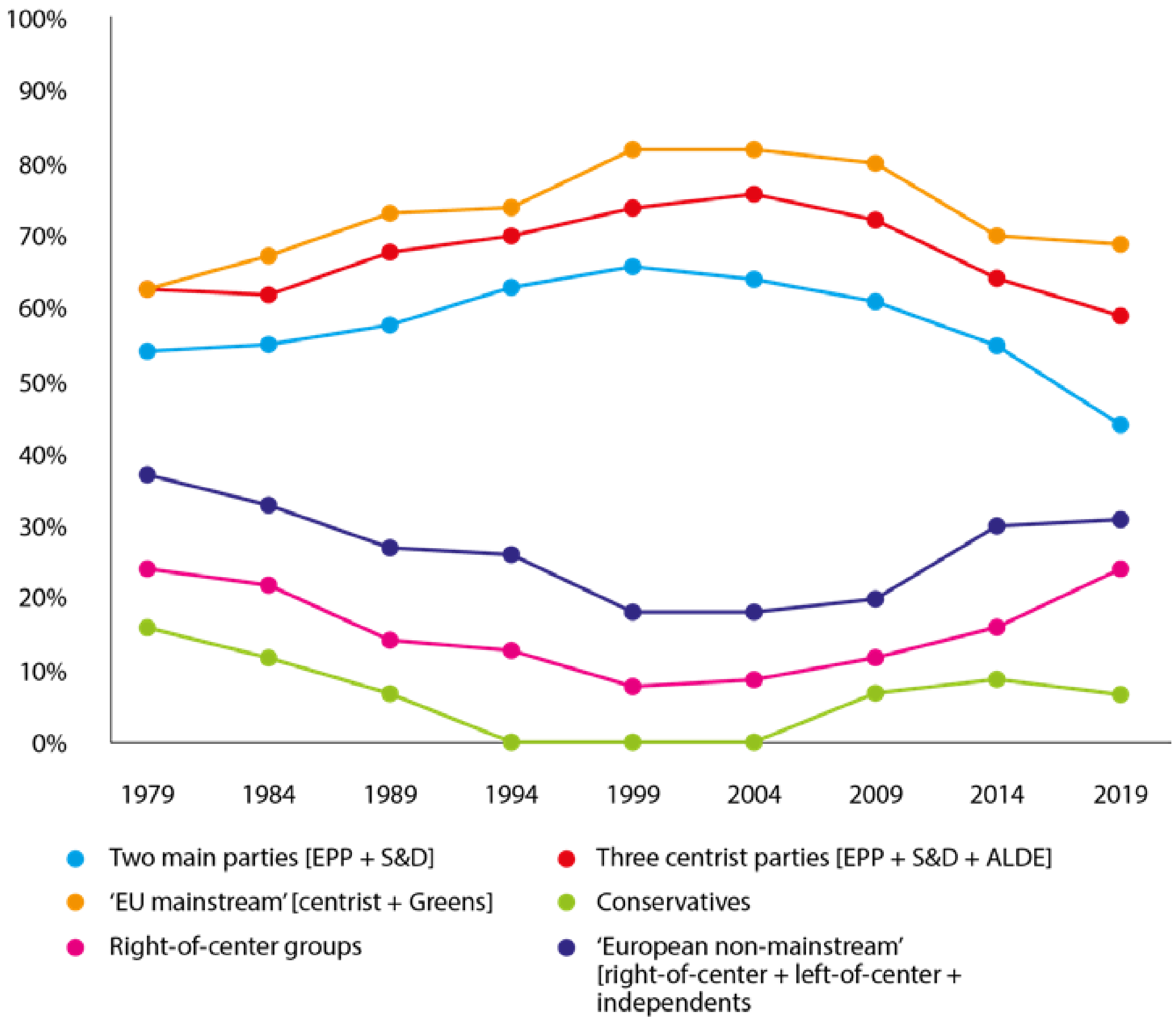
In 2014 I produced the chart in late June, when the respective national parties' membership in EU-wide parliamentary groups had coalesced. In the 2019 cycle we are not yet there, and indeed there are more uncertainties than usual as to the respective perimeters of these pan-European groupings. There is an additional and large uncertainty related to Brexit, to which I return below.

But thankfully there are many projections based on current affiliations, declarations, and opinions. In the chart below, I use the one by Simon Hix and his colleague Kevin Cunningham of the London School of Economics. Cunningham's and Hix's projection has the advantage of minimising the number of unaffiliated MEPs, ie. they allocate more of the elected MEPs to specific party groupings than most others, including when these MEPs ran under the banner of parties that were not represented in 2014. That gives more precision to the result.

Viewed from a long-term EU perspective, the new European Parliament may be unprecedentedly diverse, but is not exceptionally radical

Figure 2. Share of total Members of the European Parliament, updated to 2019.



Source: Bruegel

Other projections however were not drastically different when consulted on May 28th, such as those by *Europe Elects*, *The Guardian*, *Politico*, or on *Wikipedia*. For 2014 and earlier rounds, I just kept the numbers from my 2014 post, even as some MEPs or parties have changed their group affiliation between 2014 and 2019.

The implications are quite clear. The rise of the far right in 2019 is notable and unprecedented. So is the fall in the traditional *Volkspartei* combination of centre-left and centre-right, namely EPP and the Socialists & Democrats (S&D). For the first time ever, these two no longer command a majority together.

But these trends are offset by others: respectively, the sharp erosion of the far left, and the rise of the Greens and liberal centrists (Alliance of Liberals and Democrats in Europe [ALDE], to which the 2019 projection adds presumed allies especially in France and Romania).

As a consequence, the broad grouping which in 2014 I labelled 'EU mainstream' has a near-identical share of total MEPs, close to 70%, and so has the 'non-mainstream' at around 30%. Viewed through this prism, the disruptive election was 2014, not 2019. This round is one of stability along the mainstream/non-mainstream divide, even as each camp gets internally reshuffled.

In my 2014 post I concluded on what was then a contrarian note, namely the possibility of *"another trend reversal"* – by which I meant some recovery of the mainstream camp in 2019. As the above chart suggests, this has not happened: the mainstream share, as I defined it, declined slightly this year – and will decline further if, as could well happen, parties such as Fidesz and Romania's PSD leave the EPP and S&D groups respectively.

But another event may intrude, if the UK confirms its stated intention to leave the EU. In that case, the 73 just-elected British MEPs will lose their seats and will be partly replaced by 27 MEPs from 14 other member states, which

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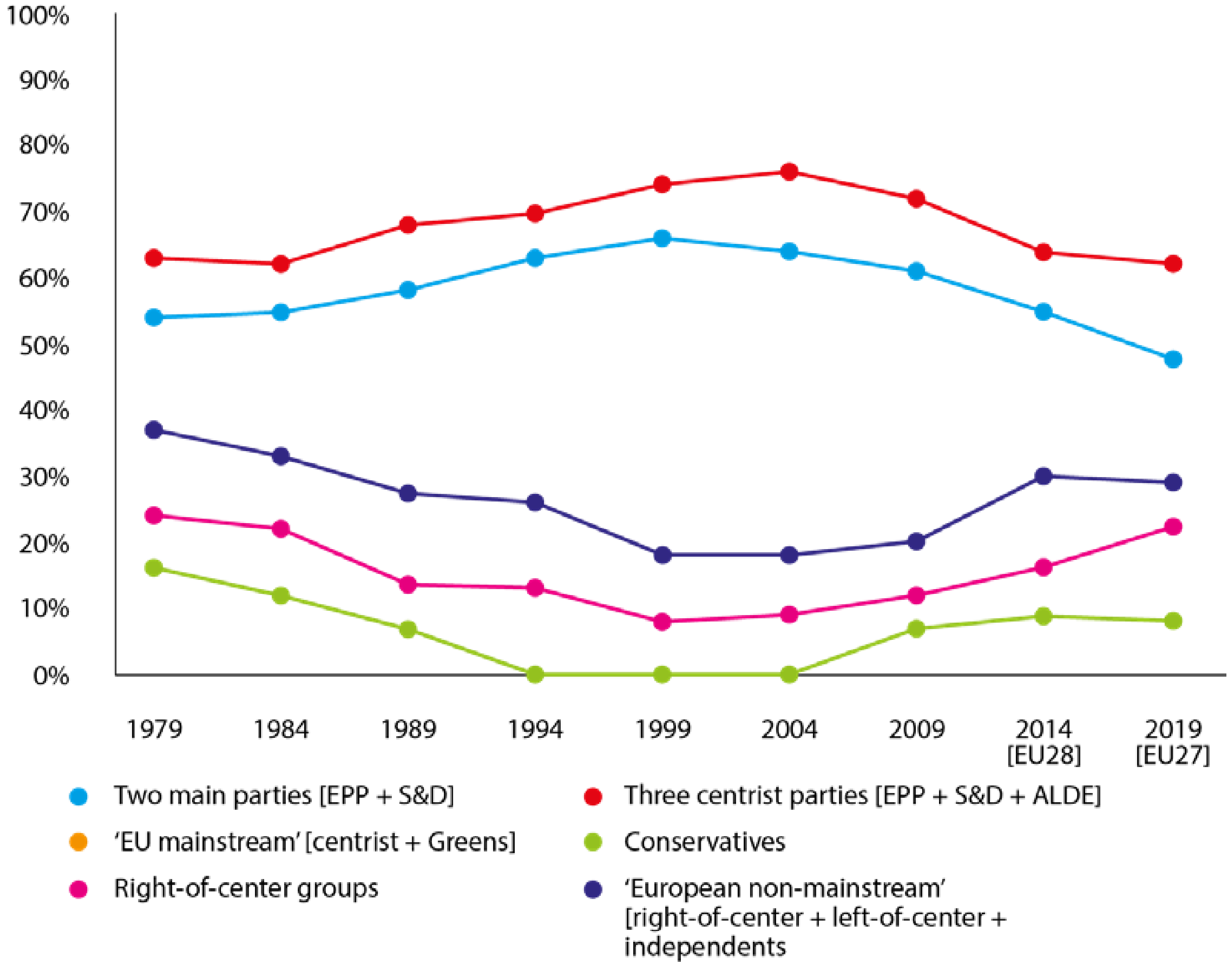

Source: Bruegel

were also elected last week but are currently in limbo (one of these is Sandro Gozi, former Italian undersecretary for European affairs and number 22 on the centrist LREM list in France).

A full list of these 27 'extra' MEPs was not found while researching this post, but it can be expected to be broadly similar in party composition to the 678 MEPs of the EU27 member states – ie. excluding the UK. Since the just-elected UK MEPs are comparatively less 'mainstream' than the EU28 average under the convention used here (52% mainstream to 48% non-mainstream, to be precise), that simulation would actually result in a very slight trend reversal, all things equal.

Needless to say, all things are not equal, and further rejigging of the party groups is to be expected – some of it presumably affecting what is presented here as the mainstream/non-mainstream boundary. But the broader picture is likely to hold. Viewed from a long-term EU perspective, the new European Parliament may be unprecedentedly diverse, but is not exceptionally radical. ■

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