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BELA GALGÓCZI EXAMINES THE DECARBONISING OF EUROPE'S AUTOMOTIVE INDUSTRY

CHRISTINE LAGARDE DISCUSSES THE RESILIENCE OF THE CESEE ECONOMIES

URSULA VON DER LEYEN OUTLINES EUROPE'S PRIORITIES FOR THE YEAR AHEAD

THE EUROPEAN TRADE AND FINANCE PLATFORM

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The EU at the time of the New Cold War: A Manifesto

Ahead of next June's European Parliament elections Marco Buti *et al* set out key elements that could form the basis for a new political contract capable of enhancing the global role of the EU

Ahead of next June's European Parliament elections, in this column a group of distinguished former senior European policymakers, eminent personalities and leading academics present their take on the challenges facing the European Union and chart a course for an ambitious way forward.

Writing in a personal capacity, the authors set out seven key elements that could form the basis for a new political contract capable of re-establishing trust, strengthening solidarity, boosting the Union's ability to act in the interests of all its citizens, and enhancing the global role of the EU. The signatories, while fully supporting the general lines of this Manifesto, might not necessarily agree on each specific aspect.

The long-lasting war in Ukraine and the deepening of the conflict between the US and China are the defining moments of our time. A new world order is in the making and, if the EU remains a half-baked construction, it will not play a role in shaping it.

The US and China are economic and political areas, the EU is not. A third global actor would make the international system more stable. The EU should strive to give multilateralism a new chance and avoid a pure logic of power in international relations which would make everyone worse off.

The geopolitical stance and role of the EU will crucially depend on reconciling its domestic and international agendas. To do so, European leaders must acknowledge that the EU's current socioeconomic, institutional, and, ultimately, political model is not sustainable in a post-pandemic world characterised by 'hot' and 'cold' wars.

From a socioeconomic standpoint, the dependence on external demand, the gradual drift away from the technological frontier, the risk of losing the leadership in the fight against climate change, a stagnant demography,

and the progressive undermining of social cohesion are calling into question the main tenets of the European economic and social model.

Institutionally, a decision-making process that only produces notable advances during major crises – and is subject to decision-reversal when the pressure abates – is inconsistent with the need to project a coherent stance domestically and globally.

A new political contract capable of re-establishing trust, strengthening solidarity, boosting the Union's ability to act in the interests of all its citizens, and enhancing the global role of the EU

Two persistent conflicts are stretching the political fabric of the EU to the limit: (1) the traditional 'North-South' conflict of interest along the solidarity/responsibility dimension; and, compounding this, (2) an 'East-West' conflict of values along the integration/national sovereignty dimension. Recent political changes in several member states increase the geographical complexity of these conflicts.

Economic and social weaknesses, institutional inconsistency, and political tensions are bound to increase and lead to paralysis of the EU as it faces the prospect of enlargement to 35+ members.

A new synthesis is needed leading to a new political contract.

A useful starting point is identifying the avenues not to be pursued. The denial of the climate challenge, the short-sightedness of a rear-guard mercantilism, the temptations of technological protectionism and withdrawal from international value chains, the sirens of demographic autarchy, and the outsourcing of defence and security would be tantamount to the demise of the EU and its irrelevance in global governance.

These false solutions would not only hinder any positive evolution, but they would also weaken EU's strengths such as the working of the Single Market and the comparative advantages in terms of environmental standard, welfare state, and regulation.

Searching for a new path is key not so much for the superior wellbeing of 'Europe', but for allowing its members to effectively pursue their long-term domestic and external goals. The time has come to acknowledge that nationalism is contrary to the national interest, that member states' national sovereignty is ineffective unless it is redefined in terms of European sovereignty, and that the supply of European public goods is crucial to satisfy national demands for economic, social, and political security.

To address today's key challenges, an approach encompassing the European dimension is unavoidable. Reaching the technological frontier will require mobilising private and public resources that no member state can do alone.

To effectively pursue the green, digital, and artificial intelligence transitions, we need to complete the Banking Union and to operationalise the Capital Markets Union to allocate public and private resources to projects that are 'long in ideas and short in collaterals'.

Joining up forces and funds at the EU level will be needed to meet the immense task of reconstructing Ukraine. Ensuring Europe's safety in a world of increasing threats and isolationist temptations and moving towards strategic autonomy will require pooling sovereignty at EU level in defence and security.

To tackle effectively the challenge of immigration, a new relationship between the EU and Africa will have to be established. This will have to be based on cooperative agreements that cannot be reduced to limiting migrants' departures, and on a new model of inclusion created in EU member states specifically through education, skilling, and job opportunities.

In all these matters, member states will need to decide collectively whether they want to be joint leaders or isolated followers. If their choice is to lead, it will become necessary to empower the EU accordingly. This does not mean fast-forwarding to an unrealistic European federation.

Instead, it calls for a new articulation between national policies (horizontal coordination) and between the national and the EU level (vertical coordination). We could label this evolution a 'gradual and pragmatic federalism'.

During the last 15 years, the EU has been hit by a series of exogenous shocks, partly common to the other areas and partly idiosyncratic. The EU has learned the huge cost to be paid for wrong or untimely responses to these shocks.

Reacting to the pandemic and to the fallout from the war and the energy crisis via procyclical fiscal policies and overburdened monetary policies, as in the period 2011–2019, would have been a dramatic mistake.

Instead, the EU adopted a radically new policy mix and several institutional innovations. With the centralisation of the supply of vaccines, the setting up of the NextGenerationEU recovery plan, the coordination of national energy policies, the 'Fit for 55' climate measures, and the joint programmes to support Ukraine, a new EU multilevel governance system has come to the fore.

What has emerged is a complex web of relationships between the member states and the Union. A strong and growing role has been attributed to the European Commission, based on Article 122 of the Treaty which empowers the EU to take exceptional measures under exceptional situations. This has created a bond that even the more Eurosceptic governments cannot disregard.

Its positive aspect is the confirmation that the EU has the willingness and the resources (as well as a fresh ingenuity) to bounce back under extreme stress. The negative aspect is the fragility of an institutional construction that is squeezed between the lack of time, the transient nature of these tasks, and the related search for short-term compromises.

This negative aspect is made evident by the strengthening of uncertainty and instability due to reliance on one-off resources. A less evident but even more important problem is a systematic attempt to build ad hoc processes to replace the lack of legal and institutional competences.

To meet the current and future challenges, the EU will need to equip itself with a combination of a stable regulatory framework and adequate budgetary powers. Long-lasting open work streams such as Banking Union and Capital Markets Union should be brought to a positive conclusion, overcoming the sterile debate on risk sharing versus risk reduction.

Over two decades after the launch of the euro, the goal of achieving Fiscal Union has to be put on the table. Short of that, the EU will not be successful in pursuing its green and digital agendas and will continue to be at the mercy of external events, thus remaining vulnerable domestically and on the global scene.

A gradual and pragmatic federalism should include the following seven elements:

1. A fundamental reform of the EU budget built on a permanent or, at least, recurrent central fiscal capacity to supply European public goods in the triple green, digital, and social transition, backed by credible own resources. Adequate and stable funds will have to be allocated to the reconstruction of Ukraine.

2. New fiscal rules to pursue economic and social convergence within the EU and meet the necessary conditions for long-term economic growth and sustainable public finances.

3. A decisive move towards the construction of integrated and deep European financial markets based on the issuance of a European safe asset and the definition of a fully-fledged crisis management system.

4. An industrial policy fostering the shift to a new EU 'business model' that combines innovative productions, effective services, high-quality education systems and well-trained workers, building on the successes of the SURE programme launched during the pandemic.

5. A revamped state aid policy aimed at strengthening – and not undermining – the Single Market and new European tools to safeguard the EU's role in international value chains. In short, the goal should not be 'made in Europe', but 'made with Europe'.

6. A common education and training strategy as well as concrete programmes for including migrants in EU labour markets, as a fundamental stepping-stone of an EU immigration policy.

7. An EU security and defence policy within NATO, but having sufficient autonomy and visibility, thereby robust to possible renewed isolationist tendencies in the US after the November 2024 elections.

Pursuing this ambitious agenda will require rebuilding trust between EU member states; between national governments, the European Commission, and the European Parliament; and, ultimately, between European institutions and European citizens. In this endeavour, a key role should be played by the 'Erasmus Generation', who are Europe's most effective ambassadors.

Rebuilding trust in the EU would entail the recognition that the winners of yesterday are not the winners of today or tomorrow. In a world of endemic uncertainty and repeated shocks, to avoid zero-sum games, an insurance-based solidarity is needed where support will depend on who suffers more from the shocks.

Mutual trust, two-way solidarity, a permanent central fiscal capacity supplying economic and non-economic European public goods, a new industrial policy buttressing EU strategic autonomy, and the social inclusion of the weaker components of society are the ingredients to gradually build a pragmatic federalism.

The latter cannot be put in place via one-off agreements based on purely intergovernmental arrangements triggered only under extreme circumstances. New and stable EU competences, backed by appropriate resources in the areas mentioned above, are required.

A key tenet of a gradual and pragmatic federalism will be the rethinking of the voting system in the EU Council: to avoid paralysis in the decision-making process, voting needs to be reformed in advance of future EU enlargements.

Let us be aware that there are flexible ways to allow isolated dissent not to become a veto, whilst at the same time protecting the dissenting member from the effects of the decision. Institutional reform should also include the possibility, in well-identified areas where there is a need but not yet the agreement to push forward the integration frontier, to proceed with variable geometry and member states''clubs'.

This Manifesto argues that moving towards a gradual and pragmatic federalism is key for the EU's future at home and abroad. This cannot be done by stealth via a sort of 'permanent article 122' regime. The full implementation of the agenda will require changes in the Treaty, but important steps can also be taken before such a reform.

It cannot be done at once. When clarity on the policy, institutional, and political agenda is reached, national and EU leaders should explain to European citizens why setting up more effective and efficient EU institutions is not an obscure 'Brussels' prerogative, but a decisive development to safeguard the future of our communities, and most notably that of young generations.

The campaign for the forthcoming European Parliament provides this opportunity. It should not be wasted. ■

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This Manifesto can also be found here. Anyone wishing to support the Manifesto, should express her/his interest by writing to Marco Buti and Marcello Messori at: Europe.manifesto2024@gmail.com

Answering the call of history

In her State of the Union address, Ursula von der Leyen outlines the main priorities and flagship initiatives for the year to come, building on the EU's successes and achievements of the past

In just under 300 days, Europeans will take to the polls in our unique and remarkable democracy. As with any election, it will be a time for people to reflect on the State of our Union and the work done by those that represent them. But it will also be a time to decide on what kind of future and what kind of Europe they want.

Among them will be millions of first-time voters, the youngest of whom were born in 2008. As they stand in that polling booth, they will think about what matters to them. They will think about the war that rages at our borders. Or the impact of destructive climate change. About how artificial intelligence will influence their lives. Or of their chances of getting a house or a job in the years ahead.

Our Union today reflects the vision of those who dreamt of a better future after World War II. A future in which a Union of nations, democracies and people would work together to share peace and prosperity. They believed that Europe was the answer to the call of history.

When I speak to the new generation of young people, I see that same vision for a better future. That same burning desire to build something better. That same belief that in a world of uncertainty, Europe once again must answer the call of history. And that is what we must do together.

This starts with earning the trust of Europeans to deal with their aspirations and anxieties. And in the next 300 days we must finish the job that they entrusted us with. I want to thank this House for its leading role in delivering on one of the most ambitious transformations this Union has ever embarked on.

When I stood in front of you in 2019 with my programme for a green, digital and geopolitical Europe I know that some had doubts. And that was before the world turned upside down with a global pandemic and a brutal war on European soil. But look at where Europe is today.

We have seen the birth of a geopolitical Union – supporting Ukraine, standing up to Russia's aggression, responding to an assertive China and investing in partnerships. We now have a European Green Deal as the centrepiece of our economy and unmatched in ambition.

We have set the path for the digital transition and become global pioneers in online rights. We have the historic NextGenerationEU – combining €800 billion of investment and reform – and creating decent jobs for today and tomorrow.

The people of Europe want a Union that stands up for them in a time of great power competition. But also one that protects and stands close to them, as a partner and ally in their daily battles

We have set the building blocks for a Health Union, helping to vaccinate an entire continent – and large parts of the world. We have started making ourselves more independent in critical sectors, like energy, chips or raw materials.

I would also like to thank you for the ground-breaking and pioneering work we did on gender equality. As a woman, this means a lot to me. We have concluded files that many thought would be blocked forever, like the Women on Boards Directive and the historic accession of the EU to the Istanbul Convention.

With the Directive on pay transparency we have cast into law the basic principle that equal work deserves equal pay. There is not a single argument why – for the same type of work – a woman should be paid less than a man.

But our work is far from over and we must continue pushing for progress together. I know this house supports our proposal on combating violence against women. Here too, I would like that we cast into law another basic principle: No, means no. There can be no true equality without freedom from violence.

And thanks to this Parliament, to member states and to my team of Commissioners, we have delivered over 90% of the Political Guidelines I presented in 2019. Together, we have shown that when Europe is bold, it gets things done. And our work is far from over - so let's stand together. Let's deliver today and prepare for tomorrow.

European Green Deal

Four years ago, the European Green Deal was our answer to the call of history. And this summer – the hottest ever on record in Europe – was a stark reminder of that. Greece and Spain were struck by ravaging wildfires – and were hit again only a few weeks later by devastating floods. And we saw the chaos and carnage of extreme weather – from Slovenia to Bulgaria and right across our Union. This is the reality of a boiling planet.

The European Green Deal was born out of this necessity to protect our planet. But it was also designed as an opportunity to preserve our future prosperity. We started this mandate by setting a long-term perspective with the climate law and the 2050 target. We shifted the climate agenda to being an economic one.

This has given a clear sense of direction for investment and innovation. And we have already seen this growth strategy delivering in the short-term. Europe's industry is showing every day that it is ready to power this transition. Proving that modernisation and decarbonisation can go hand in hand.

In the last five years, the number of clean steel factories in the EU has grown from zero to 38. We are now attracting more investment in clean hydrogen than the US and China combined. And tomorrow I will be in Denmark with Prime Minister Mette Frederiksen to see that innovation first hand. We will mark the launch of the first container ship, powered by clean methanol made with solar energy.

This is the strength of Europe's response to climate change. The European Green Deal provides the necessary frame, incentives, and investment – but it is the people, the inventors, the engineers who develop the solutions.
And this is why, as we enter the next phase of the European Green Deal, one thing will never change. We will keep supporting European industry throughout this transition.

We started with a package of measures – from the Net-Zero Industry Act to the Critical Raw Materials Act. With our Industry Strategy, we are looking at the risks and needs of each ecosystem in this transition. We need to finish this work. And with this, we need to develop an approach for each industrial ecosystem.

Therefore, starting from this month, we will hold a series of Clean Transition Dialogues with industry. The core aim will be to support every sector in building its business model for the decarbonisation of industry. Because we believe that this transition is essential for our future competitiveness in Europe.

But this is just as much about the people and their jobs of today. Our wind industry, for instance, is a European success story. But it is currently facing a unique mix of challenges. This is why we will put forward a European Wind Power package – working closely with industry and member states.

We will fast-track permitting even more. We will improve the auction systems across the EU. We will focus on skills, access to finance and stable supply chains. But this is broader than one sector: from wind to steel, from batteries to electric vehicles, our ambition is crystal clear. The future of our clean tech industry has to be made in Europe.

This shows that when it comes to the European Green Deal, we stay the course. We stay ambitious. We stick to our growth strategy. And we will always strive for a fair and just transition! That means a fair outcome for future generations – to live on healthy planet. And a fair journey for all those impacted – with decent jobs and a solemn promise to leave no one behind.

Just think about manufacturing jobs and competitiveness: a topic we are discussing a lot these days. Our industry and tech companies like competition. They know that global competition is good for business. And that it creates and protects good jobs here in Europe. But competition is only true as long as it is fair.

Too often, our companies are excluded from foreign markets or are victims of predatory practices. They are often undercut by competitors benefitting from huge state subsidies. We have not forgotten how China's unfair trade practices affected our solar industry. Many young businesses were pushed out by heavily subsidised Chinese competitors.

Pioneering companies had to file for bankruptcy. Promising talents went searching for fortune abroad. This is why fairness in the global economy is so important – because it affects lives and livelihoods. Entire industries and communities depend on it. So, we have be to be clear-eyed about the risks we face.

Take the electric vehicles sector. It is a crucial industry for the clean economy, with a huge potential for Europe. But global markets are now flooded with cheaper Chinese electric cars. And their price is kept artificially low by huge state subsidies. This is distorting our market.

And as we do not accept this from the inside, we do not accept this from the outside. So I can announce today that the Commission is launching an anti-subsidy investigation into electric vehicles coming from China. Europe is open for competition. Not for a race to the bottom.

We must defend ourselves against unfair practices. But equally, it is vital to keep open lines of communication and dialogue with China. Because there also are topics, where we can and have to cooperate. De-risk, not decouple – this will be my approach with the Chinese leadership at the EU-China Summit later this year.

In the European Union, we are proud of our cultural diversity. We are a 'Europe of the Regions' with a unique blend of languages, music, art, traditions, crafts and cuisines. We are also a continent of unique biological diversity. Some 6,500 species are found only in Europe.

In northern Europe, we find the Wadden Sea, a world natural heritage site and unique habitat offering a home to rare species of flora and fauna and a vital resource for millions of migratory birds. And with the Baltic Sea we have the largest area of brackish sea in the world. South of that is the European Plain, characterised by vast tracts of moorland and wetland.

These regions are important allies against ongoing climate change. Protected moors and wetlands absorb enormous volumes of greenhouse gases, secure regional water cycles and are home to unique biodiversity. And Europe is a continent of forests.

From the mighty coniferous forests of the North and East, via the last remnants of virgin oak and beech forest in central Europe to the cork oak forests of southern Europe: all these forests are an irreplaceable source of goods and services. They absorb carbon dioxide, supply wood and other products, generate fertile soils, and filter the air and the water.

Biodiversity and ecosystem services are vital for all of us in Europe. Loss of nature destroys not only the foundations of our life, but also our feeling of what constitutes home. We must protect it.

At the same time, food security, in harmony with nature, remains an essential task. I would like to take this opportunity to express my appreciation to our farmers, to thank them for providing us with food day after day. For us in Europe, this task of agriculture – producing healthy food – is the foundation of our agricultural policy.

And self-sufficiency in food is also important for us. That is what our farmers provide. It is not always an easy task, as the consequences of Russia's aggression against Ukraine, climate change bringing droughts, forest fires and flooding, and new obligations are all having a growing impact on farmers' work and incomes. We must bear that in mind.

Many are already working towards a more sustainable form of agriculture. We must work together with the men and women in farming to tackle these new challenges. That is the only way to secure the supply of food for the future. We need more dialogue and less polarisation. That is why we want to launch a strategic dialogue on the future of agriculture in the EU. I am and remain convinced that agriculture and protection of the natural world can go hand in hand. We need both.

Economy, social and competitiveness

A fair transition for farmers, families and industry. This is the hallmark of this mandate. And it is all the more important as we face strong economic headwinds. I see three major economic challenges for our industry in the year ahead: labour and skills shortages, inflation, and making business easier for our companies.

The first has to do with our labour market. We have not forgotten the early days of the global pandemic. When everyone predicted a new wave of 1930-style mass unemployment. But we defied this prediction. With SURE – the first-ever European short-time work initiative – we saved 40 million jobs. This is Europe's social market economy in action. And we can be proud of it!

We then immediately restarted our economic engine thanks to NextGenerationEU. And today we see the results. Europe is close to full employment. Instead of millions of people looking for jobs, millions of jobs are looking for people.

Labour and skills shortages are reaching record levels – both here and across all major economies. 74% of SMEs are saying they are facing skill shortages. In the peak of the tourist season, restaurants and bars in Europe are running reduced hours because they cannot find staff. Hospitals are postponing treatment because of lack of nurses.

And two thirds of European companies are looking for IT specialists. At the same time millions of parents – mostly mothers – are struggling to reconcile work and family, because there is no childcare. And 8 million young people are neither in employment, education or training. Their dreams put on hold, their lives on stand-by. This is not only the cause of so much personal distress.

It is also one of the most significant bottlenecks for our competitiveness. Because labour shortages hamper the capacity for innovation, growth and prosperity. So we need to improve access to the labour market. Most importantly for young people, for women. And we need qualified migration.

In addition, we need to respond to the deep-rooted shifts in technology, society and demography. And for that, we should rely on the expertise of businesses and trade unions, our collective bargaining partners.

It is almost forty years since Jacques Delors convened the Val Duchesse meeting that saw the birth of European social dialogue. Since then, social partners have shaped the Union of today – ensuring progress and prosperity for millions.

And as the world around us changes faster than ever, social partners must again be at the heart of our future. Together we must focus on the challenges facing the labour market – from skills and labour shortages, to new challenges stemming from AI.

This is why together with the Belgian Presidency next year, we will convene a new Social Partner Summit once again at Val Duchesse. The future of Europe will be built with and by our social partners. The second major economic challenge: persistent high inflation.

Christine Lagarde and the European Central Bank are working hard to keep inflation under control. We know that returning to the ECB's medium-term target will take some time. The good news is that Europe has started bringing energy prices down.

We have not forgotten, Putin's deliberate use of gas as a weapon and how it triggered fears of blackout and an energy crisis like in the 70s. Many thought, we would not have enough energy to get through the winter. But we made it.

Because we stayed united – pooling our demand and buying energy together. And at the same time, different to the 70s, we used the crisis to massively invest in renewables and fast-track the clean transition. We used Europe's critical mass to bring prices down and secure our supply.

The price for gas in Europe was over €300 per MWh one year ago. It is now around 35. So we need to look at how we can replicate this model of success in other fields like critical raw materials or clean hydrogen.

The third challenge for European companies is about making it easier to do business. Small companies do not have the capacity to cope with complex administration. Or they are held back by lengthy processes. This often means they do less with the time they have – and that they miss out on opportunities to grow.

This is why – before the end of the year – we will appoint an EU SME envoy reporting directly to me. We want to hear directly from small and medium sized businesses, about their everyday challenges. For every new piece of legislation we conduct a competitiveness check by an independent board. And next month, we will make the first legislative proposals towards reducing reporting obligations at the European level by 25%.

Let's be frank – this will not be easy. And we will need your support. Because this is a common endeavour for all European institutions. So we also have to work with Member States, to match the 25% at national level. It is time to make business easier in Europe!

But European companies also need access to key technologies to innovate, develop and manufacture. This is a question of European sovereignty as the Leaders underlined in Versailles. It is an economic and national security imperative to preserve a European edge on critical and emerging technologies.

This European industrial policy also requires common European funding. This is why – as part of our proposal for a review of our budget – we proposed the STEP platform. With STEP we can boost, leverage and steer EU funds to invest in everything from microelectronics to quantum computing and AI. From biotech to clean tech.

Our companies need this support now – so I urge for a quick agreement on our budget proposal. And I know I can count on this House. And there is more when it comes to competitiveness. We have seen real bottlenecks along global supply chains, including because of the deliberate policies of other countries.

Just think about China's export restrictions on gallium and germanium – which are essential for goods like semiconductors and solar panels. This shows why it is so important for Europe to step up on economic security. By de-risking and not decoupling. And I am very proud that this concept has found broad support from key partners.

From Australia to Japan and the United States. And many other countries around the world want to work together. Many are overly dependent on a single supplier for critical minerals. Others – from Latin America to Africa – want to develop local industries for processing and refining, instead of just shipping their resources abroad.

This is why later this year we will convene the first meeting of our new Critical Raw Materials Club. At the same time, we will continue to drive open and fair trade. So far, we have concluded new free trade agreements with Chile, New Zealand and Kenya. We should aim to complete deals with Australia, Mexico and Mercosur by the end of this year. And soon thereafter with India and Indonesia. Smart trade delivers good jobs and prosperity.

These three challenges – labour, inflation and business environment – come at a time when we are also asking industry to lead on the clean transition. So we need to look further ahead and set out how we remain competitive as we do that.

This is why I have asked Mario Draghi – one of Europe's great economic minds – to prepare a report on the future of European competitiveness. Because Europe will do 'whatever it takes' to keep its competitive edge.

Digital & AI

When it comes to making business and life easier, we have seen how important digital technology is. It is telling that we have far overshot the 20% investment target in digital projects of NextGenerationEU. Member states have used that investment to digitise their healthcare, justice system or transport network. At the same time, Europe has led on managing the risks of the digital world.

The internet was born as an instrument for sharing knowledge, opening minds and connecting people. But it has also given rise to serious challenges. Disinformation, spread of harmful content, risks to the privacy of our data.

All of this led to a lack of trust and a breach of fundamental rights of people. In response, Europe has become the global pioneer of citizen's rights in the digital world. The DSA and DMA are creating a safer digital space where fundamental rights are protected. And they are ensuring fairness with clear responsibilities for big tech. This is a historic achievement – and we should be proud of it.

The same should be true for artificial intelligence. It will improve healthcare, boost productivity, address climate change. But we also should not underestimate the very real threats. Hundreds of leading AI developers, academics and experts warned us recently with the following words:

"Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war."

AI is a general technology that is accessible, powerful and adaptable for a vast range of uses - both civilian and military. And it is moving faster than even its developers anticipated. So we have a narrowing window of opportunity to guide this technology responsibly.

I believe Europe, together with partners, should lead the way on a new global framework for AI, built on three pillars: guardrails, governance and guiding innovation.

Firstly, guardrails. Our number one priority is to ensure AI develops in a human-centric, transparent and responsible way. This is why in my Political Guidelines, I committed to setting out a legislative approach in the first 100 days.

We put forward the AI Act – the world's first comprehensive pro-innovation AI law. And I want to thank this House and the Council for the tireless work on this groundbreaking law. Our AI Act is already a blueprint for the whole world. We must now focus on adopting the rules as soon as possible and turn to implementation.

The second pillar is governance. We are now laying the foundations for a single governance system in Europe. But we should also join forces with our partners to ensure a global approach to understanding the impact of AI in our societies.

Think about the invaluable contribution of the IPCC for climate, a global panel that provides the latest science to policymakers. I believe we need a similar body for AI – on the risks and its benefits for humanity. With scientists,

tech companies and independent experts all around the table. This will allow us to develop a fast and globally coordinated response – building on the work done by the Hiroshima Process and others.

The third pillar is guiding innovation in a responsible way. Thanks to our investment in the last years, Europe has now become a leader in supercomputing – with 3 of the 5 most powerful supercomputers in the world. We need to capitalise on this.

This is why I can announce today a new initiative to open up our high-performance computers to AI start-ups to train their models. But this will only be part of our work to guide innovation.

We need an open dialogue with those that develop and deploy AI. It happens in the United States, where seven major tech companies have already agreed to voluntary rules around safety, security and trust. It happens here, where we will work with AI companies, so that they voluntarily commit to the principles of the AI Act before it comes into force. Now we should bring all of this work together towards minimum global standards for safe and ethical use of AI.

Global, migration and security

When I stood here four years ago, I said that if we are united on the inside, nobody will divide us from the outside. And this was the thinking behind the Geopolitical Commission. Our Team Europe approach has enabled us to be more strategic, more assertive and more united. And that is more important than ever.

Our heart bleeds when we see the devastating loss of life in Libya and Morocco after the violent floods and earthquake. Europe will always stand ready to support in any way we can. Or think about the Sahel region, one

of the poorest yet fastest growing demographically. The succession of military coups will make the region more unstable for years ahead.

Russia is both influencing and benefiting from the chaos. And the region has become fertile ground for the rise in terrorism. This is of direct concern for Europe – for our security and prosperity.

So we need to show the same unity of purpose towards Africa as we have shown for Ukraine. We need to focus on cooperation with legitimate governments and regional organisations. And we need to develop a mutually beneficial partnership which focuses on common issues for Europe and Africa.

This is why, together with High Representative Borrell, we will work on a new strategic approach to take forward at the next EU-AU Summit.

History is on the move. Russia is waging a full-scale war against the founding principles of the UN Charter. This has raised immense concerns in countries from Central Asia to the Indo-Pacific. They are worried that in a lawless world, they might face the same fate as Ukraine.

We see a clear attempt by some to return to bloc thinking – trying to isolate and influence countries in between. And it comes at a time when there is a deeper unease by many emerging economies about the way institutions and globalisation work for them. Those concerns are legitimate.

These emerging economies – with their people and natural assets – are essential allies in building a cleaner, safer and more prosperous world. Europe will always work with them to reform and improve the international system. We want to lead efforts to make the rules-based order fairer and make distribution more equal.

This will also mean working with new and old partners to deepen our connections. And Europe's offer with Global Gateway is truly unique. Global Gateway is more transparent, more sustainable, and more economically attractive. Just last week I was in New Delhi to sign the most ambitious project of our generation. The India-Middle East-Europe Economic Corridor.

It will be the most direct connection to date between India, the Arabian Gulf and Europe: With a rail link, that will make trade between India and Europe 40% faster. With an electricity cable and a clean hydrogen pipeline – to foster clean energy trade between Asia, the Middle East and Europe. With a high-speed data cable, to link some of the most innovative digital ecosystems in the world and create business opportunities all along the way.

These are state-of-the-art connections for the world of tomorrow. Faster, shorter, cleaner. And Global Gateway is making the real difference. I have seen it in Latin America, South-East Asia and across Africa – from building a local hydrogen economy with Namibia and Kenya to a digital economy with the Philippines.

These are investments in our partners' economy. And they are investments in Europe's prosperity and security in a fast-changing world.

Every day, we see that conflict, climate change and instability are pushing people to seek refuge elsewhere. I have always had a steadfast conviction that migration needs to be managed. It needs endurance and patient work with key partners. And it needs unity within our Union.

This is the spirit of the New Pact on Migration and Asylum. When we took office, there seemed to be no possible compromise in sight. But with the Pact, we are striking a new balance. Between protecting borders and protecting people. Between sovereignty and solidarity. Between security and humanity.

We listened to all member states and focused on all routes. And we have translated the spirit of the Pact into practical solutions. We were fast and united in responding to the hybrid attack that Belarus launched against us. We worked closely with our Western Balkan partners and reduced irregular flows.

We have signed a partnership with Tunisia that brings mutual benefits beyond migration – from energy and education, to skills and security. And we now want to work on similar agreements with other countries. We stepped up border protection.

European Agencies deepened their cooperation with member states. Allow me to thank in particular Bulgaria and Romania for leading the way – showcasing best practices on both asylum and returns. They have proved it: Bulgaria and Romania are part of our Schengen area. So let us finally bring them in – without any further delay.

Our work on migration is based on the conviction that unity is within our reach. An agreement on the pact has never been so close. Parliament and the Council have a historic opportunity to get it over the line. Let us show that Europe can manage migration effectively and with compassion. Let's get this done!

We know that migration requires constant work. And nowhere is that more vital than in the fight against human smugglers. They attract desperate people with their lies. And put them on deadly routes across the desert, or on boats that are unfit for the sea. The way these smugglers operate is continuously evolving.

But our legislation is over twenty years old and needs an urgent update. So we need new legislation and a new governance structure. We need stronger law enforcement, prosecution and a more prominent role for our agencies – Europol, Eurojust and Frontex. And we need to work with our partners to tackle this global plague of human trafficking.

This is why the Commission will organise an International Conference on fighting people smuggling. It is time to put an end to this callous and criminal business!

Ukraine

On the day when Russian tanks crossed the border into Ukraine, a young Ukrainian mother set off for Prague to bring her child to safety. When the Czech border official stamped her passport, she started crying. Her son didn't understand. And he asked his mother why she was crying. She answered: *"Because we are home."*

"But this is not Ukraine," he argued. So she explained: *"This is Europe."* On that day, that Ukrainian mother, felt that Europe was her home. Because 'home is where we trust each other'. And the people of Ukraine could trust their fellow Europeans.

Her name was Victoria Amelina. She was one of the great young writers of her generation and a tireless activist for justice. Once her son was safe, Victoria returned to Ukraine to document Russia's war crimes. One year later she was killed by a Russian ballistic missile, while having dinner with colleagues. The victim of a Russian war crime, one of countless attacks against innocent civilians.

Amelina was with three friends that day – including Héctor Abad Faciolince, a fellow writer from Colombia. He is part of a campaign called 'Aguanta, Ucrania' – 'Resist, Ukraine', created to tell Latin Americans of Russia's war of aggression and attacks on civilians. But Héctor could never imagine becoming the target himself. Afterwards, he said he didn't know why he lived and she died.

But now he is telling the world about Victoria. To save her memory and to end this war. And I am honoured that Héctor is here with us today. And I want you to know that we will keep the memory of Victoria – and all other victims – alive. Aguanta, Ucrania. Slava Ukraini!

We will be at Ukraine's side every step of the way. For as long as it takes. Since the start of the war, four million Ukrainians have found refuge in our Union. And I want to say to them that they are as welcome now as they were in those fateful first weeks. We have ensured that they have access to housing, healthcare, the job market and much more.

This was Europe answering the call of history. And so I am proud to announce that the Commission will propose to extend our temporary protection to Ukrainians in the EU. Our support to Ukraine will endure.

We have provided €12 billion this year alone to help pay wages and pensions. To help keep hospitals, schools and other services running. And through our ASAP proposal we are ramping up ammunition production to help match Ukraine's immediate needs. But we are also looking further ahead.

This is why we have proposed an additional €50 billion over four years for investment and reforms. This will help build Ukraine's future to rebuild a modern and prosperous country. And that future is clear to see.

This House has said it out loud: the future of Ukraine is in our Union. The future of the Western Balkans is in our Union. The future of Moldova is in our Union. And I know just how important the EU perspective is for so many people in Georgia.

I started by speaking of Europe responding to the call of history. And history is now calling us to work on completing our Union. In a world where some are trying to pick off countries one by one, we cannot afford to leave our fellow Europeans behind. In a world where size and weight matters, it is clearly in Europe's strategic and security interests to complete our Union. But beyond the politics and geopolitics of it, we need to picture what is at stake. We need to set out a vision for a successful enlargement.

A Union complete with over 500 million people living in a free, democratic and prosperous Union. A Union complete with young people who can live, study and work in freedom. A Union complete with vibrant democracies in which judiciaries are independent, oppositions are respected, and journalists are protected.

Because the rule of law and fundamental rights will always be the foundation of our Union – in current and in future member states. This is why the Commission has made the Rule of Law Reports a key priority.

We now work closely with member states to identify progress and concerns – and make recommendations for the year ahead. This has ensured accountability in front of this House and national parliaments. It has allowed for dialogue between member states. And it is delivering results.

I believe that it can do the same for future member states. This is why I am very happy to announce that we will open the Rule of Law Reports to those accession countries who get up to speed even faster. This will place them on an equal footing with member states. And support them in their reform efforts. And it will help ensure that our future is a Union of freedom, rights and values for all.

This is in our shared interest. Think about the great enlargement of 20 years ago. We called it the European Day of Welcomes. And it was a triumph of determination and hope over the burdens of the past. And in the 20 years since we have seen an economic success story which has improved the lives of millions.

I want us to look forward to the next European Day of Welcomes and the next economic success stories. We know this is not an easy road. Accession is merit-based – and the Commission will always defend this principle. It takes hard work and leadership.

But there is already a lot of progress. We have seen the great strides Ukraine has already made since we granted them candidate status. And we have seen the determination of other candidate countries to reform.

It is now time for us to match that determination. And that means thinking about how we get ready for a completed Union. We need to move past old, binary debates about enlargement. This is not a question of deepening integration or widening the Union. We can and we must do both.

To give us the geopolitical weight and the capacity to act. This is what our Union has always done. Each wave of enlargement came with a political deepening. We went from coal and steel towards full economic integration. And after the fall of the Iron Curtain, we turned an economic project into a true Union of people and states.

I believe that the next enlargement must also be a catalyst for progress. We have started to build a Health Union at 27. And I believe we can finish it at 30+. We have started to build European Defence Union at 27. And I believe we can finish it at 30+.

We have proven that we can be a Geopolitical Union and showed we can move fast when we are united. And I believe that Team Europe also works at 30+.

I know this House believes the same. And the European Parliament has always been one of the main drivers of European integration. It has been so throughout the decades. And it is once again today. And I will always support this House – and all of those who want to reform the EU to make it work better for citizens.

And, yes, that means including through a European Convention and Treaty change if and where it is needed! But we cannot – and we should not – wait for Treaty change to move ahead with enlargement.

A Union fit for enlargement can be achieved faster. That means answering practical questions about how a Union of over 30 countries will work in practice. And in particular about our capacity to act.

The good news is that with every enlargement those who said it would make us less efficient were proven wrong. Take the last few years.

We agreed on NextGenerationEU at 27. We agreed to buy vaccines at 27. We agreed on sanctions in record time – also at 27. We agreed to purchase natural gas – not only at 27 but including Ukraine, Moldova and Serbia.

So it can be done. But we need to look closer at each policy and see how they would be affected by a larger Union. This is why the Commission will start working on a series of pre-enlargement policy reviews to see how each area may need to be adapted to a larger Union.

We will need to think about how our institutions would work – how the Parliament and the Commission would look. We need to discuss the future of our budget – in terms of what it finances, how it finances it, and how it is financed.

And we need to understand how to ensure credible security commitments in a world where deterrence matters more than ever. These are questions we must address today if we want to be ready for tomorrow. And the Commission will play its part. This is why we will put forward our ideas to the Leaders' discussion under the Belgian Presidency.

We will be driven by the belief that completing our Union is the best investment in peace, security and prosperity for our Continent. So it is time for Europe to once again think big and write our own destiny!

Conclusion

Victoria Amelina believed that it is our collective duty to write a new story for Europe. This is where Europe stands today. At a time and place where history is written. The future of our continent depends on the choices we make today. On the steps we take to complete our Union.

The people of Europe want a Union that stands up for them in a time of great power competition. But also one that protects and stands close to them, as a partner and ally in their daily battles. And we will listen to their voice.

If it matters to Europeans, it matters to Europe. Think again about the vision and imagination of the young generation I started my speech with. It is the moment to show them that we can build a continent where you can be who you are, love who you want, and aim as high as you want.

A continent reconciled with nature and leading the way on new technologies. A continent that is united in freedom and peace. Once again – this is Europe's moment to answer the call of history. Long live Europe. ■

Ursula von der Leyen is President of the European Commission

This article is based on the 2023 State of the Union Address by President von der Leyen, Strasbourg, 13 September 2023.

Strengthening resilience in a changing geopolitical landscape

A series of shocks have dramatically changed the global landscape. Christine Lagarde argues that the CESEE economies have the resilience to flourish

The CESEE region – which comprises 21 different economies[1] – can overall be considered a European success story in recent decades, having enjoyed rapid convergence towards higher-income countries. Between 2000 and 2021, the economic size of the region almost doubled to 40% of the euro area aggregate[2].

And this strong growth has led to rising living standards, with average GDP per capita jumping from 36% to 54% of the euro area aggregate in the same period[3].

But the world has changed dramatically since we last held this conference in 2019. A series of shocks have upended our old reality and replaced it with new uncertainties.

Devastatingly, one of those shocks has been the outbreak of war in Europe – an event that we once thought consigned to the history books. Russia's unjustified war against Ukraine and its people is a human tragedy. And it has had deep economic consequences for the CESEE region in particular.

In parallel, the world is changing in ways which make the growth models of many CESEE countries more vulnerable, as these models generally involve high levels of trade openness and integration into global value chains.

But as Graham Greene once wrote, a *"feat of daring can alter the whole conception of what is possible."* And the challenge now facing the CESEE region is how to continue its convergence story and ensure that growth remains resilient in this new landscape.

Fortunately, CESEE economies can already look back on a strong history of resilience – be it mastering the transition from central planning to market economies in the 1990s or recovering from the global financial crisis with impressive speed. I therefore have every confidence that they will be able to adapt to these new uncertainties.

A changing geopolitical landscape

There are two broad shifts reshaping the global economy that may have profound implications for the CESEE region: rising geopolitical tensions and weakening global trade.

After a long period in which the United States was the sole superpower, the world is becoming more multipolar, with greater competition between major powers, less respect for international rules and norms and a waning influence for multilateral institutions.

The prospects for the CESEE region are encouraging. There are clear structural strengths that stand to benefit CESEE economies in the medium to long run, such as well-educated workforces and strong ties with Europe

In this environment, even deep commercial ties may be insufficient to prevent trading relationships from becoming adversarial. This makes the global environment increasingly prone to shocks and the task of macroeconomic stabilisation for all countries much harder.

Unfortunately, the CESEE economies know this all too well. Russia's war against Ukraine triggered a massive shock to the global economy – especially to energy and food markets – and CESEE economies have been particularly exposed, given their geographic proximity to the conflict.

While inflation has now started to come down, over two-thirds of economies in the CESEE region saw annual inflation hit 13% or above last year, with several countries seeing markedly higher price increases. By comparison, annual inflation in the euro area was 8.4%.

Geopolitical tensions risk accelerating the second shift in the global landscape: weakening global trade. Since the global financial crisis, trade growth as a share of world GDP has plateaued[4]. And we are also seeing rising levels of protectionism as countries reconfigure their supply chains to align with new strategic goals. Over the last decade, the number of trade restrictions in place has increased tenfold[5].

The CESEE region, and Europe more generally, may be vulnerable to such a shift. Last year, trade as a share of GDP was higher than the euro area average for two-thirds of CESEE economies. And while other major economies, such as the United States, have seen trade as a share of GDP fall since the pandemic, in the euro area it reached a record high in 2022[6].

A new foundation for strengthening resilience

A changing geopolitical landscape means that, in the euro area and the CESEE region, we need to build a new

foundation for strengthening resilience. This foundation rests on further deepening the European Union and its ties to the surrounding region. I see three key elements.

The first is reinforcing openness within our region. Trade fragmentation could see the flow of goods and services increasingly being pulled towards different trade blocs, at the expense of countries outside those blocs. By leveraging our regional strength, Europe and the CESEE region can recreate some of the benefits of globalisation on a smaller scale.

The euro area is already the main trading partner for most CESEE economies. And we can capitalise on this existing momentum. Between the year 2000 and last year, the share of euro area imports from the CESEE region increased from 5% to 10%[7]. And the share of euro area exports to CESEE economies reached 11% last year, almost double that at the start of the millennium[8].

Moreover, CESEE economies in particular can benefit from changing global trade patterns as companies seek suppliers closer to home. Survey evidence shows that firms in the CESEE region, and especially those based in the EU, are seen as highly reliable trading partners[9].

The ECB also has a key role to play here as the guardian of the euro. Our monetary policy plays an important anchoring role for the CESEE region, as the euro is widely used in trade invoicing and financing. Euro cash also serves as an important store of value – demand for it surged in CESEE economies following Russia's invasion of Ukraine[10].

The second key element is increasing our collective security. Europe and the CESEE economies have already taken substantial steps to increase their energy security, given the dangerous historical reliance on Russian fossil fuels in their energy mix.

In February 2022, the EU was importing around 36% of its natural gas from Russia. Within the space of nine months, that fell sharply to 13% as the EU reduced its gas consumption and diversified towards imports of liquified natural gas[11].

Most, though not all, CESEE economies have also made significant progress in substituting energy imports away from Russia and in building up gas storage levels.

But we cannot stop there. We need to accelerate our efforts to decarbonise and increase our energy independence. That is why initiatives that help to build renewable energy sources are so important – such as Next Generation EU and the EU's recent energy support package for countries in the Western Balkans[12].

The third key element is defending and spreading our common values. The attack on Ukraine was also an assault on European values – such as the respect for international law and human rights.

That is why Europe has imposed unprecedented sanctions on Russia and provided substantial support to Ukraine following the invasion. To date, the EU has made available €38.3 billion in economic assistance and over €21 billion in military support[13].

The strength of the EU's response demonstrates not only its capacity for action, but also its appeal as a political project that others see the benefit of joining – what the West German Chancellor Konrad Adenauer once described as the 'Magnet Europa' effect[14].

The push for EU enlargement has recently gathered momentum as a consequence of Russia's war. Last year, the EU granted Ukraine, Moldova and Bosnia and Herzegovina candidate status[15]. And it launched the process to open

accession negotiations with Albania and North Macedonia, while also becoming open to granting Georgia the status of candidate country, conditional on reforms[16].

Conclusion

A series of shocks have dramatically changed the global landscape in recent years. And today, rising geopolitical tensions and weakening global trade mean that economies in the CESEE region need to build a new foundation of resilience.

But the record of past crises has already demonstrated just how resilient CESEE countries can be. Despite an exceptionally difficult 2022, the prospects for the CESEE region are encouraging. There are clear structural strengths that stand to benefit CESEE economies in the medium to long run, such as well-educated workforces and strong ties with Europe.

So the task at hand is how to channel that spirit of resilience to counteract these new uncertainties. And by leveraging our regional strength and further deepening our economic and political ties, I have no doubt that Europe and the economies in the CESEE region can flourish together. ■

Christine Lagarde is President of the European Central Bank

Endnotes

1. The CESEE region is defined here as Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kosovo (this designation is without prejudice to positions on status and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence), Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia, Türkiye and Ukraine.

2. Measured by taking the sum of real GDP in 2017 international dollars of all CESEE economies, excluding the six euro area countries in the region.

3. Measured in terms of purchasing power parity, excluding the six euro area countries in the region.

4. Shin, HS (2023), "Global value chains under the shadow of Covid", presentation at Columbia University CFM-PER Alternative Data Initiative virtual seminar, 16 February.

5. Comparison between 2012 and 2022. Specifically, trade restrictions across goods, investment, and services. The data cited relate to exports only. See Georgieva, K (2023), "Confronting fragmentation where it matters most: trade, debt, and climate action", IMF Blog, 16 January.

6. World Bank (2023), "Trade (% of GDP) - Euro area" and "Trade (% of GDP) - United States".

7. The CESEE region excluding the six euro area countries.

8. The CESEE region excluding the six euro area countries.

9. European Bank for Reconstruction and Development (2022), "Chapter 3: Global supply chains in turbulence", EBRD Transition Report 2022-23.

10. Beckmann, E and Zamora-Pérez, A (2023), "The impact of war: extreme demand for euro cash in the wake of Russia's invasion of Ukraine", The international role of the euro, ECB, June.

11. European Council (2023), "Infographic - Where does the EU's gas come from?", 7 February.

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14. Garton Ash, T (2023), Homelands: a personal history of Europe, Yale University Press.
15. See European Council (2022), "European Council meeting conclusions", 23 and 24 June; and European Council (2022), "European Council meeting conclusions", 15 December
16. Council of the European Union (2022), "Enlargement - Council conclusions on North Macedonia and Albania", 18 July; Delegation of the European Union to Georgia (2022), "The European Perspective for Georgia", 20 September.

This article is based on a welcome address given at the 9th ECB conference on Central, Eastern and South-Eastern European Countries, Frankfurt am Main, 17 July 2023.

The Russian war economy: macroeconomic performance

The Russian economy has performed better than many expected since the war in Ukraine started. Marek Dabrowski argues that the financial burden will be felt for some time

When Russia started its full-scale invasion of Ukraine on 24 February 2022, the United States, European Union, several other G7 economies and their allies responded with an unprecedented package of economic, financial, diplomatic and other sanctions, which were continuously amended in the subsequent months[1].

Many expected that the economic price for Russia of the aggression and sanctions would be immediate and painful[2]. The European Bank for Reconstruction and Development in March 2022 (EBRD, 2022) forecasted a real GDP decline of 10 percent in 2022, while the International Monetary Fund in April 2022 (IMF, 2022) projected a decrease of 8.5 percent.

Also, according to the IMF (2022), Russia's inflation would amount to 24 percent in December 2022 and the unemployment rate to 9.3 percent of the total labour force. Even the Bank of Russia at the end of April 2022 expected a real GDP decline of 8-10 percent in 2022[3].

But the actual figures for 2022 were better (Table 1). According to the IMF, Russia's real GDP declined by 2.1 percent in 2022. The Federal State Statistics Service (Rosstat) agreed[4]. The largest GDP decline was recorded in the second quarter of 2022, by 4.5 percent compared to the second quarter of 2021[5]. In the subsequent quarters, GDP has recovered slowly but steadily.

There were no significant changes in the sectoral structure of gross value added compared to 2021, except for mineral production, the share of which increased from 13.1 percent in 2021 to 14 percent in 2022.

The volume of goods and services exports decreased by 8.7 percent year-on-year, while imports diminished even more (by 15 percent y/y). A smaller decline in GDP means the Russian economy became more closed to the external world.

Table 1. Russia: selected macroeconomic indicators, 2018-2023

Item	2018	2019	2020	2021	2022	2023
GDP, constant prices, % change	2.80	2.20	-2.70	5.60	-2.10	0.70
Total investment, % of GDP	21.90	22.70	23.50	23.20	22.70	23.20
Gross national savings, % of GDP	28.90	26.50	25.80	29.90	33.00	26.90
Unemployment rate, % of total labour force	4.80	4.60	5.80	4.80	3.90	3.60
Inflation, end of period, CPI, %	4.30	3.00	4.90	8.40	12.40	6.30
GG revenue, % of GDP	35.50	35.70	35.20	35.60	34.30	31.20
GG total expenditure, % of GDP	32.60	33.80	39.20	34.80	36.60	37.40
GG net lending/borrowing, % of GDP	2.90	1.90	-4.00	0.80	-2.20	-6.20
GG gross debt, % of GDP	13.60	13.70	19.20	16.50	19.60	24.90
Volume of imports of goods and services, % change	2.70	2.80	-11.80	16.70	-15.00	8.30
Volume of exports of goods and services, % change	5.10	-3.30	-4.40	0.60	-8.70	0.20
Current account balance, USD billion	115.70	65.70	35.40	122.30	227.40	75.10
Current account balance, % of GDP	7.00	3.90	2.40	6.70	10.30	3.60

Note: Red font indicates IMF staff estimates and forecasts.
Source: IMF World Economic Outlook database, April 2023.

The unemployment rate reached the lowest level in the post-Soviet era, 3.9 percent (Table 1). Mobilisation of more than 300,000 men to the army from September 2022, and emigration of 300,000-600,000 people in 2022, led to a reduction in the labour force of 1.0-1.5 percent year-on-year (Abramov *et al* 2023). As a result, the labour market situation became more tense for employers.

While the economic burden of the war and decoupling with the EU and other advanced economies will harm the growth prospects of the Russian economy in the medium-to-long term, they have not been lethal yet

The real disposable money income of the population in 2022 decreased by 1 percent compared to 2021, ie. less than during the previous crisis episodes (2008-2009, 2014-2015, 2020).

Better-than-expected results in 2022 can be attributed to several factors including conservative monetary and fiscal policies before February 2022 (Dabrowski, 2023), a well-calibrated monetary and fiscal policy reaction to the new situation, high global hydrocarbon prices and late and incomplete geographical adoption of oil sanctions.

Macroeconomic management

The beginning of the aggression against Ukraine and the first wave of financial sanctions which immobilised approximately half of Russia's international reserves (around $300 billion) and which cut off part of the Russian banking sector from the SWIFT[6], generated a mass capital outflow.

The ruble plummeted to the lowest level in its history (120 RUB for $1) on 11 March 2022 (Figure 1). The Russian government and the Bank of Russia introduced capital and current account transaction restrictions to stop the panic (Astrov *et al* 2022). Simultaneously, the Bank of Russia hiked its key policy interest rate to 20 percent (Figure 2).

These measures helped to stabilise the situation in the forex market. The official exchange rate of the ruble recovered very quickly (Figure 1) to 51 rubles to the dollar at the end of June 2022. The market exchange rate also strengthened, although it was less favourable than the official rate because of convertibility restrictions.

Quick stabilisation of the ruble allowed for the arresting of the potential inflationary impact of exchange-rate depreciation. According to IMF estimates, annual inflation increased to 12.4 percent in December 2023 (Table 1).

Looking at the monthly figures of the Bank of Russia (which differ from the IMF estimates), 12-month inflation peaked at 17.8 percent in April 2022 (as a result of the ruble depreciation in February and March 2022)[7]. Then it decreased gradually to 11.9 percent in December 2022 and a record-low level of 2.3 percent in April 2023.

The stabilisation of exchange rates also allowed for a gradual decrease in the Bank of Russia's interest rate (Figure 2) and a relaxation of convertibility restrictions, especially for Russian residents and non-residents of the so-called friendly countries (those that have not adopted sanctions against Russia).

However, convertibility restrictions did not stop capital outflows in 2022. Although the Bank of Russia has discontinued publication of net private capital flows statistics, some trends can be deduced from the available balance-of-payments statistics[8]. The net capital outflow in 2022 amounted to $230.3 billion, of which $26.9 billion can be attributed to direct investment, $23.2 billion to portfolio investment, and $190.9 to other investments (but 72.6 percent of this amount left Russia in the first half of 2022).

A negative capital account balance was also indirectly confirmed by the decreasing international reserves of the Bank of Russia (Figure 3).

Hydrocarbon boom and its macroeconomic consequences

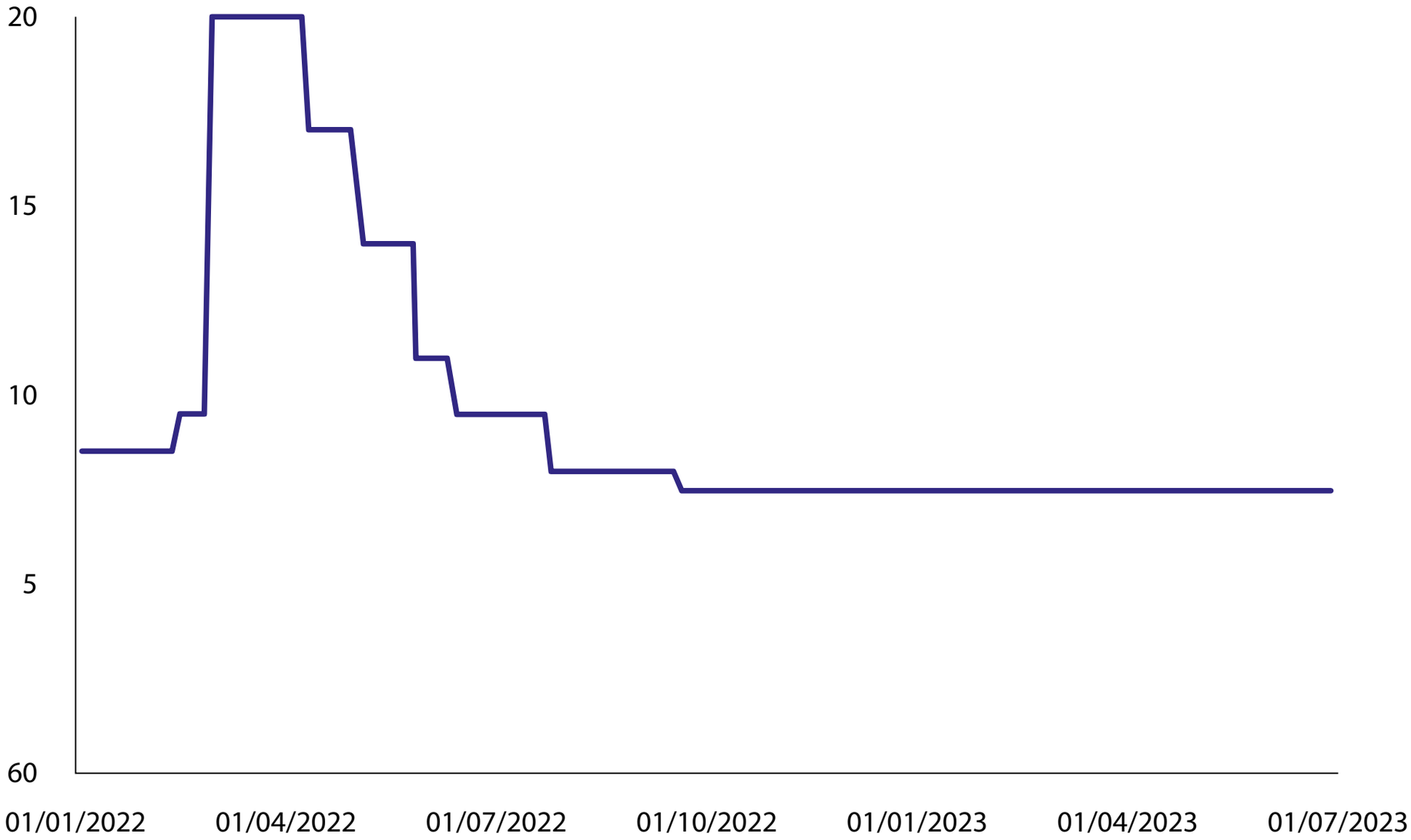
Another factor contributing to better-than-expected results in 2022 was high hydrocarbon prices. Oil prices have increased since April 2020, when they reached their COVID-19-related bottom (below $20 per barrel). In June 2021, they crossed $60 per barrel.

The post-pandemic global recovery and overheating of the world economy pushed oil prices further up. The Russian invasion of Ukraine added to this trend due to a higher perception of security risks and expectations of the

Figure 1. Exchange rate set by the Bank of Russia, RUB/1 USD, 01.01.2022 – 28.06.2023

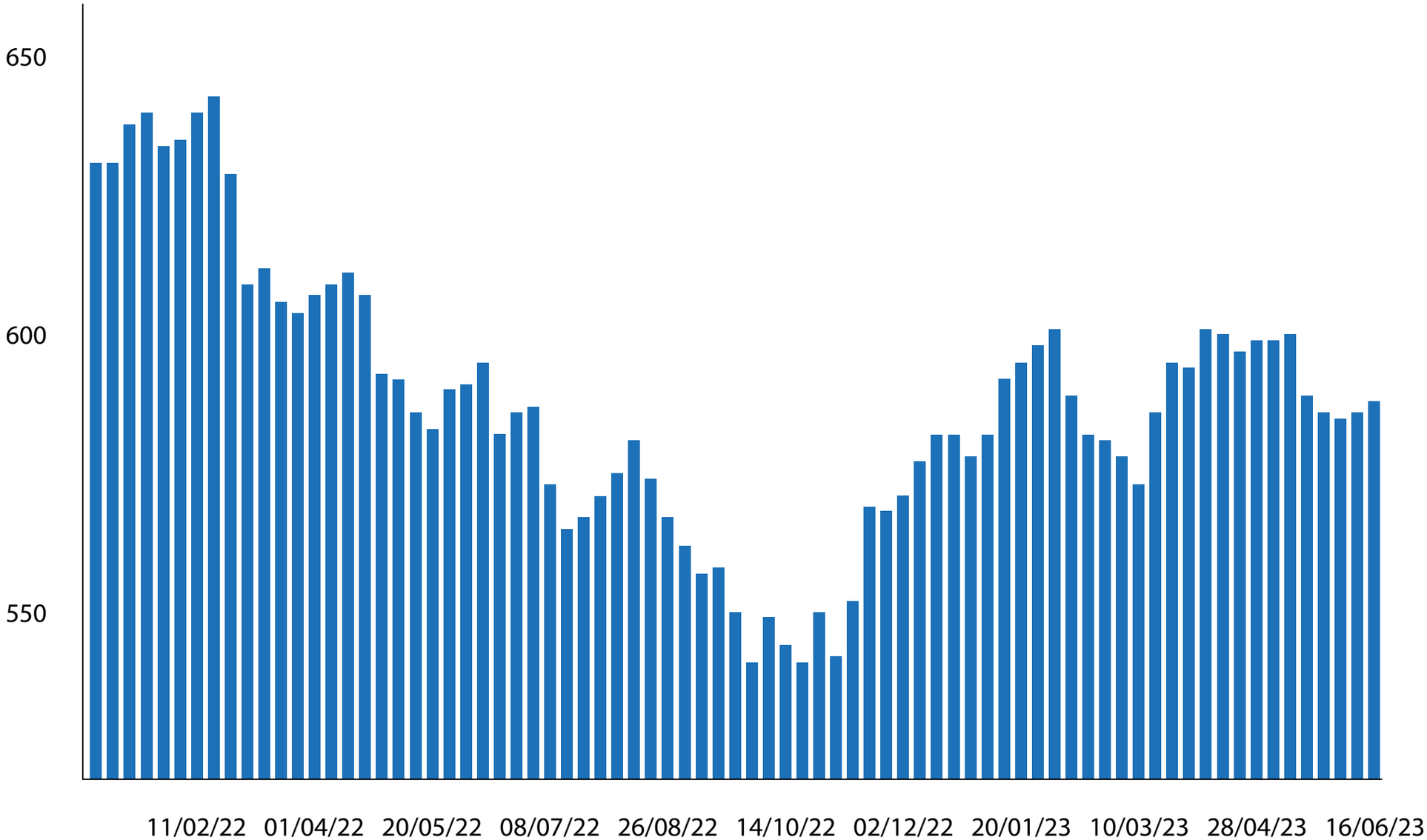
Source: Bank of Russia.

Figure 2: Key policy interest rate of the Bank of Russia, in %, 01.01.2022 – 28.06.2023



Source: Bank of Russia.

Figure 3. Bank of Russia's international reserves, USD billion, 31.12.2021 – 16.06.2023



Source: Bank of Russia.

Western sanctions against Russia. Unsurprisingly, Brent oil prices peaked on 28 February 2022 (over $110 per barrel) and again (close to $120) on 8 June 2022.

Russia benefited from this situation. The record high current account surplus in 2022 (Table 1), particularly in the year's first half, resulted primarily from favourable oil prices. Drastic import reductions (see above) also had an impact, partly neutralising the negative effect of freezing half of the Russian international reserves.

The increase in natural gas prices, another essential Russian export item, was even more rapid (Figure 5). However, Russia drastically reduced the volume of exported natural gas to the EU as a retaliatory measure for its support to Ukraine[9].

The attempts to redirect natural gas exports to Asia brought only partial results because of the limited capacity of gas pipelines and LNG exports. Therefore, it was a self-inflicted wound caused by Russia's counter-sanctions policy.

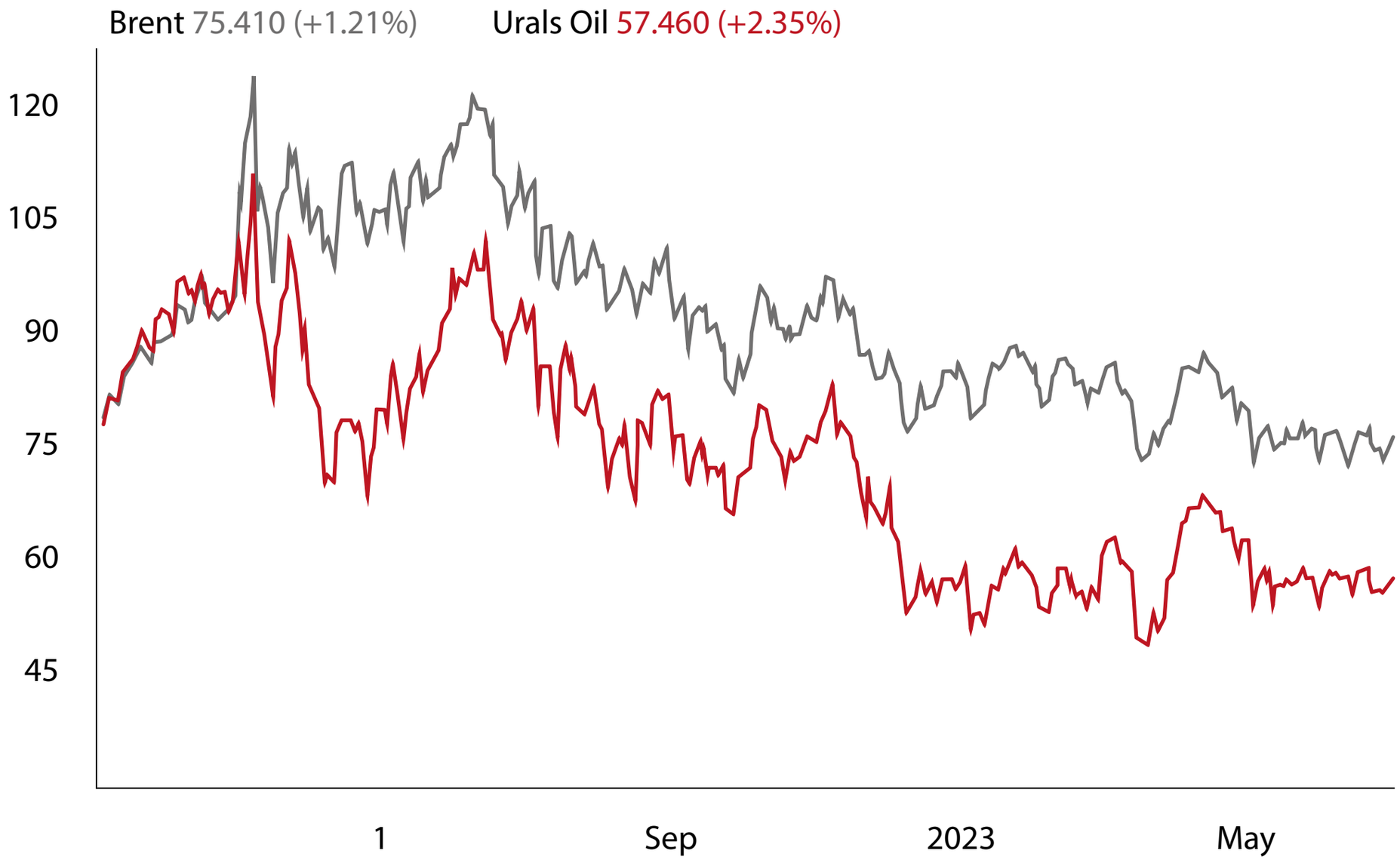
Late and incomplete sanctions

Macroeconomically, the most critical sanctions against Russia concerned its access to the global oil market. The United States banned imports of Russian oil immediately after the beginning of the Russian aggression.

However, this ban had a limited economic impact due to the small volumes of Russian crude imported by the US. The EU, a much bigger importer, banned imports of Russian crude oil transported by sea routes only from 5 December 2022, and refined oil products from 5 February 2023.

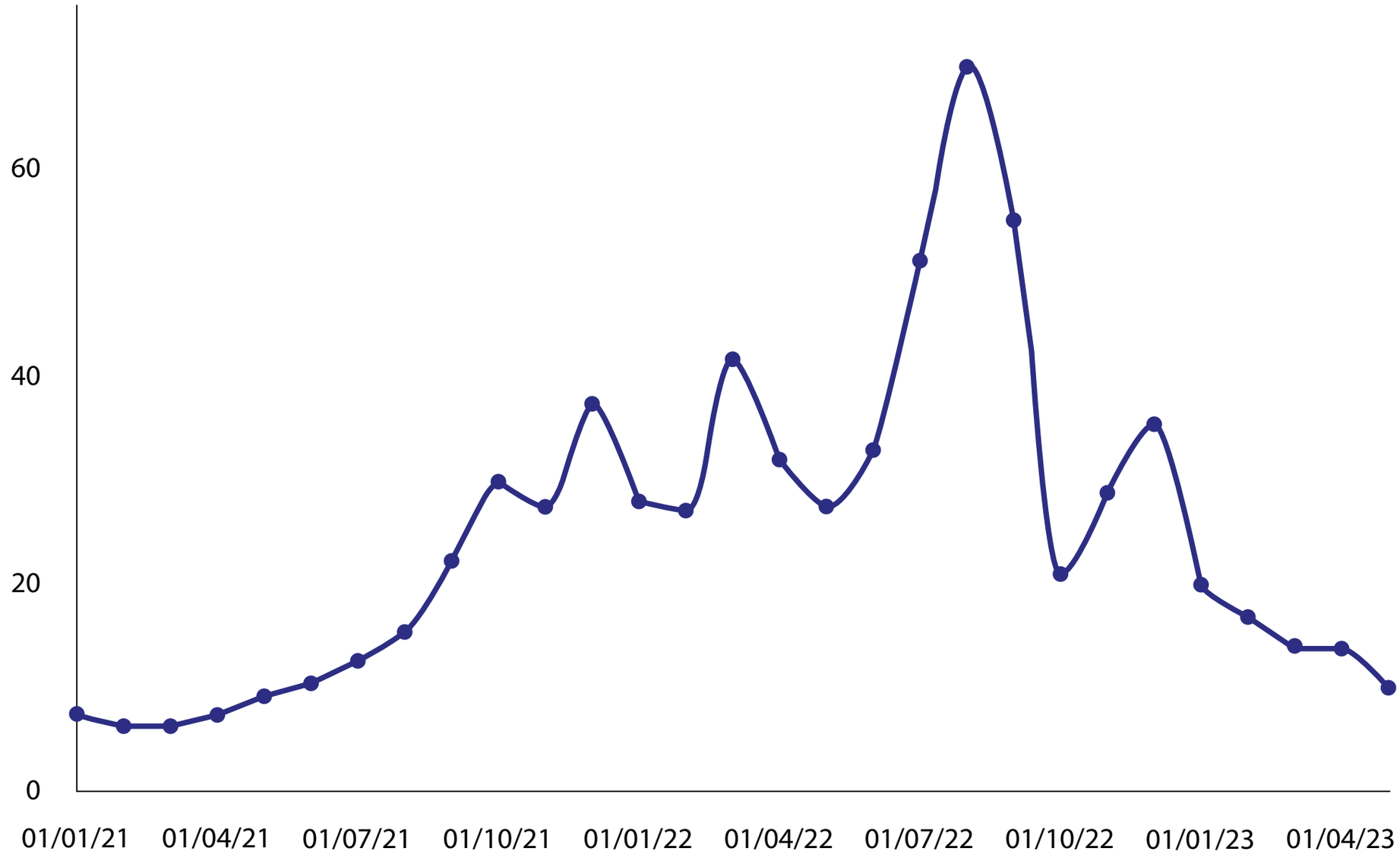
Furthermore, several large emerging-market economies (for example, China, India, Indonesia, Turkey, Brazil and South Africa) did not join Western sanctions against Russia at all, including sanctions related to oil imports. Therefore, Russia can easily circumvent oil sanctions by just redirection of oil export destinations.

Figure 4. Brent and Urals oil prices, in $ per barrel, 01 January 2022 to 30 June 2023



Source: Trading Economics.

Figure 5. Global price of natural gas, EU, USD per million metric British Thermal Unit, monthly, not seasonally adjusted



Source: IMF Primary Commodity Prices, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/PNGASEUUSDM, 2 July 2023.

The OPEC+ cartel and its leader Saudi Arabia were reluctant to expand oil-export quotas during the highest oil prices and cut them when global oil prices started declining.

Despite the geographical incomplete nature of sanctions and their late introduction, there has been a discount in the range of $15 to $30 per barrel for the Urals oil price (as compared to Brent), a phenomenon not observed before the full-scale war started. It limited the balance-of-payments surplus and federal budget proceeds from the oil exports. However, this discount has diminished since May 2023, which can suggest erosion of sanctions.

A more difficult 2023

Russia's surprisingly good macroeconomic situation in 2022 has started to deteriorate in 2023, especially on the fiscal front. While in 2022 general government deficit (net borrowing) amounted to a moderate 2.2 percent of GDP, in 2023, it may amount to 6.2 percent of GDP (Table 1).

Russian finance ministry preliminary fiscal data for the first half of 2023[10] confirms a deteriorating trend driven by declining global oil and natural gas prices and increasing costs of the war. Compared to the same period in 2022, federal budget revenue decreased by 11.7 percent.

Hydrocarbon revenue declined by 47 percent, while non-hydrocarbon revenue increased by 17.8 percent. Federal expenditure increased by 19.5 percent, of which state procurement (which most likely includes purchases of military hardware and other army supplies) increased by 50.6 percent.

Still, Russia has relatively low public debt (Table 1), but its access to the international debt market has been closed by sanctions. The two remaining sources of deficit financing are the National Welfare Fund (NFW), which cumulated part of oil- and gas-related revenue in the surplus years along with Treasury bonds purchased mainly by state-

owned banks. On 1 June 2023, the total NFW assets amounted to $153 billion (8.2 percent of the forecasted GDP in 2023)[11].

However, the liquid assets were slightly more than half of this amount. Part of the NWF assets was immobilised due to Western sanctions (together with the Bank of Russia's international reserves); another part was invested earlier in the shares of Russian companies such as Sberbank and Aeroflot. Most of the liquid assets are held now in Chinese yuan and gold.

Deteriorating terms of trade are also seen in the balance of payments statistics. While a current account balance remains positive, its surplus is much smaller than in 2022 (Table 1).

It has impacted the ruble's exchange rate, which has depreciated since October 2022 (Figure 1). At the beginning of July 2023, it exceeded 90 ruble to the dollar. A weaker ruble may boost inflation from the current low level.

The short-term prospects (the next 12 months) for the federal budget and balance of payments will depend on oil prices that Russian exporters can effectively obtain in the international (mainly Asian) markets.

Conclusions

While the economic burden of the war and decoupling with the EU and other advanced economies will harm the growth prospects of the Russian economy in the medium-to-long term (Ribakova, 2023), adding to other negative factors including shrinking population and its ageing, the poor business climate and increasing government interventionism, they have not been lethal yet.

Russia has avoided macroeconomic and financial destabilisation, minimised output losses and retained resources to continue its aggression against Ukraine.

Better-than-expected macroeconomic performance in 2022 and the first half of 2023 can be attributed to the situation on the global hydrocarbon market, favourable macroeconomic performance before the war, well-calibrated macroeconomic policy and regulatory response to sanctions, and the geographical incompleteness of those sanctions.

Russia also took several preparatory steps ahead of the confrontation with the West in 2014-2022, including building an independent payment system, import substitution, developing trade relations with China and conducting conservative macroeconomic policies (Dabrowski and Avdasheva, 2023) that increased the resilience of the Russian economy to Western sanctions.

On the other hand, Russian counter-sanctions against 'unfriendly' countries, especially those stopping natural gas exports to Europe, were self-damaging while missing their geopolitical goal of weaken the support for Ukraine provided by the EU and G7 countries. ■

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Endnotes

1. For a summary see Richard Martin, 'Sanctions against Russia – a timeline', S&P Global Market Intelligence, 5 July 2023.

2. See for example Brian O'Toole, Daniel Fried and Edward Fishman, 'For Biden, wreaking havoc on Russia's economy is the least bad option', New Atlanticist, 8 February 2022.

3. See http://www.cbr.ru/collection/collection/file/40964/forecast_220429.pdf

4. See https://rosstat.gov.ru/storage/mediabank/VVP_god_s_1995-2022.xls. We use data published by Rosstat, Bank of Russia, Russia's finance ministry and the IMF, along with independent estimates. So far, official Russian statistics, although less detailed than those before February 2022, remains broadly in line with independent and external estimates. Instances of data discrepancy or information gaps are noted in the text.

5. See https://rosstat.gov.ru/storage/mediabank/VDS_kvartal_OKVED2_s2011.xlsx

6. Véron and Kirschenbaum (2022). In the subsequent sanction packages, the number of sanctioned banks increased.

7. See http://www.cbr.ru/hd_base/infl/

8. See http://www.cbr.ru/vfs/eng/statistics/credit_statistics/bop/bal_of_payments_ap_e.xlsx

9. See the Bruegel European natural gas imports tracker.

10. See (in Russian) https://minfin.gov.ru/ru/press-center/?id_4=38583-predvaritelnaya_otsenka_ispolneniya_federalnogo_byudzheta_za_yanvar-iyun_2023_goda

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Why the digital euro might be dead on arrival

Cyril Monnet and Dirk Niepelt argue that in protecting the current banking model the ECB could be sacrificing the digital euro on the altar of banking as we know it

The ECB has highlighted its commitment to developing a digital euro and has explicitly stated that the digital currency will adhere to three principles: preserve European strategic autonomy, reduce rent extraction by payment service providers, and serve as a robust monetary anchor when cash transactions decline.

This column argues that a fourth, implicit objective – to protect banks and their business model – risks undermining the project. This could prove to be a significant missed opportunity given that social benefits of the digital euro substantially exceed its private ones.

As demonstrated by three recent progress reports, the ECB is committed to its retail central bank digital currency (CBDC) project (ECB 2022a, 2022b, 2023). Nevertheless, the design choices the reports document raise doubts about the ECB's objectives and strategy. As a consequence, the digital euro might well be dead on arrival, as we explain in Monnet (2023) and Niepelt (2023).

The ECB's explicit and implicit objectives

The reports state three main objectives for a digital euro. It should:

- preserve European strategic autonomy in the payment sphere,
- help reduce rent extraction by home and overseas payment service providers, and
- serve as a robust monetary anchor when cash transactions decline.

Attaining these objectives requires an attractive payment instrument and widespread adoption across Europe.

In line with G7 and G20 policy principles, the ECB also does not want the digital euro to endanger the central bank's ability to fulfil its stability mandate, so the digital euro should not add further instability to the financial system.

The ECB seems to have jumped to the conclusion that this entails banking as usual. Enter a fourth objective, which the ECB is much less explicit about: do no harm to banks and protect their business model.

Banks have no interest in seeing the digital euro alive and well unless digital euro-related bank services such as onboarding or wallet management are even more profitable

This fourth, implicit objective dominates all others. Key design options favoured by the Governing Council trim the digital euro's attractiveness rather than increasing it. They include holding limits for consumers (a few thousand euros), even lower ones for merchants (zero), and negative interest premia during periods of financial stress. Notwithstanding the goal of securing a robust monetary anchor, the ECB appears to view these features as permanent.

Hurdles for digital euro adoption

Regulated financial intermediaries shall be responsible for deploying the digital euro. This raises a serious conflict of interest: a substantial share of banks' profits originates from offering payment services.

Petralia *et al* (2019) report that 17% of banks' total revenue originated from payments in 2017 – a number that most likely increased following the COVID pandemic, which saw an increase in the use of non-cash means of payment.

So, banks have no interest in seeing the digital euro alive and well unless digital euro-related bank services such as onboarding or wallet management are even more profitable.

There are more basic hurdles to overcome before the digital euro will widely be adopted. As an ECB (2022c) survey shows, users prefer cash payments for privacy reasons and card payments for the convenience they offer (speed and security).

So, convenience and privacy are key for adoption, but the digital euro will likely be perceived as subpar along both dimensions. The best available private sector solution for retail payments will certainly dominate the digital euro in terms of user convenience. And in terms of privacy vis-à-vis government as well as censorship resistance, many citizens in Europe have limited faith in the ECB.

Those who trust in deposit insurance or do not worry about the differences between public and private money will hesitate to swap their payment instruments of choice against the new ECB one.

Everybody else might appreciate that the digital euro will maintain its value under any circumstances, but given its likely low yield, they will probably only seek it during flight-to-safety episodes.

Other robust sources of demand are not evident either. Business-to-business applications are not the focus of the digital euro project, and merchants with a holding limit of zero will barely be drivers of institutional change and will remain captive to private solutions.

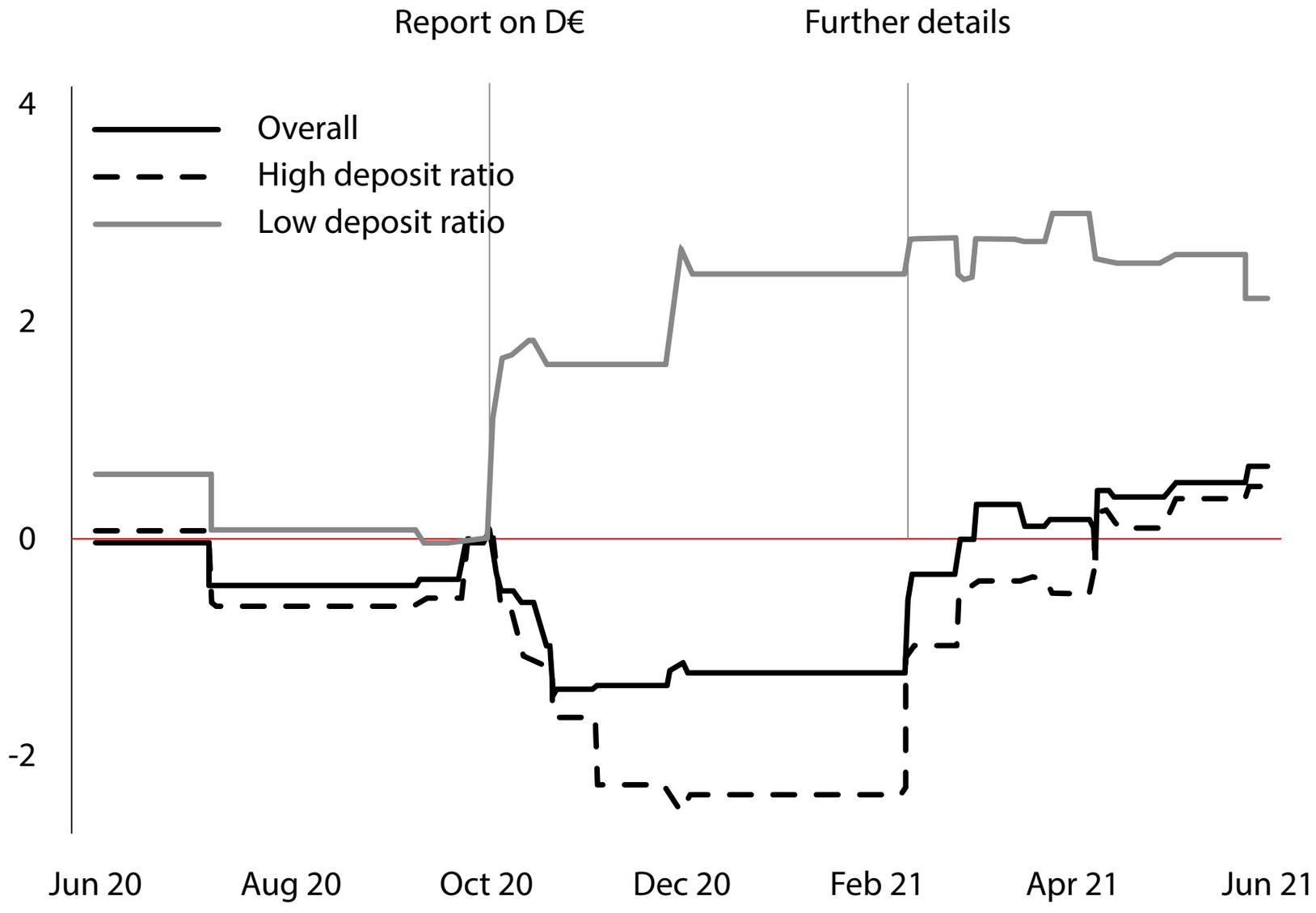
Moreover, markets seem to doubt the digital euro's potential, too. Burlon *et al* (2022) show that after news about the digital euro in October 2020, share prices of banks that rely more heavily on deposit funding incurred losses relative to those of less deposit dependent competitors, but this difference started to disappear when plans on holding limits and negative premia were made public (see Figure 1 which is reproduced from Burlon *et al* 2022). That is, markets appear to view the digital euro in its current form as a side issue for banks, or even an outright failure.

Private versus social benefits of the digital euro

The previous discussion demonstrates that promoting the digital euro requires an aggressive marketing strategy because private incentives for adoption are limited. However, the pursuit of such an aggressive approach is unlikely as this runs counter to the ECB's fourth, implicit objective of protecting banks' existing business model.

This is problematic and could turn the project into a significant missed opportunity, for the potential social benefits of the digital euro substantially exceed its private ones. After all, the case for a digital euro could be quite

Figure 1. Euro area banks' stock market reactions to news about central bank digital currency (percentage points)



Notes: the figure reports the results of an estimation model. Each horizontal segment reports the cumulated abnormal returns up to the latest key event, relative to the level on 1 October 2020. The solid line reports the average across all banks in the sample. The dashed and dotted lines report the average with two groups of banks – those with deposit ratios above or below the median, respectively. The two grey lines indicating the publication of the ECB report on a digital euro on 2 October 2020 and the interview on 9 February 2021.

compelling from a taxpayer and public policy perspective even if it is mixed or even weak from an individual user standpoint.

An effective digital euro could not only foster competition in the payment sector but also reduce the social costs of liquidity provision, substantially scale down too-big-to-fail problems and the associated bank regulation and increase transparency around the costs and benefits of liquidity creation.

These potential gains are large and deserve careful scrutiny. Realising them might call for subsidies to foster adoption rather than deterrents and restrictions.

Historians, economists, commentators and (mostly former) high-ranking central bankers alike have highlighted the stability risks of private money creation and fractional reserve banking (eg. King 2016). The advent of retail CBDC offers the opportunity to rethink the current monetary architecture and to re-evaluate these very features.

However, rather than opting for a rethink, the ECB seems to have decided to stick with the status quo. This is tantamount to sacrificing the digital euro on the altar of banking as we know it. ■

Cyril Monnet is Professor of Economics, and Dirk Niepelt is a Professor, both at the University of Bern

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The value added of CBDCs: a view from the euro area

Maria Demertzis and Catarina Martins argue that the ECB is uniquely positioned to help create the global standard, and in the process to help protect the EU's global strategic interests

Executive summary

Different jurisdictions have set out different reasons for creating central bank digital currencies (CBDCs). Some countries, particularly those with already-operational CBDCs for retail purposes, aim to promote financial inclusion. But in countries where most citizens have access to financial services, central banks are interested in CBDCs as an aspect of the increasing digitalisation of finance.

Central banks could also choose to use CBDCs to guarantee in full citizen's holdings (currently, deposits in commercial bank are only partially guaranteed), but this would trigger major changes in the financial system in terms of the role of commercial banks in intermediation and the role of fiat money. So far, central banks have not opted to go this way.

In the euro area, consumers have multiple payment options and a very efficient retail payments system. The currency enjoys high levels of trust and is not challenged by the emergence of private currencies, such as Bitcoin, or by the risk that cash, a monetary system's anchor, will disappear. Therefore, creating a CBDC for retail purposes in the euro area offers little obvious value added, at least for the foreseeable future.

However, there is a strong case for building a CBDC that banks could use for crossborder wholesale purposes (ie. with other currencies). Wholesale CBDCs could revolutionise the way that crossborder, cross-currency payments are made for two reasons.

1. Crossborder payments are currently slow and inefficient. Pilot projects have shown that wholesale payments with CBDCs can generate substantial time and cost savings.

2. Any two central banks that have operational wholesale CBDCs could settle transactions between themselves. This would be very different from the current system, as most settlements today are done via the dollar (and then the euro) infrastructure and use correspondent banks.

The euro area and the United States would have to consider carefully from a geopolitical perspective how wholesale CBDCs might affect their global economic standing. By developing a CBDC for wholesale purposes, the European Union would be able to contribute to developing the global standard.

Wholesale CBDCs have the potential to change the current dollar-based system into one that is more diverse

1 Introduction

Central bank digital currencies (CBDCs), a digital equivalent of cash, are increasingly gaining traction. At least 114 jurisdictions, representing 95 percent of global GDP, are at some stage of developing a CBDC[1]. In 11 countries, CBDCs are now a reality and operate in parallel to their physical equivalent. But it is not necessarily easy for the consumer to understand the difference between a euro in coin or note form and a digital euro.

A good starting point in identify the benefits of CBDCs is to understand the problem that cannot be solved through the increasing range of digital payment options provided by the private sector, and which therefore requires the state's intervention. This is important in explaining why the taxpayer might be asked to finance the creation of a CBDC.

We argue that CBDCs do have added value, but this is not the same for every country. In countries with high levels of financial exclusion and where there is a lack of modern and reliable digital payment systems, a CBDC can facilitate access to payments for many people. But in countries with ample payment solutions and where financial exclusion is a second-order problem, the justification is different.

Central banks worry that as finance becomes increasingly digitalised, two things might happen: first physical cash, the anchor of any financial system, will be displaced, and second, private currencies will become popular. Both could reduce the monopoly of sovereign money. Central banks fear this would compromise their ability to maintain monetary and financial stability.

CBDCs will have a dual purpose, just like their physical equivalent: for retail purposes, typically by consumers and small businesses to make daily payments, representing a small part of total payments; and for wholesale (ie. bulk) purposes by banks and other financial institutions, either domestically or cross border. In the euro area, most efforts

to date have focused on how to develop a retail CBDC. Only recently[2] has there been also an attempt to advance thinking on the wholesale aspects as well.

On the retail side, the arguments for a digital euro put forward by the European Central Bank revolve around the speed of digitalisation of finance and the notion of strategic autonomy. The prospect of finance becoming predominantly and eventually even exclusively digital threatens the existence of sovereign money and compromises the role of its guardian, the central bank.

The ECB also argues that a big part of all payments is managed by foreign players, who collect sensitive information about EU citizens. A pan-European payment method that is very close to cash would help reduce this vulnerability. It would also help homogenise payments in the euro area and, given easier access, may help promote the international role of the euro.

However, these reasons, understandable as they might be, do not make a compelling case for a retail digital euro, at least for now. There is no imminent threat that digitalisation will undermine the role of the physical euro. And there are easier ways, like through regulation, to promote the creation of a uniformly-accepted digital instant payment method in the EU, without having the taxpayer finance a CBDC.

Meanwhile, Europe's vulnerability arising from foreign players being present in the payment sphere is a very delicate argument. Does the EU want to create European payment players at the expense of competition?

Finally, the euro has acquired a very stable international role, second to, and quite far from, the dollar. At best, a digital equivalent can only expand the euro's international appeal at the margins. Other factors that pertain to a more integrated and well-governed European economy would advance more significantly its international acceptability.

There are also several technical choices, including limits on the amount of digital euros that any citizen can hold, or the fact that these deposits will not be remunerated, that also prevent the greater international use of the euro.

In addition, the Eurosystem has a very fast and efficient retail payment system and can still find efficiency gains within the current system. All these make the case for a digital euro even less attractive.

However, the EU and the global financial system can really benefit from developing wholesale CBDCs for making payments outside the euro area. his can generate efficiency gains for all payments made outside the EU. In our view, the creation of CBDCs globally has the potential of revolutionising crossborder payments.

For now, one reason why the dollar is the currency of choice globally is because it offers the infrastructure via which any two parties can settle a transaction. Any two countries that have CBDCs will have in principle the ability to settle transactions between them, bypassing the current dollar-based system.

Before this could happen however, there would have to be a commonly agreed global standard on how to design and use CBDCs. This is a significant barrier as it requires mutual recognition of legal systems and agreement on economic and technical design issues (BIS, 2022).

Global governance will be a major obstacle to this revolution and the euro area and the United States would have to consider carefully how their economic standing globally would be affected.

For example, current sanctions on Russia mean that countries that want to continue economic relations with Russia cannot do so in dollars or euros. Mutually accepted CBDCs between any two countries could allow them to continue trading and therefore bypass sanctions.

This reduces the need for the dollar infrastructure in international settlements and, importantly, raises the threshold for returning to the dollar when the option presents itself in the future. International financial fragmentation encourages the development of CBDCs and may be part of the explanation for their rapid advancement in the past few years.

2 The emergence of CBDCs

We first clarify how CBDCs may differ from physical cash. Figure 1 describes the taxonomy of money. The digital form of a sovereign currency, a CBDC would be legal tender and fully guaranteed by public authorities. This contrasts with deposits in commercial banks which are guaranteed only in part: for example, €100,000 in the euro area and $250,000 in the US.

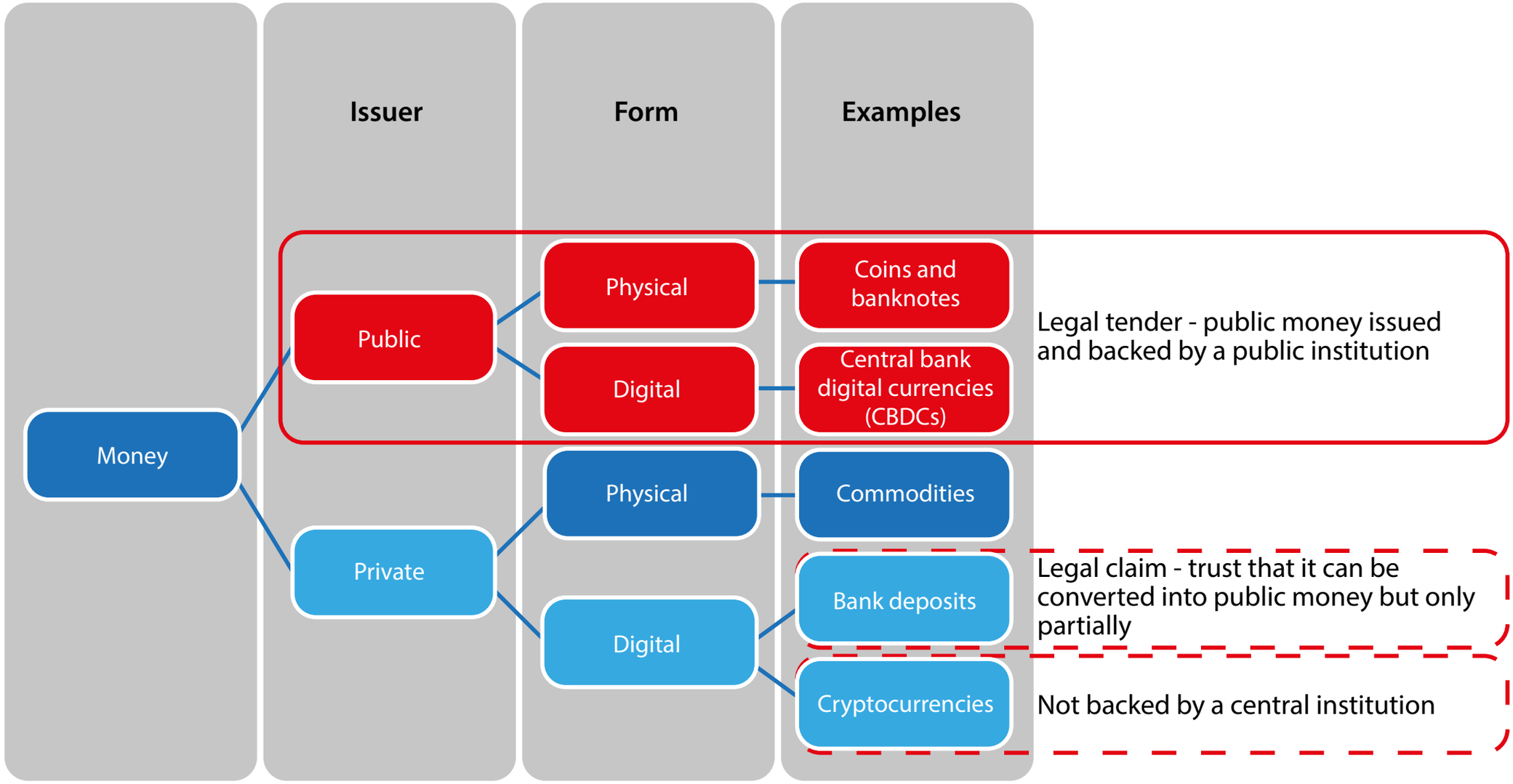
As legal tender, CBDCs could not be refused as means of payment or for repaying debts in the respective jurisdictions.

However, legal tender laws are not sufficient to guarantee the acceptability of a new currency, as shown in the literature (Lotz and Rocheteau, 2002). In a two-sided market, acceptability comes not only from take-up by consumers, but also from take-up by merchants, who must invest in the necessary equipment. This has been shown to be an obstacle and would have to be addressed for CBDCs.

Also, CBDCs will be convertible one-to-one into other forms of central bank money – reserve balances or cash. A CBDC will be the closest substitute possible to physical cash, which settles near instantly.

However, while the technology may be able to ensure privacy, CBDCs will not allow for anonymity in the same way as physical cash. Last, holding CBDCs would mean holding a direct liability with the respective central bank, very much like holding a banknote.

Figure 1. Taxonomy of money



Source: Adapted from Claeys et al (2018).

Central banks have become interested in the idea of CBDCs for three main reasons:

1. The emergence of cryptocurrencies. The Bitcoin revolution has provided means of payment that are privately issued and managed. If private money were to become successful, especially if it is in principle available to everyone globally, it could displace publicly issued money (cash) and fiat money that is issued by financial institutions but monitored and guaranteed in part by public authorities.

The existence of private money reduces the money base that central banks control, and therefore reduces their ability to control inflation and monitor financial stability. With CBDCs, central banks would provide a digital equivalent of public money that would mimic the technological features of cryptocurrencies.

2. Increasing use of digital payments. The increased digitalisation of payments reduces the role and use of cash in most economies. Cash is often referred to as the anchor of the financial system, providing the necessary trust to the whole system.

The worry is that with decreasing use of cash in everyday transactions, physical cash would disappear, thus eroding trust in the system. A digital equivalent of cash would maintain the anchor while addressing the change in payment preferences.

3. Improve the reach and efficiency of payment systems. In several countries where many people do not have access to the financial system or digital payments, CBDCs offer increased financial inclusion.

This is potentially a game changer, and it is not a coincidence that those countries already using CBDCs, such as Nigeria and the Bahamas, have financial inclusion as a prime motive.

However, even for countries where financial exclusion is a small and isolated problem, there are benefits to improving the efficiency of payments.

This is particularly true for payments across borders, where CBDCs have the potential to create a global standard for international payments that is both efficient and universally accepted. This has the potential to revolutionise the way payments are settled between any two entities anywhere in the world.

While these three reasons are not exhaustive, they are the main arguments put forward by most countries. Other reasons that have been mentioned for developing CBDCs are a more cost-effective issuance and management of physical cash (Reserve Bank of India, 2022), support for the wide application of new technology and innovation, and the strengthening of operational resilience and cybersecurity[3].

Central banks worldwide are experimenting with the technology to identify which type of CBDC, retail and/or wholesale, will provide value-added for their consumers and cover their needs.

3 The case for a retail CBDC

Currently, a consumer (payer) who wants to make a payment instructs their bank to make a transfer to the payee's account. The transaction involves an amount moving from one bank to the other and is settled by the central bank.

With CBDCs, however, both the payer and the payee will have accounts directly at the central bank. There will be no commercial banks involved[4]. Both the payment and the settlement will happen via the central bank directly. Furthermore, CBDCs could use new technology, such as distributed ledger technology (DLT), which is being explored.

The motive for deploying a retail CBDC depends crucially on how the three factors we have described in section 2 have impacted a particular jurisdiction. Are cryptocurrencies a threat to traditional forms of payment and possibly a source of financial instability?

Is physical cash redundant, therefore, threatening to de-anchor trust in the monetary system? Are there efficiency gains to be had in payments both for retailers and in wholesale?

3.1 Cryptocurrencies are not taking over payments

The emergence of cryptocurrencies has democratised payments and financial services in that it has provided easier access by removing intermediaries. However, cryptocurrencies have also proved to be very bad means of payment or store of value because their price has been very volatile (Demertzis and Martins, 2023).

In practice, the fear that cryptocurrencies could displace sovereign money has so far proved unfounded. Nevertheless, the experience is not the same around the world, and of course things might change in the future.

Despite its increasing size, the crypto market still represents a small fraction of the total financial system. According to the ECB, the value of all cryptoassets represented less than 1 percent of total global financial assets by April 2022 (Panetta, 2022a). They also represent a small component of the total value of payments.

The *Global Payments Report* (FIS, 2023) noted that cryptocurrencies are used much more for investment purposes than as a means of payment (77 percent compared to 18 percent, according to their survey), and that the value of e-commerce payments using crypto represented 0.19 percent of global e-commerce value in 2022.

Table 1. 2022 Global Crypto Adoption Index

Overall index ranking	Country	Overall index ranking	Country
1	Vietnam	11	Nigeria
2	Philippines	12	Turkey
3	Ukraine	13	Argentina
4	India	14	Morocco
5	United States	15	Colombia
6	Pakistan	16	Nepal
7	Brazil	17	United Kingdom
8	Thailand	18	Ecuador
9	Russia	19	Kenya
10	China	20	Indonesia

Source: Chainalysis (2022).

However, in Africa, Asia and Latin America, cryptocurrencies are increasingly playing a more active role. An index compiled by Chainalysis (2022) tried to capture a broad picture of cryptocurrency adoption by scoring countries on a variety of measures. It ranks only two high-income countries – the US and the United Kingdom – among the top 20 crypto adopters in 2022 (Table 1).

According to White and White (2022), Africa is the fastest-growing cryptocurrency market among developing regions. Between 2020 and 2021, Africa saw a 1,200 percent increase in cryptocurrency payments. Remittances, which are a very important source of income for the continent, have been greatly facilitated by cryptocurrencies (White and White, 2022).

In Nigeria, 10.3 percent[5] of the population owned cryptocurrency in 2022. The popularity of crypto in Nigeria is explained by financial exclusion, the lack of access to financial services. However, the weakness of the domestic currency and inflation is also a reason for the popularity of crypto alternatives.

A CBDC would help, at least in principle, to reduce financial exclusion, but would not by itself alleviate doubts about the strength of the sovereign currency.

3.2 Cash is still popular

The increased popularity of digital payments, particularly during the COVID-19 lockdowns, has reduced the need for cash. Nevertheless, cash still has an important role in point of sale (PoS) payments, particularly in less-developed regions and it is here to stay at least for the foreseeable future (BIS, 2023; FIS, 2023).

European Central Bank data for the euro area indicates that, despite the reduction in cash payments at the point of sale, from 79 percent in 2016 to 59 percent in 2022, cash remains the most popular payment method, especially for low-value transactions (Figure 2, top panel).

Citizens' opinions on the importance of having the cash option demonstrates that a society without cash is nowhere close. The proportion of people considering cash 'very important' and 'fairly important' is above 50 percent for most euro area countries (Figure 2, bottom panel). This goes against the popular belief that cash will soon be abandoned.

Zamora-Pérez *et al* (2022) argued that, at the global level, the demand for cash has not decreased but rather has increased. This has happened despite the many new innovative solutions that have emerged for non-cash payments.

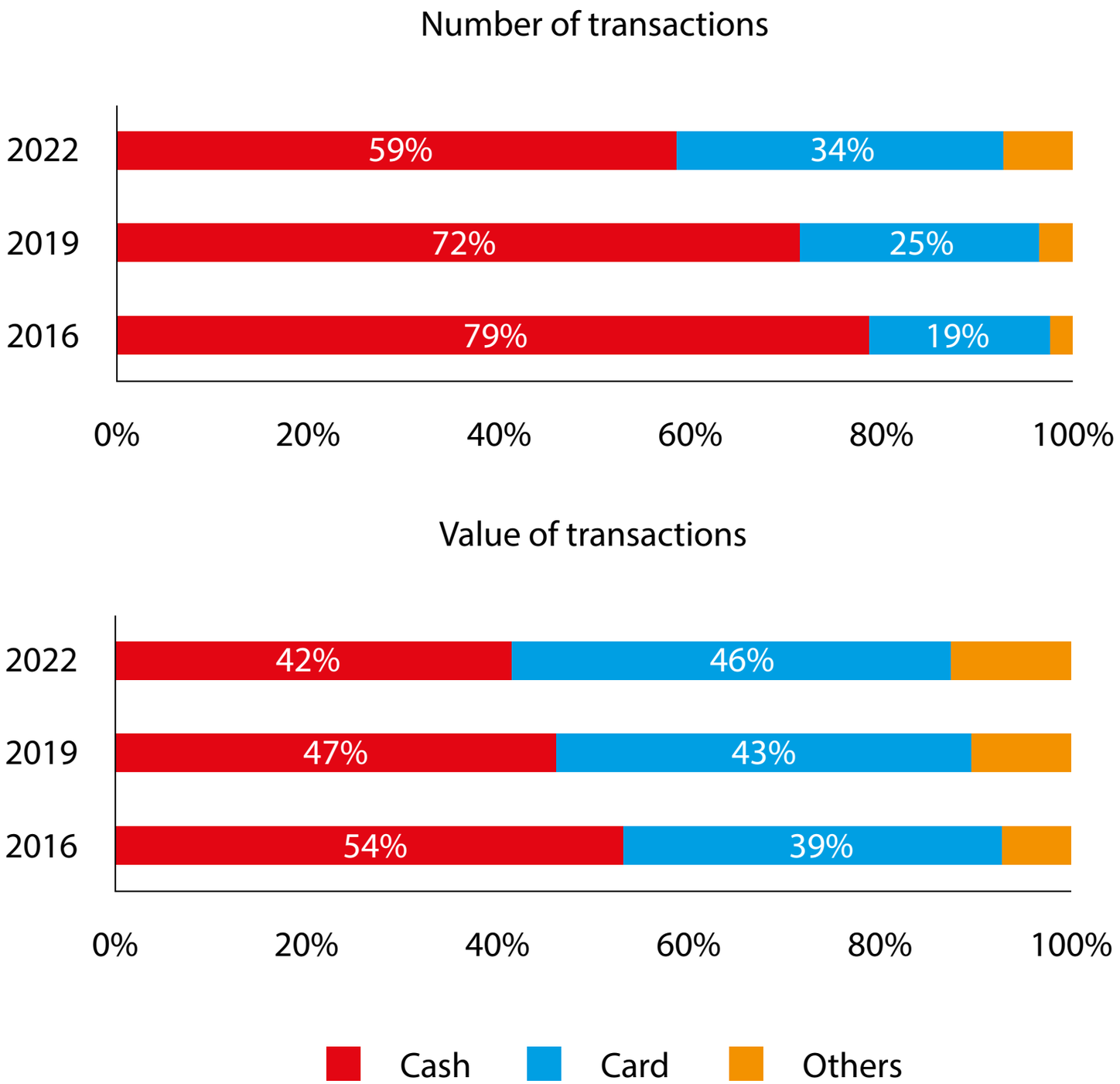
Some of this increased demand may be related to a precautionary savings motive: a means of storing value in a period of low-interest rates that spanned several years.

Additionally, even countries like Sweden, that have attempted to go totally cashless, have acknowledged that this might not be possible and that some, even if limited, amounts of cash will always be needed[6]. Armelius *et al* (2020) went as far as arguing that Sweden may be an outlier when it comes to the trend towards a cashless society, and not the trendsetter.

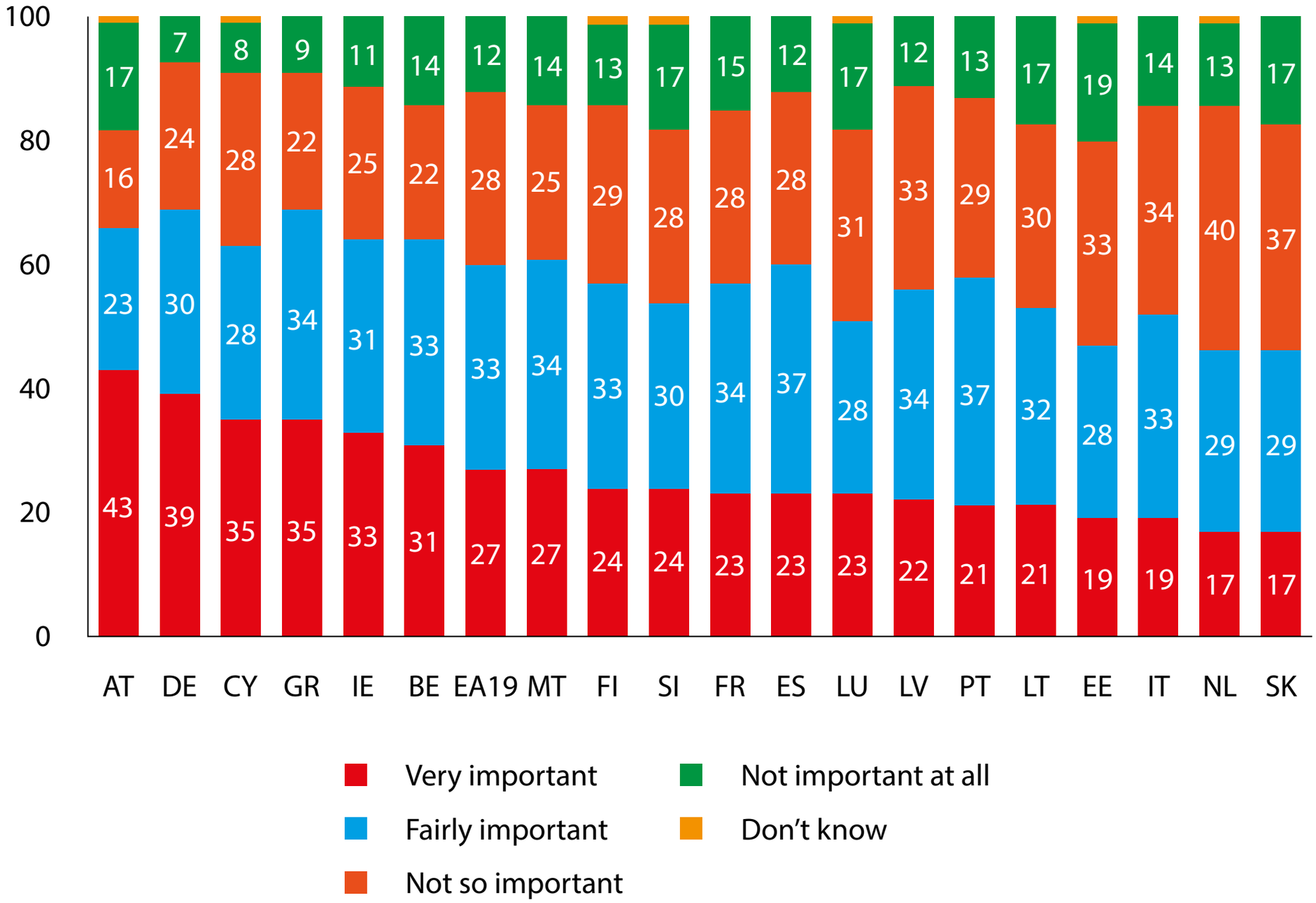
Nevertheless, it is important to acknowledge that the process of digitalisation will mean that the demand for physical cash will continue to decline. It is much more difficult to assess whether it will disappear completely or, like in Sweden, stabilise at a low level[7].

Part of the answer will depend on how well CBDCs, as the closest digital equivalent to cash, can take over the role of cash in providing an anchor for the system. Choices in the design of the CBDC will determine how close to cash CBDCs can be. Privacy and anonymity, the thresholds for consumer holdings of CBDCs and whether it will be remunerated or not will be relevant in this regard.

Figure 2. Payment preferences and the importance of cash in the euro area



Importance of having the option to pay with cash, by country (%)



Source: Bruegel based on ECB (2022).

3.3 Financial exclusion and the introduction of retail CBDCs

Perhaps the most compelling argument for introducing retail CBDCs is that it will increase financial inclusion. It is therefore not surprising that countries where a substantial part of the population is excluded from financial services were the first to introduce their national currencies in digital form.

Nigeria's eNaira, for example, was launched at the end of 2021, with the aims of increasing remittances, fostering crossborder trade, improving financial inclusion, enabling the government to make welfare payments more easily and making monetary policy more effective[8].

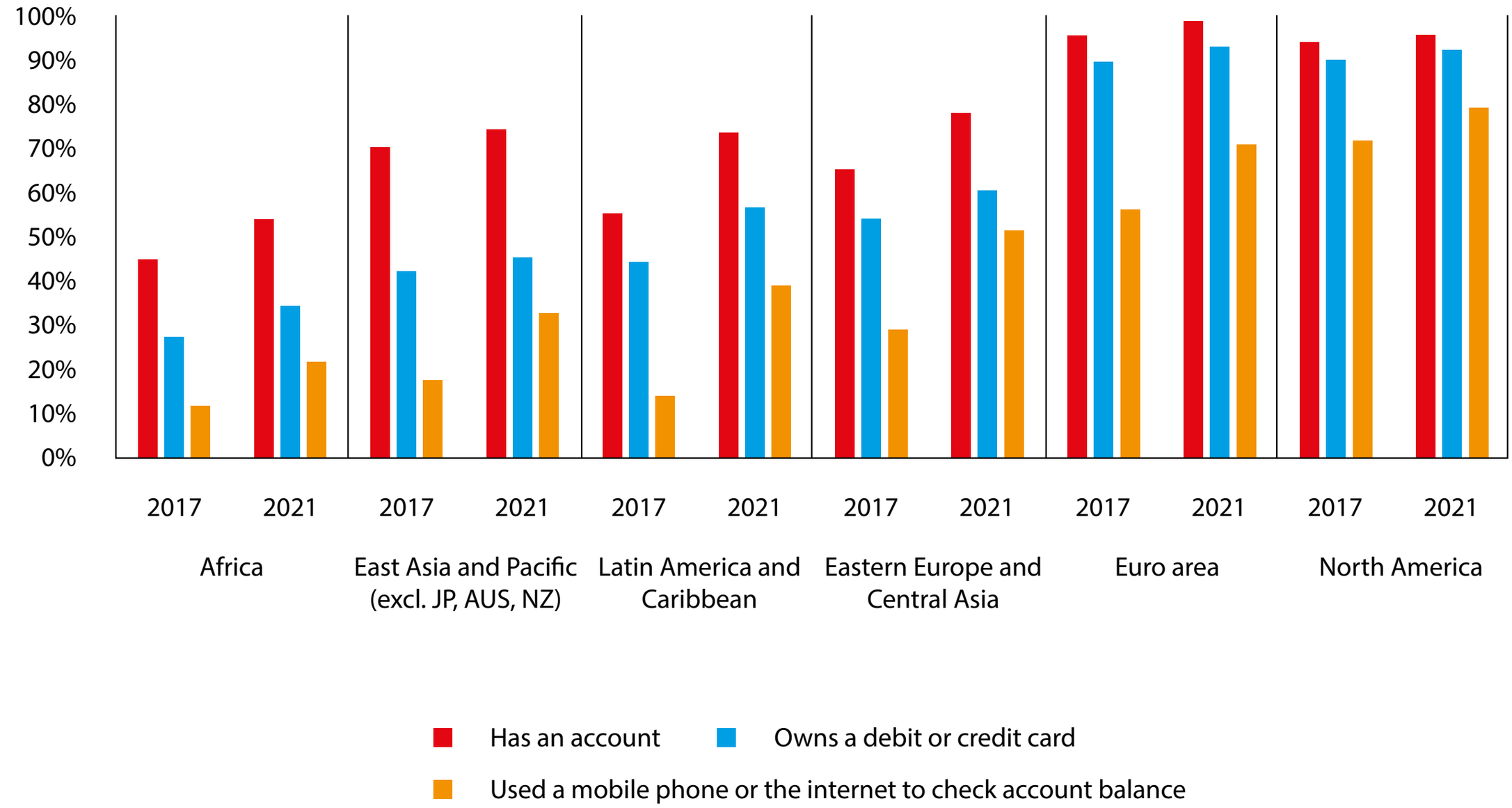
Providing the local population with access to digital payments and through them facilitating crossborder transactions in the form of remittances is particularly important, given the relevance of remittances as a source of income for the country. Figure 3 shows the level of financial inclusion worldwide.

Advanced economies such as euro area countries, the US and Canada have very high levels of financial inclusion. This is not the case for African countries or some Caribbean countries, where CBDCs are already being introduced.

However, a CBDC by itself is not enough to reduce financial exclusion. For CBDCs to be adopted widely there needs to be broad access to internet connection, consumers need to have mobile phones and merchants need to have invested in the equipment to accept payments in CBDCs.

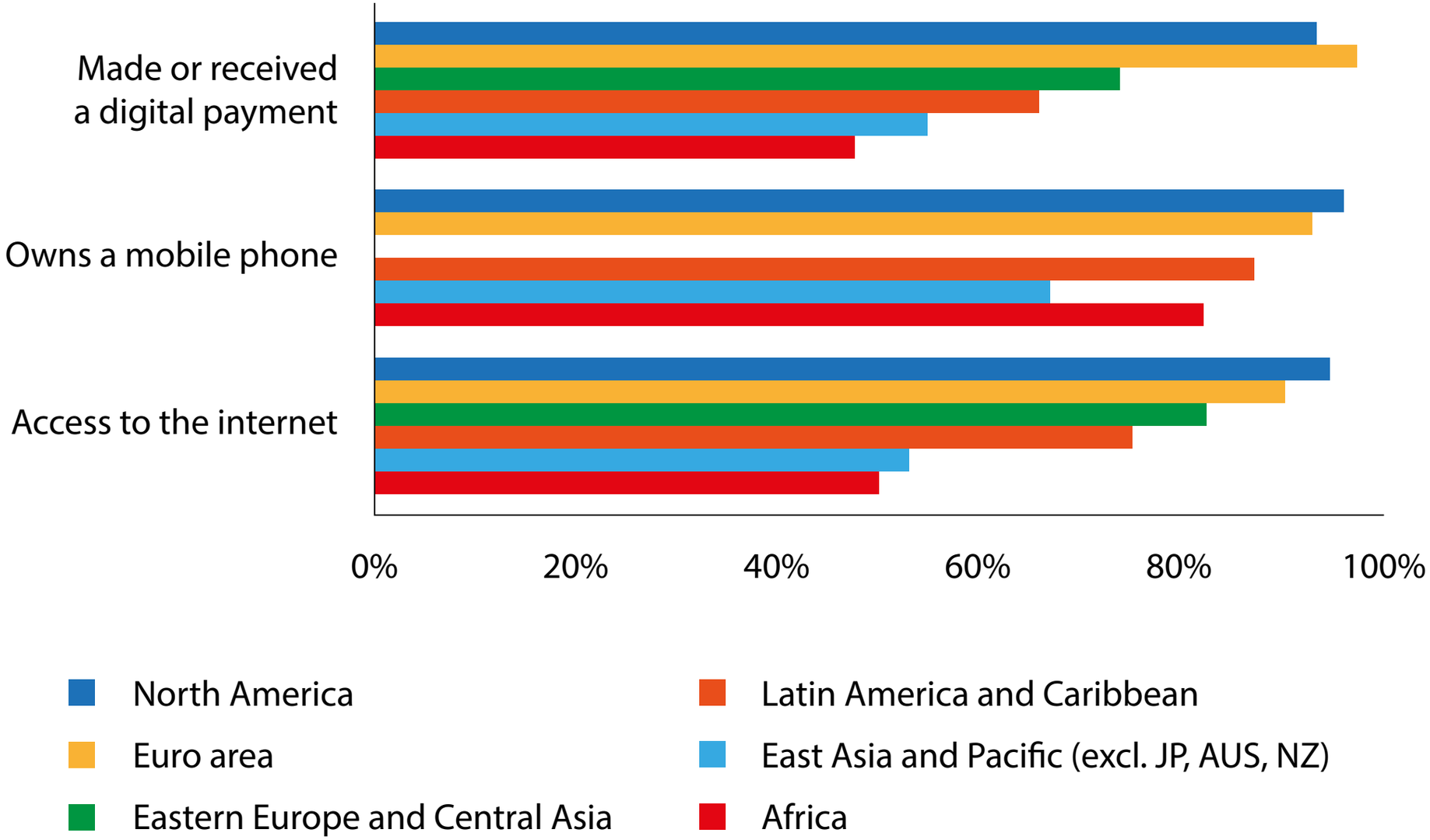
Figure 4 shows that while a large proportion of the African population has access to a mobile phone, access to the internet by contrast is not as widespread (50 percent), which defines the limits of success that the introduction of a digital currency can have.

Figure 3. Financial inclusion, three metrics



Notes: JP = Japan, AUS = Australia, NZ = New Zealand.
Source: Bruegel based on the Global Findex Database 2021.

Figure 4. Digital infrastructure and penetration



Source: Bruegel based on the Global Findex Database 2021.

It is worth noting that even if there is digital access, it is not immediately the case that the introduction of CBDCs is the only or even the easiest way to improve financial inclusion, as shown by India and Brazil.

Officially launched in 2016, Unified Payments Interface (UPI)[9] is an Indian instant payment system widely adopted in the country. Given its huge success, it is seeking agreements with other countries to enable its acceptance abroad[10].

The Central Bank of Brazil meanwhile launched a platform for real-time digital payments called PIX which has proved an enormous success. Since the launch, the number of registered users has increased continuously, reaching more than 137 million in May 2023[11], which represents more than 60 percent of the country's population.

PIX does not require any exchange of personal data, as the payer just asks for the payee's QR code, and payment transfers happen at very high speed at any time of the day. According to the 2023 *Global Payment Report*, average fees on PIX transactions are 0.22 percent of the transaction cost compared to 1 percent for debit cards and 2.2 percent for credit cards.

It would be very difficult to make a case for introducing a retail CBDC that can provide more value added than this to the consumer, a fact that explains why the Central Bank of Brazil's interest in introducing a CBDC is mainly for wholesale purposes[12].

3.4 How popular are CBDCs?

Admittedly, digital equivalents of sovereign currencies have existed for no more than two years. But their uptake is not as impressive as authorities hoped.

Table 2 shows their uptake level for three countries, Nigeria, the Bahamas and China. Compared to total currency in circulation, CBDCs represent very small amounts and in none of these cases above 0.17 percent of the total.

There are major problems to overcome. For the Sand Dollar, the CBDC of the Bahamas, introduced in October 2020, at least two issues might contribute to its small uptake[13].

First, the public confuses the Sand Dollar with privately issued cryptocurrencies that are not immediately trusted. After the scandal around FTX, which was based in the Bahamas, the public grew very sceptical about any digital currency.

Second, the Sand Dollar is not readily accepted everywhere. Merchants do not all have the right equipment to accept it (a reason also given for the eNaira), even though they incur no cost for having the equipment.

Table 2. CBDCs in circulation

December 2022 values	Nigerian eNaira	Bahamian Sand Dollar	Chinese e-CNY
CBDC in circulation	3 billion eNaira	303,785 Sand Dollars	13.61 billion e-CNY
% of total currency in circulation	0.01%	0.17%	0.13%

Source: Bruegel based on Central Bank of Nigeria, Central Bank of The Bahamas and People's Bank of China.

This raises interesting questions about how to increase public acceptability. Historical incidents show that legal tender laws are not sufficient to guarantee the acceptability of a new currency (Lotz and Rocheteau, 2002).

In a two-sided market, acceptability comes not only in the form of consumer take-up, but also from merchants who must invest in the necessary equipment. This has been shown to be an obstacle. Zamora-Pérez *et al* (2022) found that providing the status of legal tender is not always the right means of increasing the popularity of a currency, as the cost of building the infrastructure necessary for a currency's adoption must be addressed.

However, Brazil's PIX payment system shows that mandatory participation of certain private players may be enough to create sufficient network effects, necessary for such markets to pick up. Similarly, Chinese public authorities are beginning to pay civil servants salaries in e-yuan[14].

An important reason for low uptake is the lack of trust in the underlying currency. The digital representation of a currency is not sufficient to generate trust. It may allow for easier access but that can only help marginally. This is shown to be an important explanatory factor in the poor adoption of the eNaira in Nigeria[15].

An interesting experiment is taking place in Zimbabwe, where authorities have issued a gold-backed token[16] as a way of improving the trust in the local currency, the Zim dollar. Pegging the currency to a trusted asset is one way of trying to improve its stability and reputation. But it can also prove to be very expensive and ultimately non-credible. It will be interesting to see how far this effort goes to establish trust in the country's CBDC.

3.5 A mixed case for establishing a retail CBDC

We have so far discussed arguments that are regularly made to justify the introduction of a retail CBDC, and the experience of countries that have decided to launch CBDCs.

The process of digitalisation in payments has not made a clear case for CBDCs. If anything, there is still insufficient understanding among the public in countries where they are already in operation, of the difference between CBDCs and private cryptocurrencies.

The most compelling reason in favour of a CBDC is financial inclusion. But even for this, CBDCs are not a solution by themselves. Other elements, like digital infrastructure, need to be available. And the Brazilian example shows that when digital infrastructure is available, there are other solutions to financial inclusion. The key is finding effective ways of creating network effects.

The welfare implications of introducing retail CBDCs remain very understudied. Piazzesi and Schneider (2022) suggested that the emergence of digital currencies could distort the level of competitiveness in payment systems.

This is of relevance in jurisdictions, such as the euro area, where there are plenty of other available private payment alternatives. CBDCs have the potential to prevent useful innovation in private markets, therefore, reducing aggregate welfare.

On the other hand, Williamson (2022) took a different view. Competing with private means of payment, CBDCs will attract safe assets (deposits). This, he argued, is a way of managing safe assets in a better, more welfare-enhancing way compared to how private banks deal with this stock. CBDCs could in theory be a way of bypassing the imperfections of partial deposit guaranteed systems.

However, CBDCs are not the only way of guaranteeing deposits in full. Regulatory adjustments could do this instantly. Importantly, a regime that shifts deposits from private banks to the central bank will necessarily change

the face of retail banking, an action that should not be done lightly. This has never been the motive behind introducing CBDCs and should not be dealt with as a mere unforeseen consequence.

There remain operational risks of introducing a retail CBDC. How will deposit holders retrieve them from private banks and place them at the central bank? Can this happen all at once, or will it trigger a run on the banks? There are also issues of cyber security and no system can be completely secure.

How does technology and the regulation that applies to it ensure financial stability? Finally, there is overwhelming evidence that consumers worry about privacy and anonymity (ECB, 2021; Noll, 2023).

While the technology that the ledger provides may offer novel solutions to a number of issues, the legal framework behind CBDCs is as credible as that of physical currencies and the institutions responsible for their issuance. A digital representation of a currency cannot solve governance shortcomings.

4 What is novel about wholesale CBDCs?

4.1 Improving wholesale payments

In the current system, bank reserves in the central bank available for wholesale transactions are already a form of central bank digital currency.

In other words, payers and payees in the wholesale market – banks – already have accounts at the central bank. This means that, unlike CBDCs for retail purposes, wholesale CBDCs do not need to be created from scratch. Rather, it is about using the most modern technology – distributed ledger technology (DLT) – to operate wholesale transactions.

Then the question is whether this new technology can provide efficiency gains in wholesale payments domestically, or between central banks across borders.

In various advanced economies, domestic payment systems are already very efficient: for example, real-time gross settlement systems such as T2, launched by the Eurosystem in March 2023 to replace the previous TARGET2 system, which settles euro-denominated payments, and the Fedwire Funds Service, which settles dollar-denominated transactions.

The systems are operated by the respective central bank. T2 is already meant to improve cost efficiency, provide greater cyber security and optimise the use of liquidity by harmonising and integrating various TARGET services[17].

Even though wholesale settlement systems are quite advanced in the EU and in the US, the ECB and the Fed are both exploring how DLT can prove more efficient and secure for domestic interbank transfers[18].

However, it is in crossborder and cross-currency transactions that DLT could provide sizeable gains. These transactions are subject to inefficiencies related to the current correspondent banking architecture (Hebert *et al* 2023). International payment systems have not kept up with the scale of crossborder financial flows in an increasingly open world.

The systems used are costly, slow and complex, which means that many participants from emerging markets and the developing world have been left with no access to the global financial system.

In an increasingly interconnected world, the need to improve crossborder payments has been established as a priority by the G20, with the Financial Stability Board leading in coordination of efforts[19].

BIS (2021) provided a flavour of the potential gains from new ways of making crossborder payments. Table 3 summarises the results of such comparisons.

A transaction that currently takes three to five days could be completed in less than 10 seconds. Cost savings could also be significant, but their magnitude would vary between banks and regions. For example, average costs for overseas transactions amount to 2 percent in Europe, while in Latin America such costs amount to as much as 7 percent.

New payment solutions being explored could reduce this cost to as low as 1 percent. Savings would come from removing the network of correspondent banks in the chain of transactions and putting in place instead direct corridors that allow central banks to communicate.

Such efficiency gains were achieved in a pilot project called mBridges (BIS, 2022), in which the following central banks participated: the Hong Kong Monetary Authority, the Bank of Thailand, the Central Bank of the United Arab Emirates, the People's Bank of China, and the BIS Innovation Hub Hong Kong Centre. Using DLT, the project established a multi-CBDC platform via which market participants could make crossborder peer-to-peer payments directly using central bank money.

Along with efficiency and cost gains, the project demonstrated an ability to reduce settlement risk and allow for the use of local currencies for international payments, a move away from having to rely on international tradable currencies like the dollar and the euro. The pilot showed though that several complex choices would have to be made.

Table 3. Efficiency gains from DLT compared to the current payment system

	Current payment systems	New technologies for payments
Transaction time	3-5 days	2-10 seconds
Costs	<2% - >7%	As low as 1%
Accessibility	Via corresponding banks	Peer-to-peer

Source: Bruegel based on BIS (2021).

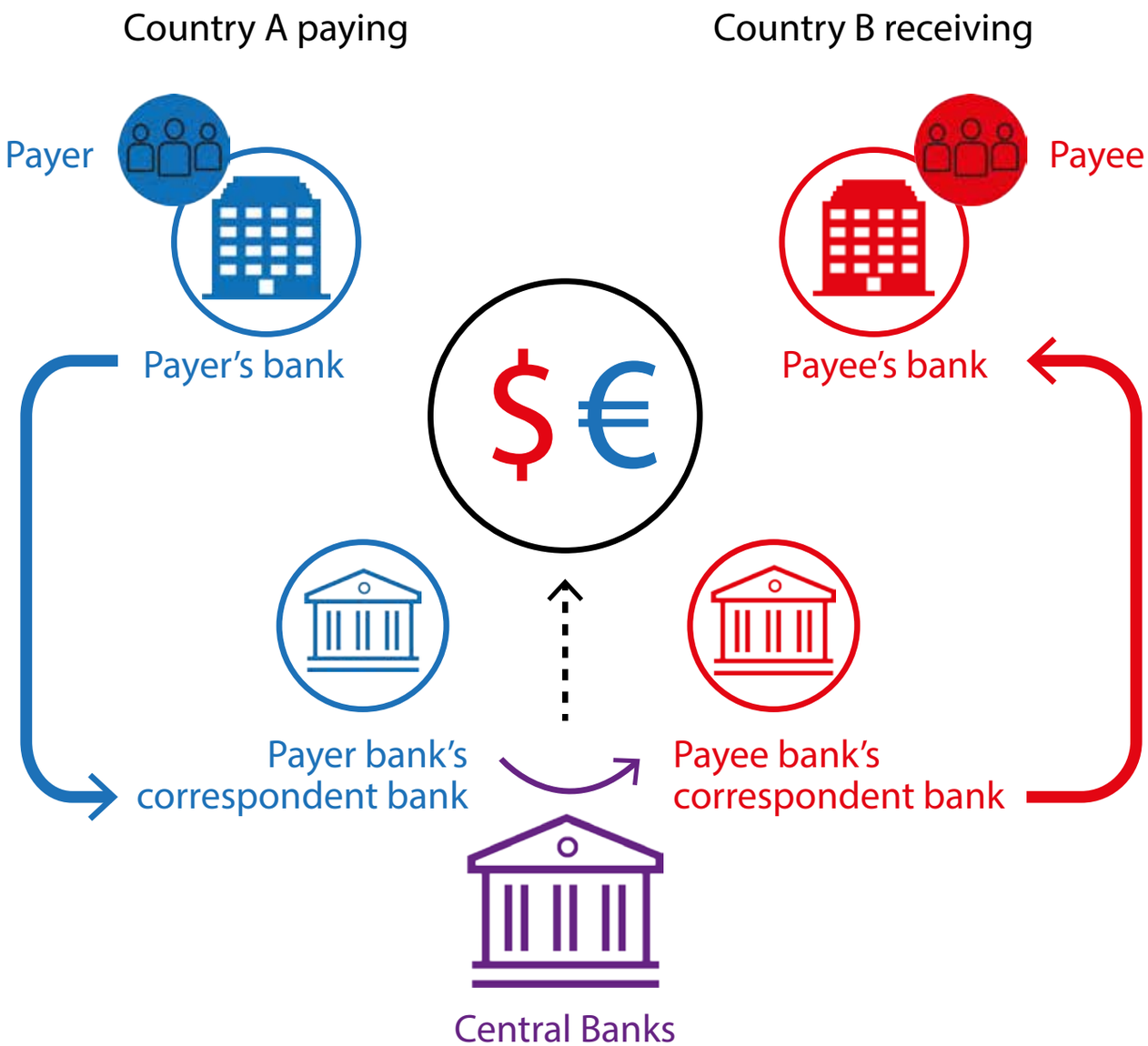
4.2 From a dollar-centric system to bilateral settlements

The international financial system has long relied on the dollar, which has meant having to rely on the dollar settlement system. Figure 5 describes the current system of economic exchange between any two countries.

A company in country A, the payer, instructs its bank to make a payment; the bank then contacts its correspondent bank. The latter will engage with the correspondent bank in country B, which finalises the cycle by contacting the payee's bank and crediting the due amount to the receiver's account.

Depending on the currency in which the exchange is made, the respective central bank will be involved. It is important to note that the dollar is by far the main currency of choice globally in trade invoicing (more than half of global trade) and foreign exchange transactions (almost 90 percent of the total volume) (Moronoti, 2022). This also means that US settlement authorities are involved in finalising most global transactions.

Figure 5. The dollar (euro) based international financial system



Source: Bruegel based on BIS (2022).

Wholesale CBDCs would change this system. Central banks would have dedicated corridors (like the mBridges described above) for settlement directly between themselves. There would be no need for correspondent banks. The payer's bank would have an account directly at the country's central bank, which in turn would communicate directly with the central bank in the payee's country.

This would mean more diversification of currency pairs, with increased liquidity for currency pairs that do not include the dollar. Also, more direct relationships between parties would lead to the de-risking of transactions.

The payer's bank can pay the payee's bank in one of three ways (Figure 6). First, it can hold domestic currency in an account in the domestic central bank, in which case the two central banks will transact using a pre-agreed currency.

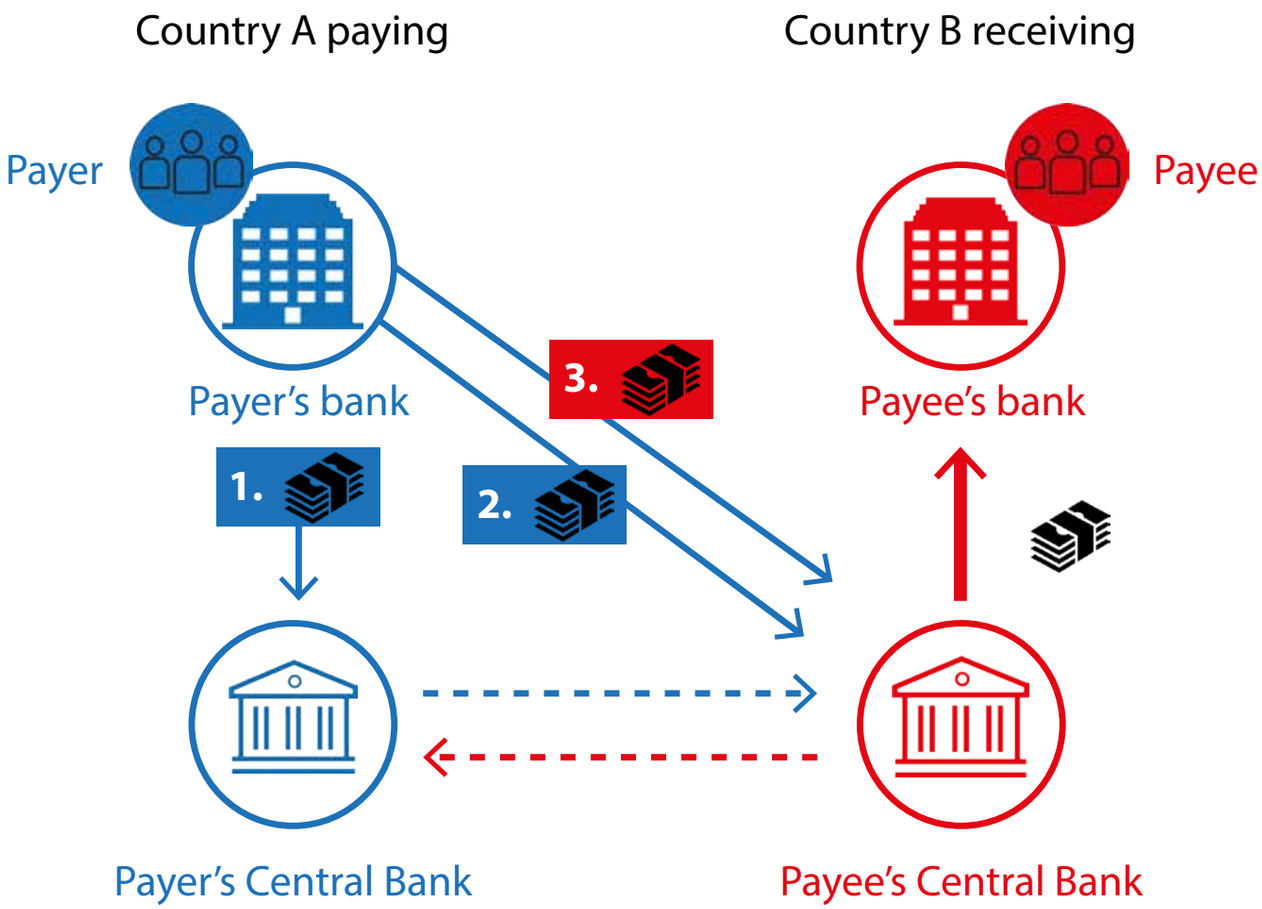
Second, the payer's bank could have a domestic currency account at the foreign central bank and would pay with its domestic currency.

Third, the payer's bank would have a foreign currency account at the foreign central bank and would pay with this.

The first method is closest to what happens today; the dedicated corridors between central banks will allow the settlement of any transaction. The mBridge pilot showed that the third method is the most efficient because it involves the fewest steps between the two transacting parties.

An important issue that DLT solves is interoperability. The current system does not allow for interoperability because communication needs to happen through secure messages. If countries use different systems, they run the risk of not being able to communicate between themselves.

Figure 6. Commercial banks' CBDC accounts at a central bank



Source: Bruegel.

Blockchain[20] technology has provided solutions that allow communication between parties via corridors. But before such dedicated corridors are created, a number of choices need to be made on technical, legal (and governance) and economic issues.

For the system to function, established rules to provide legal certainty are needed. Would current rules for holding foreign securities be sufficient for wholesale CBDCs, or would a new legal framework be needed?

Global coordination on this issue would be preferable and indeed necessary for wholesale CBDCs to challenge the current ways of settling international transactions. Arguably, the governance of wholesale CBDCs will be the most important obstacle to their uptake.

But bilateral recognition of legal systems would also be sufficient for any two central banks to settle transactions between them. Wholesale CBDCs then have the potential to change the current dollar-based system into one that is more diverse. It is not immediately obvious why two countries that trade in dollars would prefer to trade in their own currencies.

However, if one of them was sanctioned by the US, for example, then the dollar would no longer be available to them. A settlement system that is operational between any two central banks would guarantee the continuity of economic activity. While an alternative settlement system by itself does not automatically reduce the appeal of the dollar as the currency of choice, it does reduce the threshold for using other currencies.

Many countries that are thinking about strengthening their resilience will no doubt examine the geopolitical importance of ensuring functioning settlement system. It is no coincidence that so many central banks, including China's, are eager to develop a digital equivalent of their currency.

It is not difficult to imagine CBDCs being weaponised for geopolitical reasons, as central bank reserves have been since Russia's invasion of Ukraine[21].

However, many issues remain. On the governance side, choices will have to be made on issues including data privacy, preserving anonymity, monetary sovereignty and conflict settlement. The mBridges pilot showed that the most efficient payment method would be for foreign companies to have accounts at the domestic central bank if they trade domestically.

What would that mean for monetary sovereignty? How would potential conflicts be resolved? Equally, economic issues would also have to be decided. How would countries deal with counterparty risk? Would the domestic central bank agree to carry that risk on behalf of foreign institutions?

5 A digital euro: design options and its future

5.1 The ECB's thinking so far

The Eurosystem is considering the introduction of the digital euro for retail use. The digital euro project is at time of writing in the investigation phase, which will come to an end in October 2023 at which point the ECB will decide on the next steps[22]. Three progress reports have been issued so far (Box 1).

The first progress report, published in September 2022, focused on the functionalities and limits for users. It concluded that the consumer should be able to pay with digital euros online and offline, and that the digital euro should mimic cash-like features as much as possible.

While privacy is to be ensured, the digital will not be fully anonymous because of worries about money laundering. Also, it should be used exclusively for payments and not as a form of investment.

This choice also reflects financial stability considerations, and particularly the prevention of excessive migration of bank deposits to the central bank, which could disrupt the current financial system. To this end, individual holdings should be limited to between €3,000 and €4,000 (Panetta, 2022b).

The second progress report, issued in December 2022, focused on defining the settlement and distribution roles and ensuring an easy conversion between digital euros and cash/private money. The Eurosystem intends to retain full control over the issuance/redemption and settlement of digital euros, but has not decided on the technology to use – traditional, DLT or a combination of both.

The distribution and direct interaction with end users would be the responsibility of banks and other payment service providers. They would develop the interfaces and services – such as wallets – and perform regular anti-money laundering checks.

The third progress report (April 2023) clarified that payments would be done using technology already familiar to most European citizens, for example, contactless or QR codes, through either the existing apps of intermediaries or a Eurosystem app, depending on the user's preference. The April 2023 report also discussed the possibility of access for non-euro area residents.

The primary focus of the initial releases of the digital euro however will be for euro area residents only (individuals, merchants and governments), even though access to non-residents could be possible if they have an account in the euro area. Access for residents of the European Economic Area and selected third countries could be envisaged in later releases of the digital euro.

A last important point made in this report is that the digital euro will not be programmable money. This means that the ECB would not determine or interfere with where, when and for which purpose the digital euro is used.

Early in the second half of 2023, the Eurosystem will present the overall thinking on how to design a digital euro. Box 1 summarises its thinking so far.

The ECB will also investigate cross-currency functionalities as a way of improving the transparency and efficiency of crossborder payments (as endorsed by the G20). This functionality could be implemented by ensuring interoperability between the digital euro and other CBDCs or by relying on a common infrastructure that could host multiple CBDCs.

5.2 Other advanced economies' approaches to CBDCs

Several countries are more advanced than the euro area in this process and have decided not to issue a retail CBDC in the foreseeable future. This is mainly because they do not see CBDCs as offering added value in terms of payment options or to their citizens.

This is the situation in Canada[23], Denmark (Danmarks Nationalbank, 2022), Japan[24], Sweden (Swedish Government, 2023) and Switzerland[25]. In the United Kingdom, the Chair of the House of Lords Economic Affair Committee argued that a CBDC was *"a solution in search of a problem."*

Similarly to the euro area, the US is still investigating whether to issue a retail CBDC, but is finding it difficult to justify it. In April 2023, Fed Governor Michelle W Bowman said *"it is difficult to imagine a world where the trade-offs between benefits and unintended consequences could justify a direct access CBDC for uses beyond interbank and wholesale transactions"* (Bowman, 2023).

Box 1. The ECB's thinking on the retail digital euro

- Target users: Primarily euro area residents (individuals, merchants and governments). Possible extension of access to non-residents.

- Intended as: means of payment and not form of investment (avoid excessive migration of bank deposits to the central bank). It will not be remunerated.

- Availability: both online and offline solutions envisaged.

- Limits: €1 trillion to 1.5 trillion total, meaning around €3,000 to €4,000 digital euro per capita. Limits apply to individuals, who can have only one account. Merchants would not have digital-euro holdings but would accept payments in digital euros.

- Privacy: the digital euro should replicate as much as possible cash-like features, but no full anonymity. Possibly, greater privacy for low-value low-risk payments.

- Issue and settlement: responsibility of the Eurosystem; digital euro is direct liability of the central bank (convertible one to one with the euro).

- Onboarding, distribution and services: responsibility of banks and other payment service providers (supervised financial intermediaries). These would perform the regular onboarding procedures (eg. anti-money laundering checks) and can develop consumer-oriented services beyond the core mandatory functionalities.

- Access and use: via existing apps provided by the PSPs or via an Eurosystem app. Payments done using technology such as contactless or QR code.

This does not mean, however, that their respective central banks are not investigating and preparing for a possible future launch, should the conditions and assessment change. Importantly, the idea of a wholesale CBDC is being pursued by some.

For instance, Switzerland is participating in various projects focused on better understanding the wholesale potential: 'Project Helvetia', a collaboration between the Swiss National Bank, the BIS and SIX, a commercial infrastructure operator, and 'Project Jura', which the Banque de France has also joined. Other countries, including the UK and the US, have expressed their potential interest in a wholesale CBDC.

It is important to note that the decision to issue a CBDC is ultimately political, mostly taken by the respective governments, rather than the central bank. Governments' positions can change over time, as developments of CBDCs in other countries advance and they gain a better understanding of the operational, legal, financial and economic implications of CBDCs (whether retail or wholesale).

5.3 The future of the digital euro

A digital euro for wholesale purposes has substantial potential for reducing frictions in crossborder (ie. beyond the euro area borders) payments. As explained earlier, these improvements could bring a fundamental change in the international financial settlement system.

Governance will be crucial. Legal issues, economic choices and technical uniformity would all need to be agreed at global level for CBDCs to challenge the status quo in global wholesale payments. But the Eurosystem cannot afford to be left out of this debate.

Moreover, as the ECB has invested in understanding the workings of CBDCs, it is well placed to contribute to setting the global standard and helping promote global coordination. As a standard-setter, the EU could exert influence as societies adapt to an increasingly digitalised financial ecosystem. As an active participant and contributor to the debate, the EU should aim to protect its global interests.

When it comes to using a digital euro for retail purposes inside the euro area, we do not see a compelling case for issuance at this stage. There are many issues to clarify, and a digital euro might bring significant changes to the financial system that need to be considered carefully.

Privacy vs anonymity
In response to the public's concerns about privacy, the ECB has been very clear about protecting consumer data when using the digital euro. However, privacy is not the same as anonymity and the ECB is also clear that transacting in digital euros will not be anonymous. This makes the digital euro only an imperfect substitute for cash.

As 42 percent (Figure 3) of the value of all transactions in the euro area in 2022 was in cash, there is still a great deal of anonymity in the way that payments are made currently. As one of the motivations for launching CBDCs was the need to provide a digital equivalent of cash, this is a clear shortcoming.

Cash as the anchor of the financial system
Would the elimination of cash in the future destabilise the system? It is often argued that cash is the anchor of trust in the financial system. In a world of fiat money, deposits are only partly guaranteed. For the consumer, the only other money guaranteed in full by the sovereign is cash. Being able to revert to cash at any time is what provides trust in the system.

Can a CBDC that is also guaranteed in full provide the equivalent anchor to the system? The answer to this is important and citizens will need to be assured that digital money is at the very least not programmable (ie. money with built-in rules that impose restrictions on how it is used).

Also, it is difficult to see how digital cash can provide the anchor to the system if consumers are allowed to have only limited holdings of CBDCs (see below).

Limited holdings
If the amount of digital euros allowed per person is small, as is currently the intention (between €3,000 and €4,000 per person), then the digital euro risks never taking off. Why would the euro area consumer opt to have one more account, this time at the central bank, if it is only of limited use? The amount allowed would need to be at least equal to the amount in deposits that is currently guaranteed (€100,000) for the consumer to have a motive to switch.

Moreover, the consumer has ample payment alternatives in the euro area. If the worry is that payment alternatives are country-specific, then imposed coordination (like the IBAN system for bank deposits) would provide an adequate solution. Regulation therefore can achieve the same result with much less effort.

If on the other hand, the ECB were to allow unlimited amounts of digital euros to be held in the form of deposits, that could potentially be a game changer. Having all deposits guaranteed by the state is an attractive proposition for the consumer.

But for her to switch, she would still need to see interest paid on these deposit accounts, or she would be left worse off. But interest-bearing deposits at the central bank would transform the roles of both the central banks and financial intermediaries.

Commercial banks, which are currently mainly funded by deposits, would have to find alternative operating models. What would be the cost to the system of providing such a guarantee? Or would the amount of money in circulation necessarily have to decrease?

The ECB and other central banks have not justified their interest in CBDCs as a way of altering the financial system. Rather, their thinking focuses on imposing as small a distortion as possible. With that in mind, digital euro holdings would remain very small.

European strategic autonomy

Last, the ECB also uses the argument of strategic autonomy to justify its interest in the project. What is the risk in current European payment systems that requires intervention? An ECB report on open strategic autonomy from a central banking perspective (ECB, 2023) mentioned that *"non-European payment-related service providers handle around 70% of European card payment transactions."*

A retail CBDC could address this concern though, as explained above, it might also distort competition and innovation in domestic payment systems. The strategic autonomy argument adds a layer of protectionism that would need to be very carefully justified economically and politically, or risk going against the EU's own principles.

De-risking is a much better argument: asking the question of how a digital equivalent of the sovereign currency can prepare society for what cannot be controlled (eg. a system that is potentially fully digitalised and where the global appeal of CBDCs is high).

Communication gap

There is still a gap in the public's understanding of the extent to which a digital euro is a useful innovation. The ECB

needs to take time to explain the reasons for the digital euro in ways that will make a tangible difference to public perceptions.

Without public support, the project will not take off. Evidence from countries that have launched CBDCs highlights the importance of clear understanding among citizens. In the meantime, the efforts the ECB has made to understand the complexities of a digital euro are very useful.

6 Conclusions

With 114 central banks worldwide at some stage of developing a digital equivalent of their sovereign currency, it is difficult to believe that the idea will not take off or that there is no added value in having a CBDC. However, there is a gap between central banks' motivations for launching CBDCs and the general understanding of what that motivation is.

Central banks in countries where financial exclusion is a first-order problem are keen to use CBDCs to provide wide access to payments. But this is not useful if there is insufficient digital infrastructure and penetration in the country.

Moreover, if the underlying sovereign currencies are weak and the institutions behind them lack credibility, the digital representation of the currency is not necessarily the tool for building trust.

Nevertheless, inclusion and protecting consumers from the pitfalls of cryptocurrencies are good societal objectives that can provide visible welfare improvements.

But for countries or jurisdictions (like the euro area) where these problems are much less prevalent, the case for establishing a retail CBDC is not strong. That does not necessarily devalue the efforts to understand the choices and trade-offs that must be considered in the process of creating a CBDC.

Moreover, as an attempt to prepare for a future in which the global financial system is more digitalised or there is a need to rethink intermediation, the ECB's efforts are worthy investments.

However, more efforts should be made in terms of creating wholesale CBDCs to facilitate cross-border payments outside the euro area. There are immediate and sizeable savings to be had in both time and costs. Wholesale CBDCs also have the potential to change the international financial system and therefore the EU's position in it.

From the perspective of the US (and to a lesser extent the EU), as more countries seek to create wholesale CBDCs, the greater the threat of a fragmented global financial system, with other currencies taking a more prominent role.

It may be early days, but the EU must explore how to reap the benefits of new technology in wholesale payments, while protecting the global cooperation from which it benefits. Given the work it has already done on the retail digital euro and the EU's very advanced payment methods, the ECB is uniquely positioned to help create the global standard, and in the process to help protect the EU's global strategic interests. ■

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Endnotes

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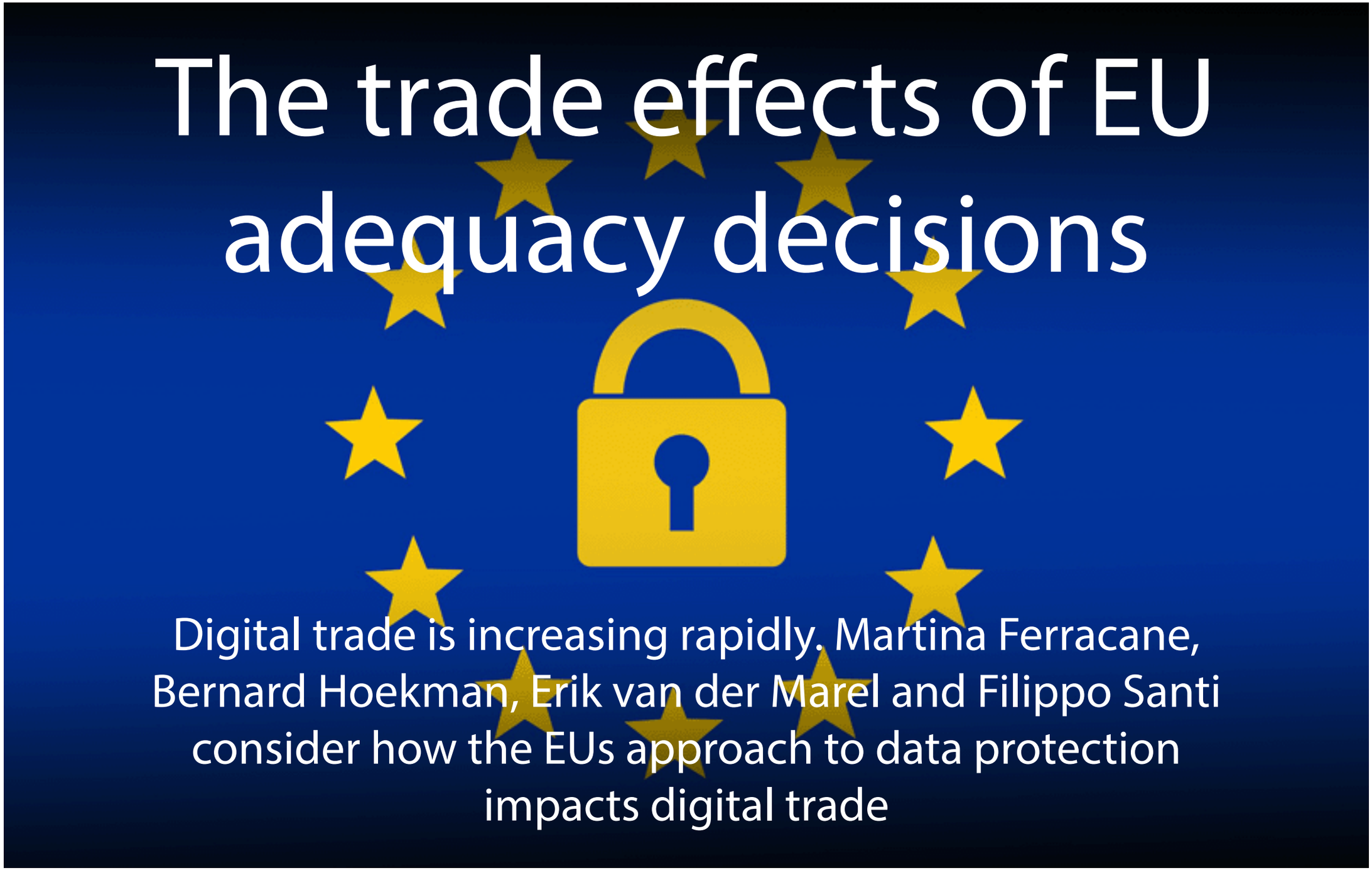
The trade effects of EU adequacy decisions



Digital trade is increasing rapidly. Martina Ferracane, Bernard Hoekman, Erik van der Marel and Filippo Santi consider how the EUs approach to data protection impacts digital trade

Policymakers need to balance societal demands to protect data privacy against potential adverse effects on productivity, innovation, and trade. This column analyses the trade impact of the European Commission's determinations that data protection regulation in a partner country is equivalent to that of the EU, permitting personal data to flow freely to and from the EU.

It finds that such decisions increase digital trade by 6% to 14%, with a suggestive club effect for 'adequate' countries. The results are mainly driven by the two adequacy decisions granted to the US, revealing the importance of transatlantic mutual recognition for digital trade.

Digital trade is a fast-growing part of the world economy, accounting for 12% to 22% of world trade, depending on the definition of digital goods and services. Growth rates of digital-based services associated with crossborder data flows over online networks have been outpacing all other types of trade (WTO 2023). Such trade is subject to regulations, including requirements pertaining to the protection of personal data crossing borders.

In a previous Vox column, two of us found that the EU's approach to personal data protection impacts digital trade in different directions (Ferracane and van der Marel 2021). Stronger rights for data subjects at the domestic level are positively associated with digital trade because of increased trust in the digital economy and lower regulatory heterogeneity.

On the other hand, the conditional model applied to transfer data across borders did not show any clear impact on trade. One potential explanation is that, while the EU model applies costly conditions for the transfers of data, these conditions do not apply to trading partners that implement 'adequate' protection to personal data[1].

The EU can determine whether a third country offers an adequate level of data protection. A positive evaluation requires that countries have a data protection regime 'essentially equivalent' to the European one. Between 2000 and 2021, the EU granted adequacy to 15 states or territories.

If EU member countries fail to approve a transatlantic adequacy agreement later this year it is likely to come at a significant cost

The two decisions pertaining to the US represented an exception as adequacy was granted only to those companies that certify to comply to certain privacy principles and associated requirements.

If adequacy is granted, personal data can flow freely from the EU (and Norway, Lichtenstein, and Iceland) to the adequate country, akin to intra-EU data flows. Absent an adequacy decision, companies that want to process data outside the EU are required to rely on (often expensive) mechanisms such as Binding Corporate Rules (BCRs) and Standard Contractual Clauses (SCCs), or exceptionally on derogations for instances when consent is obtained from data subjects for every crossborder transfer of personal data.

In our recent paper (Ferracane *et al* 2023) we use a structural gravity model to assess the trade effects of EU adequacy decisions and show how they affect digital trade between the EU and third countries. Our empirical model applies a three-way fixed effects approach and controls for all other possible digital-relevant bilateral covariates, including preferential trade agreements (PTAs) and other enforceable data flow arrangements.

As a robustness check we also select all PTAs with data privacy provisions within a digital trade chapter as a control variable instead of our broader preferential trade agreement variable.

In addition to the demanding set of fixed effects, we capture potential trend effects that are specific to a country-pair reflecting other digital integration factors, such as increasing bilateral crossborder data flows.

These effects control for any higher-than-average change in the trend of bilateral digital trade during the sample period relative to countries without adequacy.

We construct four alternative measures of digital trade given there is no generally accepted definition. The first is the category of 'Information industries' in the OECD Trade in Value-Added (TiVA) database, which covers information and communications technology (ICT) goods plus core digital services: IT and information, publishing, and telecom services. We then progressively expand on this by adding business and professional services, financial services, restaurants, accommodation, health, and education services.

We motivate the inclusion of sectors based on three different procedures. The first builds on a proxy for digital intensity used by Ferracane and van der Marel (2021) that measures the ratio of sectoral software expenditures to labour costs using US Census and US Bureau of Labor Statistics data.

The second is based on the list of companies that registered under the Privacy Shield Framework maintained by the US Department of Commerce. We compute sectoral shares using information on the primary sector of activity of each firm and compare the sectoral shares of covered companies to all US firms using the US Census, giving an indication of the relative importance of Privacy Shield (and thus crossborder data flows) for each services sector.

The third source of information is the *OECD-WTO-IMF Handbook on Measuring Digital Trade* (OECD-WTO-IMF 2020) which distinguishes between digitally ordered and digitally delivered products and the associated sector of activity. We use the latter category to broaden the scope of the digital sectors considered in the analysis. Altogether, our four definitions range from a narrow to a very broad set of digital goods and services.

We find that the EU adequacy decisions positively affect digital trade between the EU and third countries. This positive trade effect is bounded by one country, namely, the US. The two specific types of adequacy decisions the US received by the EU were both repealed by the European Court of Justice (ECJ).

Currently, no adequacy decision exists between the two trading partners, even though a political agreement has been found. Our findings suggest that the lack of an EU-US adequacy decision entails foregone trade gains. In our empirical gravity model, we estimate that a potential transatlantic data deal could enhance digital trade up to 16%.

Aside from ICT sectors, such an agreement would benefit other data-intensive sectors, ranging from business services to media entertainment and finance to travel, as well as education and health.

Beyond the two transatlantic partners, other adequacy-receiving countries appear to have benefitted indirectly from the two decisions granted to the US. This is because their digital exports to the US market started to grow as soon as a transatlantic data deal was put in place – a result we call a 'club effect'. This may reflect the fact that global supply chains in both digital goods and services are spread across many countries.

If US firms outsource their data-based activities to third countries with an adequacy determination, the trade cost of doing so is lower as no additional safeguards are required.

Insofar as this is the case, our results suggest that the two previous adequacy decisions agreed between the EU and the US had an impact on the composition of digital trade within supply chains: about 7% of digital value-added trade shifted toward the network of countries with adequacy, away from being previously sourced from countries without adequacy (or from the domestic market).

The relationship between adequacy and digital trade might be country specific, with any positive association driven in part by the characteristics of the country considered and those it trades with. To consider such potential country-specificity, we use a synthetic control approach.

In the case of Argentina, which was granted adequacy by the EU in 2003, we use other Spanish-speaking countries in our sample to simulate Argentina's digital trade performance had the country not obtained an adequacy decision.

While digital trade shows an upward trend for both Argentina and its synthetic control group, we find that the adequacy decision had a significant positive impact on Argentina's digital trade with other countries that also have adequacy status, particularly the US. This outcome corroborates our gravity findings.

Earlier this year, the European Parliament recommended rejecting the European Commission's proposal for a new adequacy agreement with the US. The Parliament's Committee on Civil Liberties, Justice and Home Affairs deemed the level of protection in the new EU–US Data Privacy Framework to fall short of equivalence.

If EU member countries fail to approve a transatlantic adequacy agreement later this year it is likely to come at a significant cost. Such costs may go beyond the estimates we obtain in our study.

The recent record-breaking €1.2 billion fine imposed on Meta Platforms Ireland Inc. puts into question the use of standard contractual clauses (SCCs), the default option for firms located in jurisdictions where there is no adequacy arrangement with the EU.

Yet another rejection of transatlantic data adequacy in conjunction with uncertainty regarding whether standard contractual clauses can be used by individual companies as a substitute may induce either an exit from the EU market or a switch to facilities that process personal data within the EU.

Both outcomes can be expected to be associated with higher costs, with the latter more likely to be feasible for large companies than small and medium enterprises (SMEs), as suggested by the findings in Johnson *et al* (2023) that implementation of the GDPR resulted in an increase in the relative concentration of the website vendor market, with the effect persisting over time in the advertising vendor category most scrutinised by regulators. ■

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Endnote

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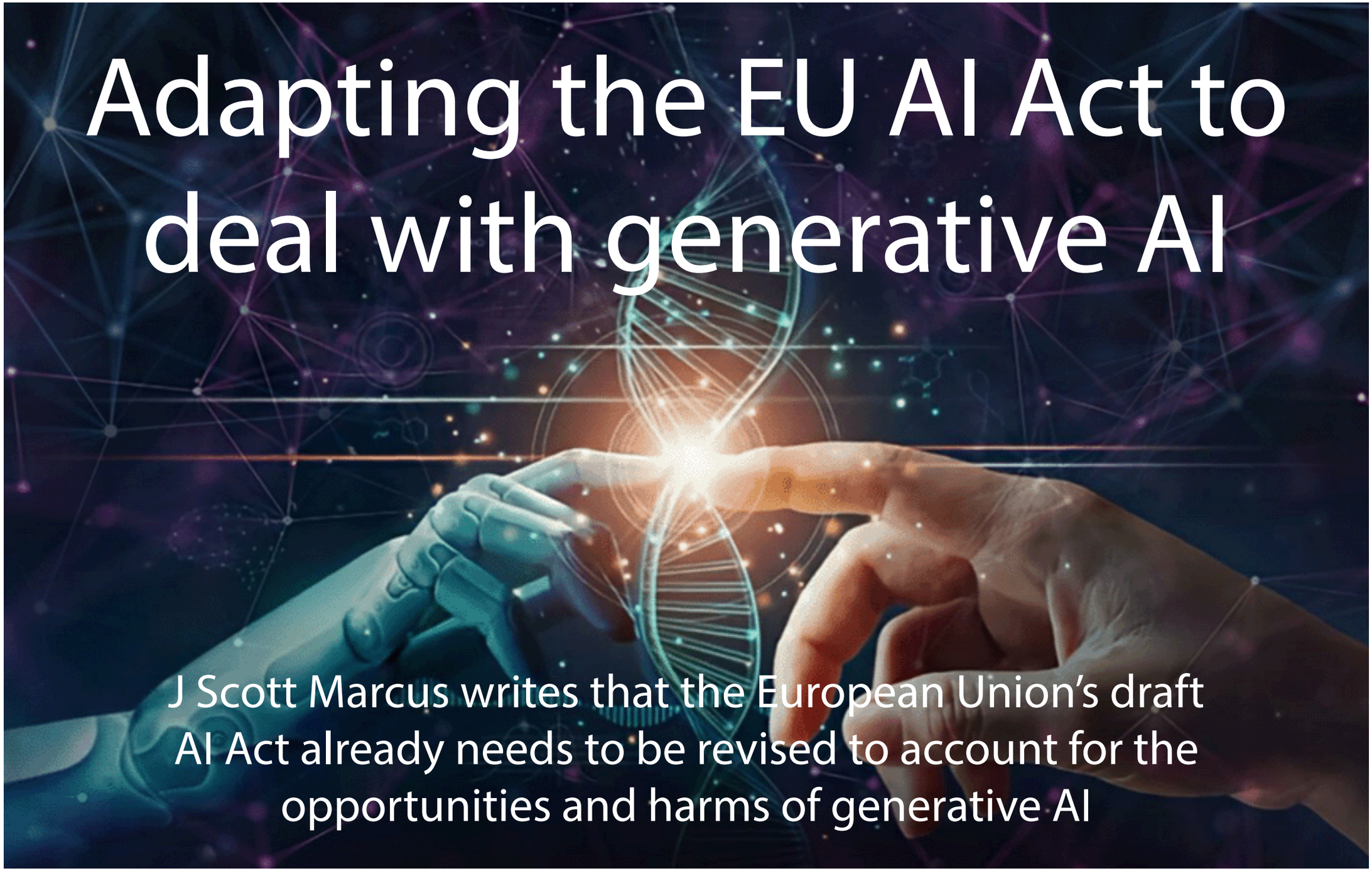
Adapting the EU AI Act to deal with generative AI



J Scott Marcus writes that the European Union's draft AI Act already needs to be revised to account for the opportunities and harms of generative AI

When the European Commission in April 2021 proposed an AI Act to establish harmonised EU-wide harmonised rules for artificial intelligence, the draft law might have seemed appropriate for the state of the art. But it did not anticipate OpenAI's release of the ChatGPT chatbot, which has demonstrated that AI can generate text at a level similar to what humans can achieve. ChatGPT is perhaps the best-known example of generative AI, which can be used to create texts, images, videos and other content.

Generative AI might hold enormous promise, but its risks have also been flagged up[1]. These include (1) sophisticated disinformation (eg. deep fakes or fake news) that could manipulate public opinion, (2) intentional exploitation of minorities and vulnerable groups, (3) historical and other biases in the data used to train generative AI models that replicate stereotypes and could lead to output such as hate speech, (4) encouraging the user to perform harmful or self-harming activities, (5) job losses in certain sectors where AI could replace humans, (6) 'hallucinations' or false replies, which generative AI can articulate very convincingly, (7) huge computing demands and high energy use, (8) misuse by organised crime or terrorist groups, and finally, (9) the use of copyrighted content as training data without payment of royalties.

To address those potential harms, it will be necessary to come to terms with the foundation models that underlie generative AI. Foundation models, or models through which machines learn from data, are typically trained on vast quantities of unlabelled data, from which they infer patterns without human supervision. This unsupervised learning enables foundation models to exhibit capabilities beyond those originally envisioned by their developers (often referred to as 'emergent capabilities').

The evolving AI Act

The proposed AI Act (European Commission, 2021), which at time of writing is still to be finalised between the EU

institutions[2], is a poor fit for foundation models. It is structured around the idea that each AI application can be allocated to a risk category based on its intended use.

This structure largely reflects traditional EU product liability legislation, in which a product has a single, well-defined purpose. Foundation models however can easily be customised to a great many potential uses, each of which has its own risk characteristics.

The EU is likely to be a major deployer of generative AI. This market power may help ensure that the technology evolves in ways that accord with EU values

In the ongoing legislative work to amend the text, the European Parliament has proposed that providers of foundation models perform basic due diligence on their offerings. In particular, this should include:

- Risk identification. Even though it is not possible to identify in advance all potential use cases of a foundation model, providers are typically aware of certain vectors of risk. OpenAI knew, for instance, that the training dataset for GPT-4 featured certain language biases because over 60 percent of all websites are in English. The European Parliament would make it mandatory to identify and mitigate reasonably foreseeable risks, in this case inaccuracy and discrimination, with the support of independent experts.

- Testing. Providers should seek to ensure that foundation models achieve appropriate levels of performance, predictability, interpretability, safety and cybersecurity. Since the foundation model functions as a building block for many downstream AI systems, it should meet certain minimum standards.

- Documentation. Providers of foundation models would be required to provide substantial documentation and intelligible usage instructions. This is essential not only to help downstream AI system providers better understand what exactly they are refining or fine-tuning, but also to enable them to comply with any regulatory requirements.

Room for improvement

These new obligations, if adopted in the final AI Act, would be positive steps, but lack detail and clarity, and would consequently rely heavily on harmonised standards, benchmarking and guidelines from the European Commission. They also risk being excessively burdensome. A number of further modifications could be put in place.

Risk-based approach

Applying all obligations to the full extent to every foundation model provider, both large and small, is unnecessary. It might impede innovation and would consolidate the market dominance of firms that already have a considerable lead in FMs, including OpenAI, Anthropic and Google Deepmind[3].

Even without additional regulatory burdens, it might be very hard for any companies outside of this group to match the resources and catch up with the FM market leaders.

A distinction could therefore be made between systemically important and non-systemically important FMs, with significantly lower burdens for the latter. This would be in line with the approach taken by the EU Digital Services Act (DSA), which notes that *"it is important that the due diligence obligations are adapted to the type, size and nature of the … service concerned."*

The DSA imposes much more stringent obligations on certain service providers than on others, notably by singling out very large online platforms (VLOPs) and very large online search engines (VLOEs).

There are two reasons for differentiating between systemic and non-systemic foundation models and only imposing the full weight of mandatory obligations on the former. First, the firms developing systemic foundation models (SFMs) will tend to be larger, and better able to afford the cost of intense regulatory compliance. Second, the damage caused by any deviation by a small firm with a small number of customers will tend to be far less than that potentially caused by an SFM.

There are useful hints in the literature (Bommasani *et al* 2023; Zenner, 2023) as to criteria that might be used to identify SFMs, such as the data sources used, or the computing resources required to initially train the model. These will be known in advance, as will the amount of money invested in the FM.

These pre-market parameters presumably correlate somewhat with the future systemic importance of a particular FM and will likely also correlate with the ability of the provider to invest in regulatory compliance.

The degree to which an FM provider employs techniques that facilitate third-party access to their foundation models and thus independent verification, such as the use of open APIs, or open source, or (especially for firms that do not publish their source code) review of the code by independent, vetted experts, might also be taken into account.

Other, post-deployment parameters, including the number of downloads, or use in downstream services or revenues, can only be identified after the product has established itself in the market.

Lesser burdens

Notwithstanding the arguments for a risk-based approach, even small firms might produce FMs that work their way into applications and products that reflect high-risk uses of AI. The principles of risk identification, testing and documentation should therefore apply to all FM providers, including non-systemic foundation models, but the rigour of testing and verification should be different.

Guidance, perhaps from the European Commission, could identify what these reduced testing and verification procedures should be for firms that develop non-systemic foundation models. Obligations for testing, analysis, review and independent verification could be much less burdensome and intensive (but not less than reasonably stringent) for providers of non-systemic FMs.

This kind of differentiation would allow for a more gradual and dynamic regulatory approach to foundation models. The list of SFMs could be adjusted as the market develops. The Commission could also remove models from the list if they no longer qualify as SFMs.

Use of data subject to copyright

Even though the 2019 EU Copyright Directive provides an exception from copyright for text and data mining (Article 4(1) of Directive 2019/790), which would appear in principle to permit the use of copyrighted material for training of FMs, this provision does not appear in practice to have resolved the issue.

The AI Act should amend the Copyright Directive to clarify the permitted uses of copyrighted content for training FMs, and the conditions under which royalties must be paid.

Third-party oversight

The question of third-party oversight is tricky for the regulation of FMs. Is an internal quality management system sufficient? Or do increasingly capable foundation models pose such a great systemic risk that pre-market auditing and post-deployment evaluations by external experts are necessary (with protection for trade secrets)?

Given the scarcity of experts, it will be important to leverage the work of researchers and civil society to identify risks and ensure conformity. A mandatory SFM incident reporting procedure that could draw on an AI incident reporting framework under development at the Organisation for Economic Co-operation and Development[4] might be a good alternative.

Internationally agreed frameworks

Internationally agreed frameworks, technical standards and benchmarks will be needed to identify SFMs. They could also help document their environmental impacts.

Until now, the development of large-scale FMs has demanded enormous amounts of electricity and has the potential to create a large carbon footprint (depending on how the energy is sourced). Common indicators would allow for comparability, helping improve energy efficiency throughout the lifecycle of an SFM.

Safety and security

Providers of SFMs should be obliged to invest heavily in safety and security. Cyberattacks on cutting-edge AI research laboratories pose a major risk; nonetheless, and despite rapidly growing investments in SFMs, the funding for research in AI guardrails and AI alignment is still rather low.

The internal safety of SFMs is crucial to prevent harmful outputs. External security is essential, but it alone will not be sufficient – the possibility of bribes in return for access to models should be reduced as much as possible.

Conclusion

The EU is likely to be a major deployer of generative AI. This market power may help ensure that the technology evolves in ways that accord with EU values.

The AI Act is potentially ground-breaking, but more precision is needed to manage the risks of FMs while not impeding innovation by smaller competitors, especially those in the EU. Unless these issues are taken into account in the finalisation of the AI Act, there is a risk of significantly handicapping the EU's own AI developers while failing to install the adequate safeguards. ■

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Endnotes

1. See for example Bender et al 2021; Bommasani et al 2021; OECD, 2023.

2. See https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-regulation-on-artificial-intelligence

3. On competition issues raised by foundation models, see Carugati (2023).

4. See https://oecd.ai/en/network-of-experts/working-group/10836

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The impact of artificial intelligence on growth and employment

Ethan Ilzetzki and Suryaansh Jain discuss the results of the May 2023 CfM-CEPR survey, where panellists were asked to predict the impact of AI on the global economy

The use of artificial intelligence for day-to-day tasks has increased rapidly over the last decade. The May 2023 CfM-CEPR survey asked the members of its European panel to predict the impact of AI on global economic growth and unemployment rates in high-income countries over the upcoming decade.

Most panellists think that AI is likely to boost global growth to 4–6% per annum (relative to an average of 4% over the past few decades). Most of the panel also believes that AI is unlikely to affect employment rates in high-income countries, with the remainder split between predicting an increase and a decrease in unemployment rates. Notably, most panellists indicate a great degree of uncertainty regarding their predictions, because AI is still in its infancy.

At the 2023 World Economic Forum, tech entrepreneur Mihir Shukla noted: *"people keep saying AI is coming but it is already here."* The use of artificial intelligence (AI) for day-to-day tasks has increased rapidly over the last decade and ChatGPT (developed by OpenAI) is a prime example of this, with the popular generative AI used by more than a billion users for everyday tasks like coding and writing.

The speed and scale of AI uptake can be captured by a simple fact: it took ChatGPT just 60 days to reach its 100 millionth user; in contrast, Instagram took two years to reach the same milestone. A recent Stanford University report found that the number of AI patents increased 30-fold between 2015 and 2021 (HAI 2023), highlighting the rapid rate of progress made in the AI development sphere.

AI-powered technologies can now perform a range of tasks, including retrieving information, coordinating logistics, providing financial services, translating complex documents, writing business reports, preparing legal briefs, and even diagnosing diseases.

Moreover, they are likely to improve the efficiency and accuracy of these tasks due to their ability to learn and improve via the use of machine learning (ML).

The McKinsey Global Institute predicts that around 70% of companies will adopt at least one type of AI technology by 2030, and less than half of large companies may use the full range of AI technologies

AI is generally acknowledged to be an engine of productivity and growth. With its ability to process and analyse enormous volumes of data, it has the potential to boost the efficiency of business operations.

The McKinsey Global Institute predicts that around 70% of companies will adopt at least one type of AI technology by 2030, and less than half of large companies may use the full range of AI technologies. Price Waterhouse Coopers predicts that AI could increase global GDP by 14% in 2030 (PwC 2017).

Research into the impact of AI on the labour market has expanded recently. Acemoglu and Restrepo (2018) provide a theoretical framework to understand the impact of new technologies on the labour market.

They decompose the effect of new technologies on labour into three broad effects: a displacement effect, a productivity effect and a reinstatement effect (new technologies can serve as a platform to create new tasks in many service industries, where labour has a comparative advantage relative to machines, boosting labour demand).

Frank *et al* (2019) classify current literature on the labour market implications of AI into two broad categories: a doomsayer's perspective and an optimist's perspective. Doomsayers believe that labour substitution by AI will harm employment. Frey and Osborne (2013) estimate that 47% of total US employment is at risk of losing jobs to automation over the next decade.

Their research reveals that a substantial share of employment in service occupations – where most US job growth has occurred over the past decades – are highly susceptible to computerisation. Bowles (2014) uses Frey and Osborne's (2013) framework to estimate that 54% of EU jobs are at risk of computerisation.

Acemoglu and Restrepo (2017) provide a historical example of excessive automation negatively affecting the labour market due to weak productivity and reinstatement effects, finding that areas in the US most exposed to industrial automation in the 1990s and 2000s experienced large and robust negative effects on employment and wages.

AI is also expected to have a disruptive effect on the composition of the labour market. Autor (2015) presented evidence that the labour market has become polarised over the last few decades towards low-skilled and high-skilled jobs and away from medium-skilled jobs, due to the advent of computers.

However, he stated that this polarisation is likely to be reversed, as some low- and medium-skilled jobs are likely to be relatively resistant to automation, while some highly-skilled but relatively routine jobs may be automatable (potentially with technologies like AI).

Petropoulos and Brekelmans (2020) concluded that unlike the computer and robotic revolution, the AI revolution is unlikely to cause job polarisation as it will affect alter low-skilled, middle-skilled and high-skilled jobs.

Optimists believe that AI's productivity and reinstatement effects will be more than enough to compensate for the substitution effect. Some opinion pieces project that AI and robotics will have created up to 90 million jobs by 2025, indicating a strong positive labour market impact.

The World Economic Forum concluded in October 2020 that while AI would likely take away 85 million jobs globally by 2025, it would also generate 97 million new jobs in fields ranging from big data and machine learning to information security and digital marketing.

Lawrence *et al* (2017) argue that AI automation is unlikely to negatively impact the employment market due to its large positive spillover effects (reinstatement effect), which would counteract the negative direct effects of substitution in the labour market and can be seen as a Schumpeterian 'creative destruction'. They believe that automation is likely to transform, rather than eliminate, work.

In contrast to other studies finding larger negative effects, Arntz *et al* (2016) estimate that only 9% of jobs in the UK are susceptible to automation in the next decade. They argue that instead of substitution, transformation is more likely to occur, with 35% of jobs would change radically in the next two decades.

Nakamura and Zeira (2018) build a task-based theoretical model that shows that automation need not lead to unemployment in the long run. Somers *et al* (2022) conduct a systematic review of the empirical literature on technological change and its impact on employment and find that the number of studies that support the labour substitution effect is more than offset by the number of studies that support the labour-creating/reinstating and real income effects of new technologies.

Moreover, they find that studies that analyse the net employment effect of technological change suggest the net impact of technology on labour to be rather positive than negative, reaffirming this narrative.

Bholat (2020) further notes that job losses in specific sectors due to new technologies have historically been counter-balanced by broad-based gains in aggregate real income as these technologies create higher quality and lower priced goods and services.

This leads to higher disposable income which boosts demand for new products, which in turn, boosts labour demand in such sectors. Alan Manning notes that some of the direst predictions about the impact of automation

on employment during the past decade have not come to pass (Bholat 2020). This may indicate that concerns about the impact of AI on employment are slightly exaggerated.

The May 2023 CfM-CEPR survey asked the members of its panel to forecast the impact of AI on global economic growth and unemployment rates in high-income countries over the upcoming decade. The survey contained two questions.

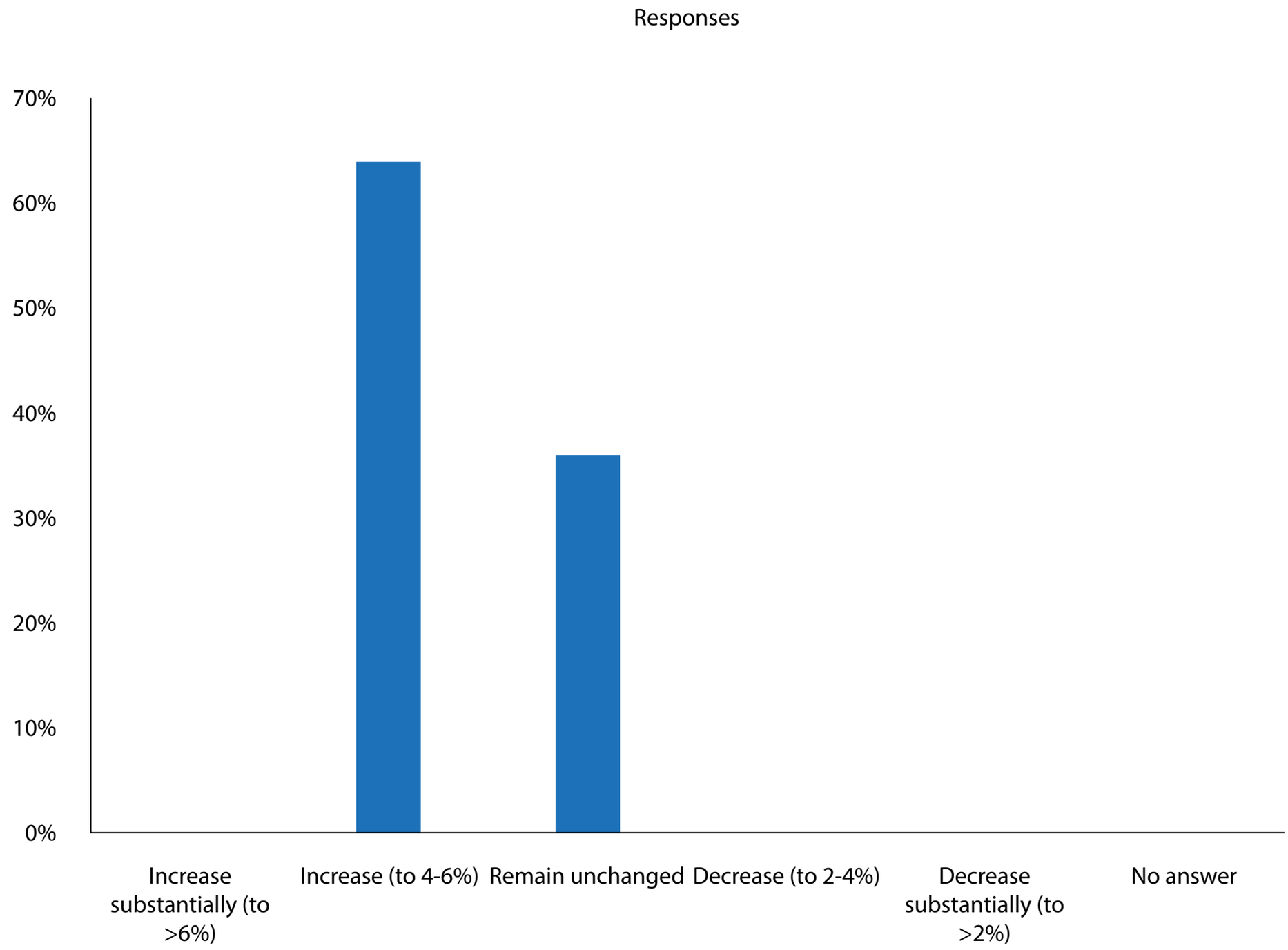
The first asked the panellists to forecast the impact of AI on global economic growth over the upcoming decade. The second asked them to predict the impact of AI on unemployment in high-income countries in the upcoming decade.

Question 1. What will be the implications of recent developments in AI on global economic growth, as they mature over the upcoming decade?

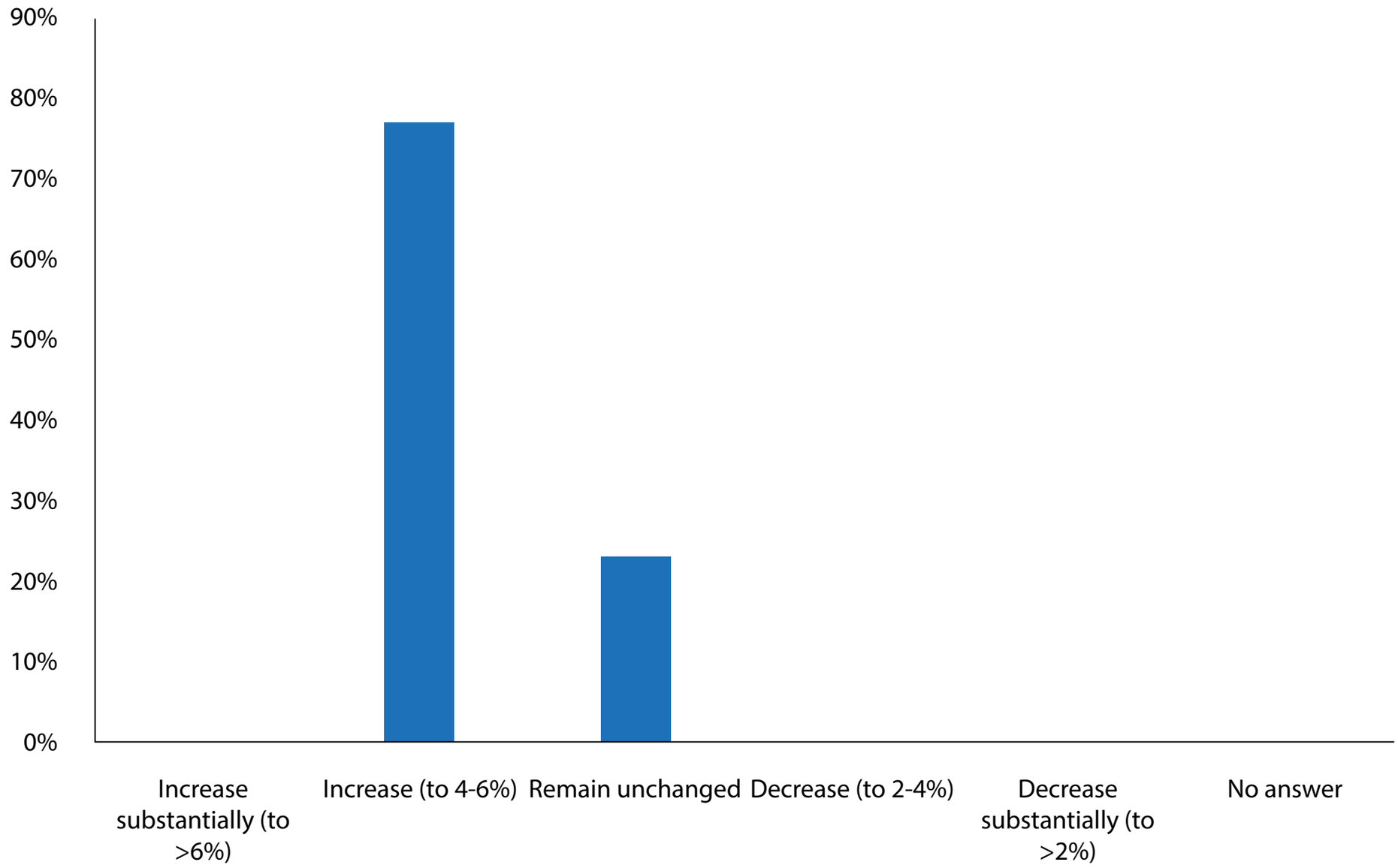
Twenty-seven panel members responded to this question. The majority of the panel (64%) believes that AI will increase global economic growth to 4–6% per annum over the upcoming decade. The remainder of the panel (36%) thinks that AI will have no significant effect on global growth.

Almost two-thirds of the panel believes that the development of AI over the upcoming decade will positively impact economic growth. Jorge Miguel Bravo (Nova School of Business and Economics, Lisbon) cites the widespread uptake of machine learning as a 'general purpose technology' across the developed and developing world as the main reason why he would *"bet on the upside rather than no change or fall."*

Ugo Panizza (The Graduate Institute, Geneva (HEID)) echoes these thoughts, claiming that *"AI will lead to an increase in productivity and thus higher economic growth."* However, he notes some caveats to this prediction, stating that *"AI could increase unemployment and inequality, and this may have backlashes on productivity and growth."*



Responses weighted by experts' self-assessed confidence



Robert Kollmann (Université Libre de Bruxelles) similarly expresses subdued optimism regarding the advent of AI, arguing that it is unlikely to affect the long-term trend growth rate of world GDP, but could boost global growth slightly, by around 0.5.

Most panellists believe that the implications of AI on global economic growth are extremely uncertain, rendering forecasting impossible. Andrea Ferrero (University of Oxford) summarises this view: *"I expect AI to have a significant impact on the economy, but I'm not really sure how. I can imagine that some sectors will benefit more than others, and some may even suffer. The implications for economic growth overall are highly uncertain in my view."*

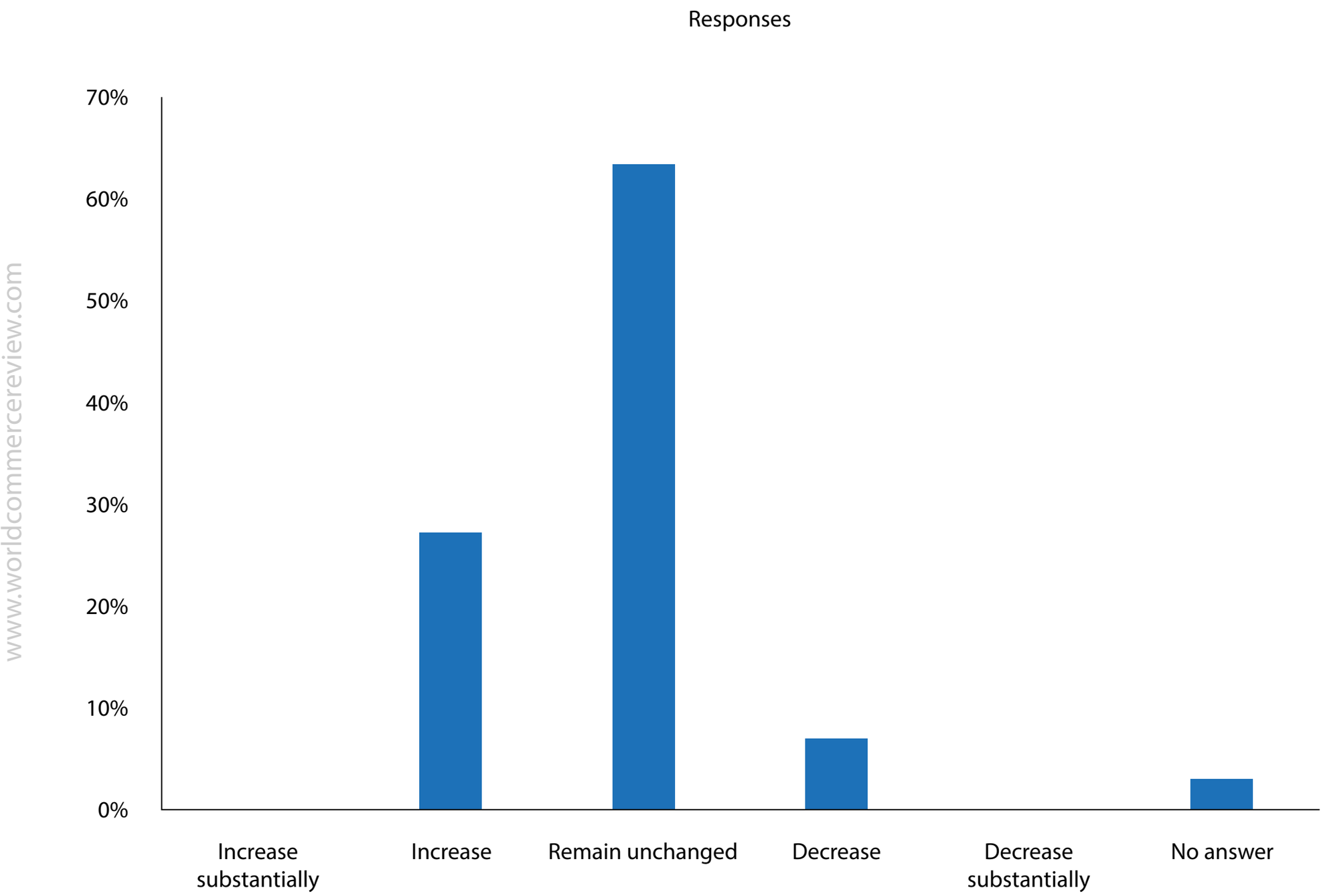
Jagjit Chadha (National Institute of Economic and Social Research) states that the overall impact of AI will depend on several factors – *"which policies are adopted, how monopoly power is challenged and what new ideas are ultimately released"* – and hence, he cannot say what the impact will be *"with any degree of certainty."*

Ricardo Reis (London School of Economics) succinctly summarises the great degree of uncertainty shared by the panel: *"Forecasting future growth over a decade is very hard, so 'not confident' is the most relevant part of this answer."*

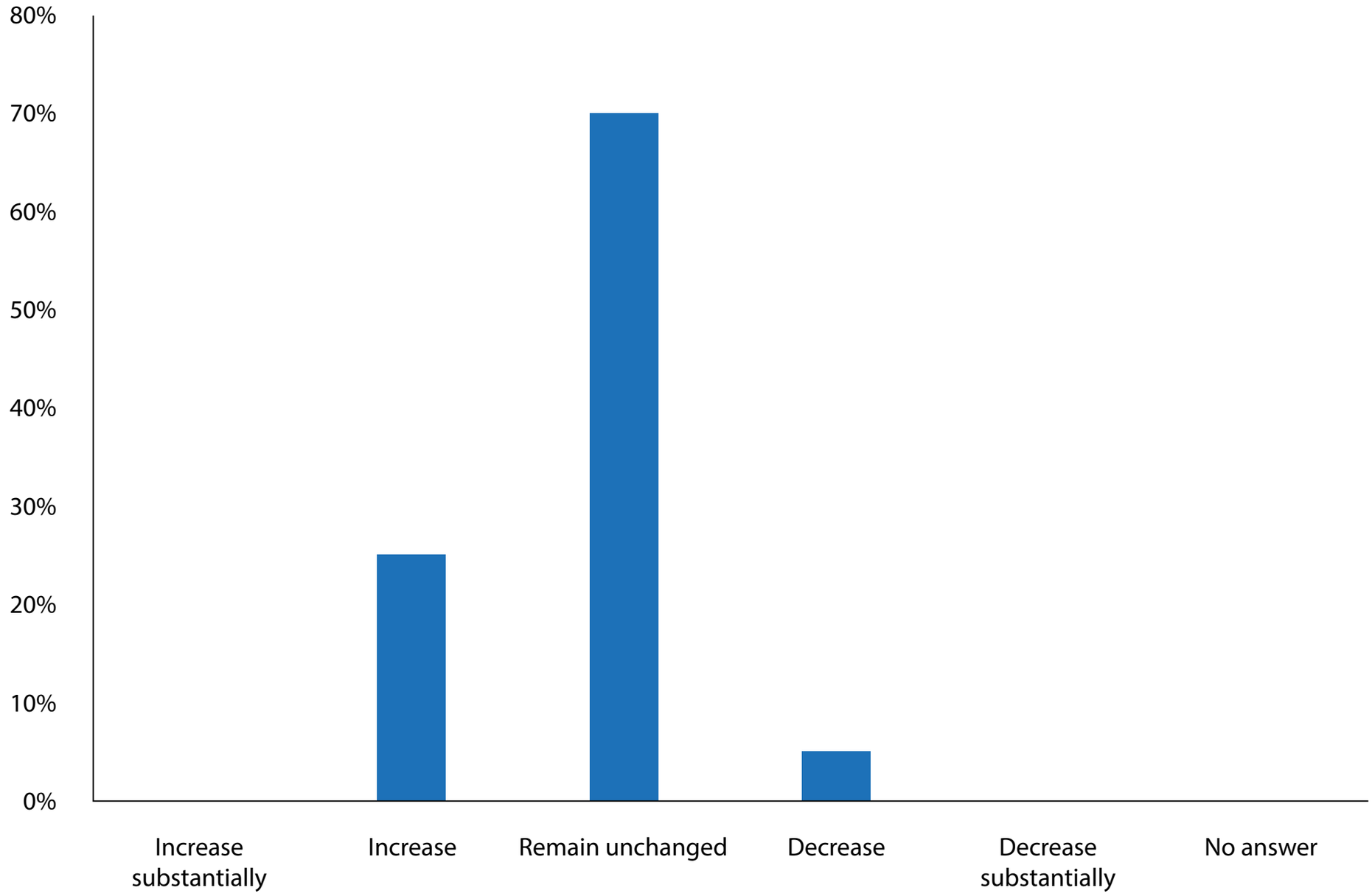
Question 2. What will be the implications of recent developments in AI on unemployment in high-income countries over the upcoming decade?

Twenty-nine panel members responded to this question. Most of the panel (63%) believes that AI will not affect employment rates in high-income countries across the next decade.

The majority of the remainder (27%) think that developments in AI could increase unemployment in high-income countries. Only two panellists believe that AI could decrease unemployment in high-income countries over the upcoming decade.



Responses weighted by experts' self-assessed confidence



Notably, more than half of the panel express a lack of confidence in their responses, indicating the high degree of uncertainty surrounding this question.

Most panellists believe that AI developments are unlikely to impact unemployment in high-income countries over the long run. Michael Wickens (Cardiff Business School and University of York) cites previous technological changes to support this stance: *"The number of jobs and the level of unemployment will not change but the number of hours of work will fall and leisure increase. This is what has happened following past tech[nological] improvements. The same thing will happen with AI."* Echoing this view, Cédric Tille (The Graduate Institute, Geneva) states that *"unemployment effects may be limited"* but notes that *"the impact on income inequality and need for redistribution policy may be large."*

Maria Demertzis (Bruegel) argues that the impact of unemployment could depend on reskilling, stating *"the quicker this [reskilling] happens, the less the impact on unemployment."*

Several panellists indicate uncertainty regarding long-term predictions of the impact of AI on employment. Andrea Ferrero (University of Oxford) highlights this uncertainty: *"I expect unemployment to increase in the short run as human employment in some tasks and jobs becomes obsolete. In the medium run, the supply will adjust and it's possible that AI may even reduce the natural rate of unemployment in the long run. I'm just not sure."*

A fraction of the panel expresses pessimism regarding the impact of AI on the labour market due to its impact on vulnerable groups. Wouter den Haan (London School of Economics) sums up this viewpoint: *"My concern is that AI may be bad for the more vulnerable in the labour markets like the ones who will not be that easy to adapt to a new environment."*

However, a few panel members express an opposing view, claiming that may actually decrease unemployment in high-income countries. Volker Wieland (Goethe University Frankfurt and IMFS) suggests that AI could potentially decrease unemployment rates and the number of hours worked. ■

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A fight for every job: decarbonising Europe's cars

Decarbonising is key to achieving climate neutrality in the EU by 2050. Bela Galgóczi argues that the automotive industry's ability to manage the transformation will have implications for millions of Europeans

The shift to electric cars is gaining momentum, with huge implications for millions of workers. The priority for trade unions is to secure jobs and workers' rights. But what will a just transition mean for Europe's automotive industry amid growing market competition between the EU, the US, and China?

A timeline for the phase-out of petrol-powered cars produced in Europe has now been set. The transition to electric vehicles is part of the European Union's *Fit for 55* package, which aims to reduce the region's net greenhouse gas emissions by at least 55 per cent by 2030 compared to 1990 levels and 100 per cent by 2035 (though with a loophole for synthetic fuels).

Decarbonising road transport – a huge contributor to overall greenhouse gas emissions – is key to achieving climate neutrality in the EU by 2050, a commitment that lies at the heart of the European Green Deal. With deadlines looming, Europe's automobile industries are charting the electrification course rapidly.

This, of course, is good news. The way the transition is taking place, however, is far from ideal. As one of Europe's largest industries – and biggest sources of employment – shifts into gear for major change, new fault lines are emerging. Its ability to grapple with the inevitable conflicts and successfully weather the transformation will have major implications for millions of Europeans.

What's at stake?

The automotive industry is currently facing a range of challenges. Besides undergoing an internal shift to digitalisation, automation, and total value chain reorganisation, it now needs to fast-track a move towards electric vehicles.

This transformation is upsetting the long-standing dominance of industry heavy hitters such as Volkswagen and BMW, and allowing newcomers like Tesla to enter the market in a previously unimaginable way.

To Germany's shock, the Tesla Model Y outsold the Volkswagen Golf in September 2022. Chinese companies like BYD and SAIC Motor are also gaining new ground, making up 6 per cent of EU electric car sales in 2022. This is likely to reach 20 per cent by 2030.

The fact that the automotive industry is not covered by the EU's Just Transition framework is a serious omission that risks deepening an already conflictual and unequally distributed process

It is increasingly clear that past success offers no guarantee of future competitiveness. The EU's potential diminishing dominance in this global industry is set into sharp relief in this new era of deglobalisation, with pandemic-induced supply chain disruptions and the end of the rules-based post-World War II international order – accelerated by Russia's invasion of Ukraine – raising the geopolitical stakes even higher.

In the European Union, the automotive sector is directly responsible for 2.6 million jobs. With 13.8 million direct and indirect jobs as a whole, it accounts for more than 6 per cent of total European employment.

Forecasts on how electrification will affect these jobs depend on their scope and assumptions, but most predict major job losses in the manufacturing segment – between 275,000 and 410,000 by 2040 according to a 2021 study by the European Association of Automotive Suppliers. This may be partly compensated by increasing value added from electronics, autonomous drive systems, and electric charging infrastructure.

According to a study published in 2021 by the Boston Consulting Group, up to three million industry jobs will also be fundamentally transformed in terms of the skills required, place of work, contract type, and working conditions.

These forecasts assume that new car sales will remain stable – but this cannot be taken for granted. Ever fewer new cars are sold each year, and stability in sales revenues is only due to them getting larger and more expensive.

This assumption also reveals how many industry players see automotive electrification: not as part of a wider decarbonisation of transport that includes fewer cars and better mass transit, but simply as the replacement of the combustion engine with an electric one.

Media concern has focused on possible employment loss due to electrification. The greatest risk, however, is missing the train. Slowing down the mobility transition at this stage would undermine European competitiveness and result in greater job losses in the long term. At this point, focusing on aggregate job gains or losses is therefore less important than helping European companies, regions, and workers navigate the transition.

It is also important to understand that, even if overall automotive employment in Europe remains relatively constant, European manufacturers and regions – from the generalist volume producers in France and Italy to Germany's premium manufacturers and the central and eastern European supply chain – will experience the transition in vastly different ways.

While all major regions saw a decrease in the number of new cars sold between 2000 and 2019, Germany only saw a 9 per cent reduction, whereas Italian sales dropped by 51 per cent. In the same period, employment in the sector rose by 3 per cent in Germany but plummeted by 43 per cent in France. The car industry in central and eastern Europe – boosted in past decades by foreign direct investment – is a special case.

It's cheap and flexible workforce offers a competitive advantage, but the industry's future here remains uncertain. The region has the oldest, most polluting, and fastest-growing car fleets in Europe and a population largely unable to afford electric vehicles. More problematically, its unions are weaker and often not internationally affiliated.

These workers and plants have less bargaining power and are particularly vulnerable to decisions made elsewhere. Also a problem is the industry's continuing 'upmarket drift' – the production of heavier, faster, and more expensive battery electric vehicles and plug-in hybrids that, among other issues, need larger batteries – which is putting a strain on critical material use.

The trade union perspective

The primary focus of Europe's automotive trade unions is clearly to secure jobs and workers' rights as the industry navigates the green transition, but individual unions play different roles depending on their scope. Workplace unions within specific plants or companies tend to prioritise the short-term goals of their members.

By contrast, higher-level trade unions with a more national or international outlook and at one level removed from the immediate concerns of workers – such as the European Trade Union Confederation (ETUC) – are more likely to situate the interests of their members within long-term societal goals such as the need for environmental policies and political participation.

In the industrial relations literature, trade union responses to the green transformation can be grouped into three categories: opposition, hedging, and support. In contrast to an uncompromising opposition to climate change mitigation, hedging strategies accept the need for emissions reduction policies but seek to minimise environmental regulation. Support strategies are in favour of climate mitigation and take a proactive stance on decarbonisation.

Over the last decades, trade unions have developed their ability to challenge profit-driven changes imposed by capital. The changes proposed under the green transition are of a different ilk: they are policy driven and serve the public interest.

Instead of questioning or impeding the necessary restructuring, trade unions must become drivers of this change while working to manage its consequences. This is a huge challenge, and one exacerbated by the capital-labour conflict.

Even if unions agree with the long-term objective of the restructuring process, proposed changes such as reducing jobs and lowering conditions can resemble the profit-maximising efforts that unions usually resist on their members' behalf.

On top of that, precarious jobs with less security make up a large and growing share of posts. Such jobs have historically borne the costs and risks associated with change, making it both harder to protect them and to get these workers on board with restructuring.

This asymmetry of power, alongside a growing recognition of the importance of climate and environmental objectives, has led to trade unions becoming the drivers behind the 'just transition' concept. In 2018, global manufacturing union IndustriALL and others called for balanced emissions reductions that take employment and social aspects into account and for a just transition fund for industry.

Industry stakeholders can exert considerable power at policy-making level. Employer associations – the owners' and managers' versions of trade unions – have been playing a controversial role in lobbying for lighter regulation on car emission standards.

The 2015 Dieselgate scandal – which uncovered that manufacturers such as Volkswagen had installed defeat devices allowing cars to cheat pollution controls – shows how the industry has tried to evade regulation after failing to prevent it.

In the run-up to the European Council's 2018 adoption of a 35 per cent reduction in car CO_2 emissions by 2030, both unions and employers' associations supported the German government's push for a lighter 30 per cent target. With the *Fit for 55* package, the cut increased to 55 per cent for cars and 50 per cent for vans by 2030, rising to 100 per cent by 2035.

In 2021, German automotive association VDA opposed the phasing out of the combustion engine, and IndustriALL has also expressed concerns about fast-track electrification.

But things are changing. Germany's largest trade union, metalworkers' union IG Metall, has revised its previously cautious approach and embarked on a fast-track transition. And in 2022, European-level trade unions launched an urgent appeal calling on policymakers to support the automotive sector in implementing a just transition.

The sector as a whole is not currently included in the EU's Just Transition Mechanism – set up to *"ensure that the transition towards a climate-neutral economy happens in a fair way"* – as the latter is limited to carbon-intensive regions, while the prospective Social Climate Fund will primarily aim to balance the regressive effects of the Emissions Trading System (ETS2).

Looking at individual plants

For an insight into the conflicts and negotiations taking place within individual plants and companies, we can turn to Germany's car industry. There, 'works councils' (Betriebsräte) represent the workforce at plant level and are actively co-managing the transition in order to protect employees.

In 2017, the General Works Council of Daimler, which has the right to be advised of future strategies and make proposals, reached an agreement on Project Future, the company's restructuring plan. This agreement protects all Daimler employees in Germany – including those in logistics and branch offices – from operational dismissal until 2029, though without precluding changes to employees' workload and responsibilities.

There has nevertheless been a protracted fight for each individual job and production location, taking place within a web of opposing interests operating at different levels: between capital and labour, management and the works council, and different locations both within and outside of Germany.

For example, in 2020 the Daimler management launched a massive restructuring programme to 'optimise' its global production network. With this came the announcement of 30,000 job losses worldwide, putting the viability of several plants in question. The French Daimler subsidiary that produced the Smart brand was sold, and the manufacturing of the new electric Smart moved to China.

Daimler's attempt to end production of the V6 diesel engine at its oldest plant in Berlin created a major conflict; after a year of negotiations by the works council, it was decided that the site will manufacture electric motors as part of a restructuring plan.

Volkswagen is grappling with similar internal struggles. Within its 2016 *Pact for the Future*, the company announced that although new technologies and products would create 9,000 jobs, 25,000 would be lost. The pact includes a works-council-negotiated job security agreement up to 2025 and secured commitments to keep the production of new e-mobility components in Germany.

The agreement, which applies to 120,000 employees, does not exclude job cuts; however, these would take place through managed retirement plans, such as the one agreed in February 2021 for 5,000 jobs. The pact made the Wolfsburg main plant the headquarters for digitalisation and electro-mobility – 'Volkswagen's Silicon Valley'.

Tensions around this plant grew in 2021 due to its low-capacity utilisation and productivity. When in November 2021 then-CEO Herbert Diess reportedly warned the supervisory board of up to 30,000 job losses in Germany, a full-blown media scandal erupted. He subsequently backed off, mentioning only 'some downsizing' at the main plant.

Referring to the 2016 *Pact for the Future*, the works council rejected any further job cuts, but added that the workforce is ready for change, though *"only with VW culture. And that includes the works council getting involved."* Its

central works council secured the Wolfsburg headquarters' future by pushing the management to accelerate the launch of autonomous electric vehicles there.

Electric car batteries – which make up between 30 and 40 per cent of the value added of an electric car – will be key to future employment in Europe. The number of jobs created will depend on the approach taken by manufacturers, however: from BMW's external procurement to Volkswagen's integrated value chains.

Calls from trade unions for automotive companies to produce their own battery cells in house, thus mitigating job losses, are increasing, and indeed the size and influence of a company's work council has been found to be a key factor in whether a company goes down this route.

Managing conflict through a just transition

While Europe's car industry has historically not been concerned by the need to transition to greener transport, the automotive sector is now absorbed with managing the fast-track transformation to electromobility required by the EU, using a combination of hedging and support strategies.

On their side, the industry's works councils and trade unions have been heavily involved in protecting jobs and workers. Their efforts have met with some success – predominantly in France and Germany. In the latter, the interventions of the country's powerful works councils have allowed workers and plants to come out of restructuring processes relatively well.

French unions, after witnessing significant job losses in the past decades, believe that electrification presents a substantial reshoring opportunity and are calling for policies to incentivise this.

But even in the most positive of scenarios, the process remains conflictual. Just transition policies, while absolutely necessary, are limited in scope as they tend to be available to specific groups of workers only – those with regular employment contracts – and fail to cover the entire value chain, in particular in foreign countries.

Trade unions at foreign subsidiaries, such as in central and eastern Europe, have less leverage as strategic decisions are made at company headquarters. As a defensive strategy, they hope for a longer phase-out for the combustion engine. Broader social justice issues, such as regional inequalities and the lack of affordability of the heavier and more expensive cars now guaranteeing industry jobs, are less the focus of trade union attention.

Trade unions have always been advocates for active government policy on industrial matters and have welcomed European Commission initiatives such as the Green Deal Industrial Plan and the Net-Zero Industry Act. But the lack of social conditions – such as quality jobs and apprenticeships attached to the available funding – has drawn strong criticism from IndustriALL Europe and the ETUC, who are concerned that the relaxation of state aid rules may put downward pressure on working conditions.

The automotive industry's transition to electric vehicles – as required by the EU under the *Fit for 55* package – is a positive step forward and key to wider ecological transition. But at this time of complete reconfiguration, the sector and its unions need more support to navigate the conflicts inherent in such wide-reaching change.

The fact that the automotive industry is not covered by the EU's Just Transition framework is a serious omission that risks deepening an already conflictual and unequally distributed process.

If they want to see a green transition that is fair and generates hope rather than discontent in Europe's workplaces and homes, Greens and all progressive voices must add their weight to the call by trade unions, employers, and NGOs for a just transition framework for one of Europe's biggest sectors and employers. ■

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The manufacturing jobs boom that isn't

Niclas Poitiers argues that the US Inflation Reduction Act shows that massive subsidies are not leading to massive manufacturing job creation

August 2023 marked the first anniversary of the United States Inflation Reduction Act (IRA). Together with the CHIPS and Science Act, it is the flagship of President Joe Biden's industrial policy push. Proponents say it is a tool to fight climate change, create 'good' manufacturing jobs (thus reducing inequality and political polarisation) and keep China in check. But the size of the subsidies involved has generated anxiety among trading partners about investment and jobs moving to the US.

A year on, some results are encouraging. Major new investments in clean-energy production and clean-tech manufacturing have been announced, many in states dominated by the often climate-sceptic Republican party. However, the number of new jobs announced so far must disappoint those in America and Europe who were hoping to rejuvenate the middle class through industrial policies.

The Biden Administration says the IRA has created 170,000 jobs, while analysis by the *Financial Times* found 100,000 new jobs in CHIPS and IRA-related project announcements. These numbers should be treated with caution. Some announced projects might have been pursued even without government support, while others might have been smaller but would still have created some jobs.

Some new jobs might represent retrained workers that do not add 'net' employment in the manufacturing sector. And most of these jobs do not exist yet but are expected to arrive in the coming years as projects are developed.

Even if the 170,000 jobs cited by the Biden Administration are taken at face value, this is not even close to creating anything like the transformation of US manufacturing that was advertised. The IRA new jobs are dwarfed by the business cycle: in the last year, the US economy has added on average 312,000 jobs a month. The latest numbers from July 2023 were among the weakest, but still showed a gain of 187,000 non-farm jobs.

A year's worth of IRA job announcements, most of which will take years to realise, thus does not even account for a month's worth of net employment gains in the last year. The 170,000 IRA jobs account for only 0.1% of the total US labour force of 167 million – far from transformational.

This is also true when looking at manufacturing more narrowly. Many if not most of the new jobs will be in green-energy deployment, construction and related services. But even assuming generously that all 170,000 jobs will be net new industrial jobs, the relatively small US manufacturing work force would grow by only 1.3%.

Policymakers must become more realistic about what they want to achieve with manufacturing subsidies

More projects will be announced but the speed of new announcements is already slowing. The White House has cited some modelling that claims the IRA will generate 1.5 million new jobs economy-wide by 2030, but even this foresees a net gain of only 150,000 manufacturing jobs, which is unimpressive given the timeframe.

That the clean-tech and semiconductor subsidies do not deliver manufacturing jobs at scale should not be a surprise. Chip and battery production are especially capital-intensive but require relatively few, highly-specialised workers.

Furthermore, the lousy return in terms of employment is not unique to the US. An Intel factory in Germany is set to receive €10 billion in subsidies for only 3,000 manufacturing jobs. A VW battery factory in Canada will get about €9 billion in subsidies for an expected 3,000 jobs. In both cases, the subsidy per new manufacturing job is about €3 million.

There are good reasons beyond job creation to want to attract investment in clean-tech and semiconductor manufacturing. China's dominance of solar and battery supply chains is a clear worry, and the geopolitical importance of semiconductors warrants public investment in the sector.

Furthermore, in a political environment in which carbon pricing is perceived as infeasible, subsidies might be the only viable option to fight climate change. Subsidies could also help prepare the ground for more effective policies by creating a favourable political economy, sowing 'green' economic interests in important constituencies.

However, policymakers set themselves up for failure when they claim these industrial subsidies will create a manufacturing job boom. Nor is it serious to claim that not offering generous handouts would lead to disastrous deindustrialisation and job losses.

This doesn't mean the IRA has failed, nor that green policies cannot create green jobs. The IRA was the largest climate package in US history and has already attracted major manufacturing investment. Beyond manufacturing subsidies, it includes significant incentives to decarbonise the electricity grid and road transport. These will help put the US on a path towards a greener economy.

It does show, however, that policymakers must become more realistic about what they want to achieve with manufacturing subsidies. The IRA is a product of an environment in which climate policy is controversial and subsidies might have been the only viable option.

But elsewhere, more efficient instruments to fight climate change while ensuring social fairness are available. Governments that contemplate mimicking US policies should be aware of their opportunity costs. ■

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The EU must stop carbon leakage at the border to become climate neutral

The EU is committed to achieve climate neutrality by 2050. Justus Böning, Virginia di Nino and Till Folger argue that to meet this aim carbon leakage at the border must be stopped

The Emissions Trading System has been the cornerstone of the EU's efforts to achieve climate neutrality by 2050. However, as currently implemented, it does not charge a price for the carbon embedded on import goods. This column shows that while the scheme has been successful in curbing the EU's carbon emissions, this has come at the cost of increased imports of carbon-intensive goods. It also highlights how the extent to which firms can outsource their carbon emission depends on ownership structure, with foreign-owned firms better placed to reorganise production to avoid the scheme.

The EU is determined to achieve climate neutrality by 2050. The environmental benefits of this resolution will be global, but will the burden be equally shared worldwide? What is the risk for the EU to incentivise relocation or imports of high carbon footprint production from emissions havens?

Carbon leakage[1] is a risk of environmental policies adopted without international coordination (Ishikawa and Cheng 2021). While scholars tend to agree that leakage has remained limited after the introduction of the EU Emissions Trading System (ETS) (Dechezleprétre *et al* 2022, aus dem Moore *et al* 2019), they tend to argue in favour of exempting exports from carbon pricing (Weder di Mauro *et al* 2021).

However, their conclusions assume market conditions that the 'Fit for 55' package, with the aim of reducing net greenhouse gas (GHG) emissions in the EU by at least 55% by 2030, could rapidly change. In line with the reduction in emission allowances in recent years, the price of emissions, which represents the cost companies must pay for polluting in the EU and thus determines the incentive to relocate to unregulated regions, has increased considerably.

Against this backdrop, to preserve competitiveness of firms in the region and prevent carbon leakages, a carbon border adjustment mechanism (CBAM) on imports will charge foreign companies the same price paid by local businesses for their emissions when supplying the EU.

By charging the same price irrespective of the geographical location of emissions and producers, the CBAM aims at placing companies on an equal footing in the EU market, offsetting eventual competitiveness losses.

To preserve competitiveness of firms in the [EU] and prevent carbon leakages, a carbon border adjustment mechanism (CBAM) on imports will charge foreign companies the same price paid by local businesses for their emissions when supplying the EU

In this column, we contribute to the debate about the efficacy of EU green policies and their fallout on EU firms' competitiveness in three distinct ways. First, we provide new evidence on the ETS efficacy in curbing EU carbon emissions; at the same time, we highlight that the success came with costs. Carbon leakage occurred in regulated industries, and they appear less negligible than previously identified.

Second, we present the result of a novel study about the anti-competitive effects on EU industries associated to the ETS implementation. We shed light on the fact that uniformly applied policies can still produce differential effects on firms' output depending on their company's ownership structure.

Finally, because the choice to introduce a CBAM is connected to incentives for companies to dodge costly regulation, our analysis sheds light on the conditions under which it could deliver the EU's climate neutrality goal (Böning *et al* 2023).

The ETS has delivered on its mandate, but prompted carbon leakage in regulated industries

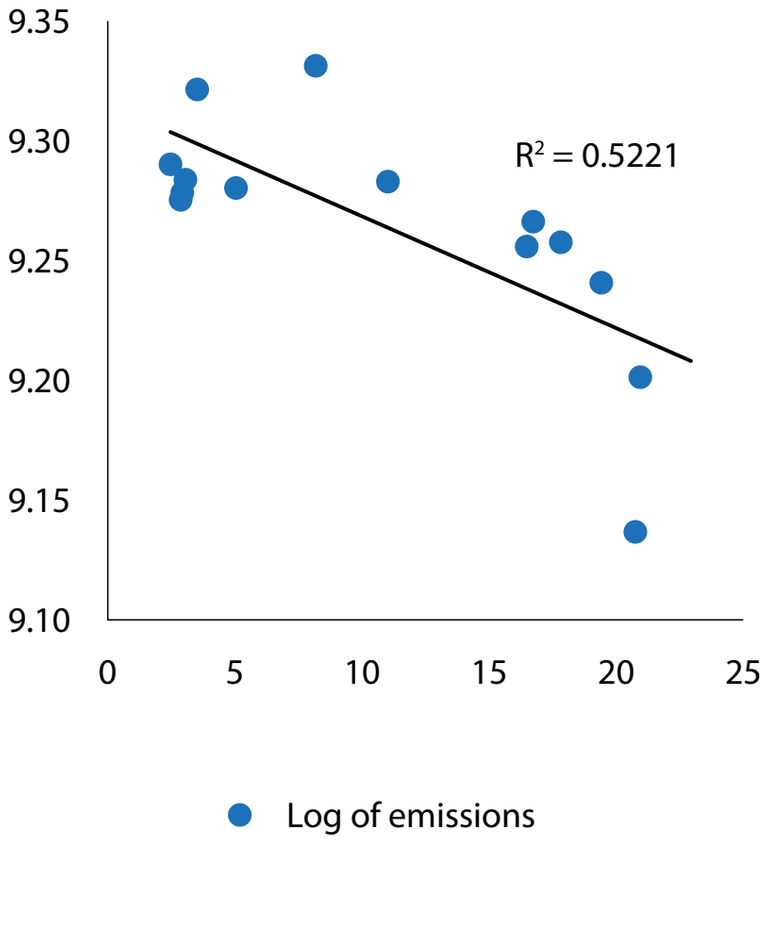
A provisional deal on a revised ETS has already been reached and the discussion about introducing a CBAM on imports are at an advanced stage[2]. A prerequisite for the new deal to work is proving that the existing ETS scheme has indeed reduced regional and global emissions. We determine the effectiveness of the ETS in two ways.

Firstly, by looking at yearly emissions we can see that these are negatively correlated with ETS stringency, which is proxied by the share of traded in total allowances in the previous year[3]. The linear negative association explains more than half of the variance in the average log of yearly emissions (see Chart 1).

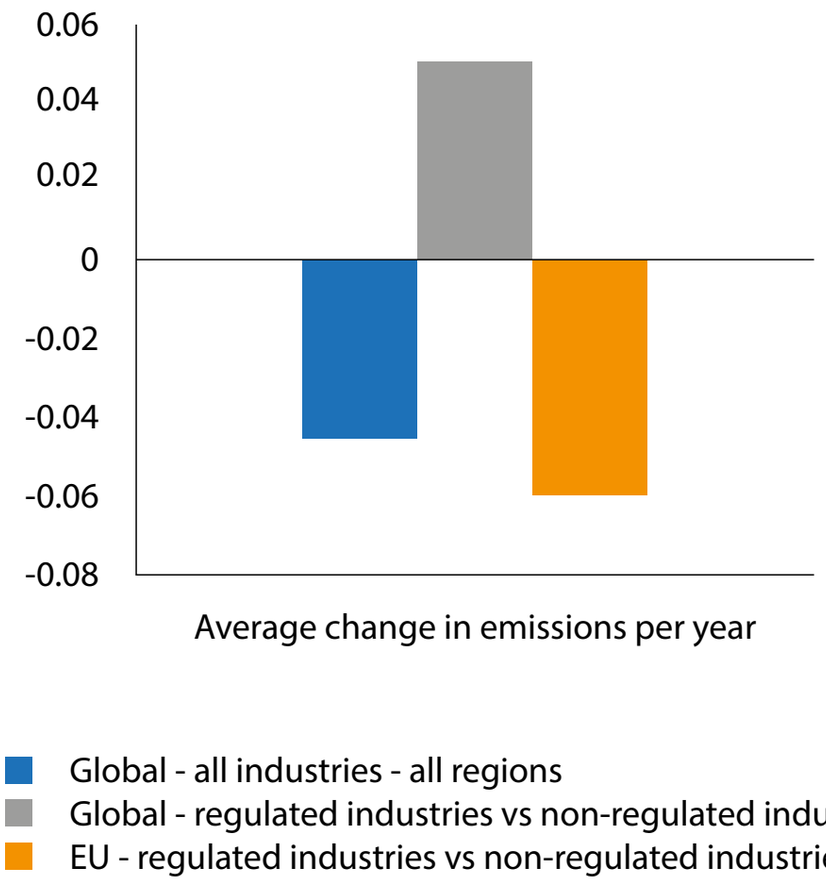
These are estimated to have declined by about 2 percentage points more for each unitary increase in the ETS stringency[4]. The economic mechanism can be summarised by some firms investing in cleaner technology and selling unneeded emissions allowances.

Figure 1. ETS efficacy and associated carbon leakages

a) Carbon emissions (vertical axis) against ETS stringency (horizontal axis)



b) 3D measures of the ETS benefits and costs - efficacy vs carbon leakages



Notes: The sectoral emissions plotted in the left hand side chart were regressed against sectoral trends, country, time and sector characteristics then averaged across sectors. The scatter bin-plot show that the emissions, unexplained by these determinants, correlate negatively with the ETS stringency. ETS stringency is proxied with the lagged value for the shares of traded allowances over total allowances. The 3D measure of ETS benefits and costs are derived from a diff-in-diff-in-diff estimate of yearly log emissions between 2005 and 2018, on its lagged value, country, sector, time fixed effects price of emissions, sectoral trend and country deterministic trends. The blue bars is the reduction in global emissions after the ETS came into force in 2005. The grey bar shows the change in emissions in ETS industries but global level. They are offsetting the global reduction. Last, the yellow bar depicts the average change in emissions of ETS industries in the EU relative to the average change in emissions of the same industries but global level (grey bar). Overall, EU efforts to reduce emissions were countered by the increase in global emissions of ETS industries.
Sources: Tonnes of CO_2 equivalent greenhouse gas emissions are from the European Environment Agency (EEA), which also provides the number of allowances and the amount of surrendered emissions by sector and country since 2005.

Meanwhile, other firms may cut back on production, thereby reducing emissions and allowing them to sell the saved emissions permits. To corroborate this hypothesis, we also find that pricier emissions and more stringent caps accelerated the EU greening process after 2013.

Thereby, we conclude that the pricing mechanism was effective as emissions declined faster the higher the stringency and the higher the price of each emission permit, in line with other analyses in the literature (Känzig 2023).

However, these achievements came with costs that are uncovered when the study is extended to unregulated industries and regions. A distinct analysis estimates the ETS's efficacy through a '3D' (difference-in-difference-in-difference) approach which leverages on the triple dimensional (time-sector-region heterogeneity) to identify the scheme's effects, while controlling for emissions autoregressive processes, sectoral trend and time, industry and country fixed effects. This second analysis confirms that the ETS resulted in cuts in the EU's GHG emissions of approximately 2–2.5 percentage points per year.

Nevertheless, unlike earlier studies which found limited empirical evidence of carbon leakages, our analysis finds that heavy emissions activities increased outside the EU, as emissions in regulated industries within the EU declined.

Against a backdrop of declining emissions since 2005 (Figure 1b, blue bar), the global yearly emissions by regulated industries rose over the same period (grey bar). Thus, the additional reduction in regulated industries within the EU (yellow bar) were offset by a simultaneous rise in emissions of those same industries elsewhere. This runs counter to the EU's efforts to also help reduce emissions globally.

The ETS's anti-competitive effects: a guide for the equal footing of the CBAM

In order to see whether the ETS equally incentivised all companies to relocate or import emission intensive inputs, we utilised information on sectoral output values and input-output linkages. We also distinguished companies by location (within and outside the EU) and ownership structure (domestic and foreign affiliates of multinational enterprises) which we match with industry's emissions and ETS prices[5].

We then regress the value of production by sector-country and ownership type on (1) emissions intensity by sector-country-ownership type, (2) exposure to emission intensive inputs distinguishing them by sourcing region (EU and outside the EU), and (3) the cost of the exposure to EU ETS regulation[6].

The aim is to verify whether a uniform regulation can trigger differentiated effects depending on the companies' ownership and the exposure of production to high-carbon footprint inputs, which are either sourced from within the EU and, hence, covered by the ETS or from outside the EU.

We find the EU production in regulated sectors to generally be more sensitive to emissions intensity than non-EU production, irrespective of the company ownership structure. We also find that purchasing high-emission inputs from within the EU translates into a competitive disadvantage for companies located within the EU.

For these companies, shifting the sourcing of inputs from within to outside the EU raises total production but to a different extent for domestic and foreign owned companies.

Specifically, the production of domestically owned companies in regulated industries from within the EU correlates negatively with the share of high-carbon footprint inputs sourced from within the EU and correlates positively with

the share of the same inputs when they are sourced from outside the EU. Production of foreign-owned companies behaves similarly in terms of correlations across sourcing regions.

However, the impact of a reshuffling across sources of emission intensive inputs from within to outside the EU grows larger as the price for allowances rises (Figure 2). Because ETS prices have risen in recent years and are anticipated to continue growing as the FIT-for-55 package comes into force, the incentive to change sources for foreign owned companies is ever growing.

Against this background, foreign-owned companies seem better placed to dodge the regulation and reshuffle their inputs sources in favour of those located outside the EU unless these are also held accountable for their emissions when supplying the EU customers.

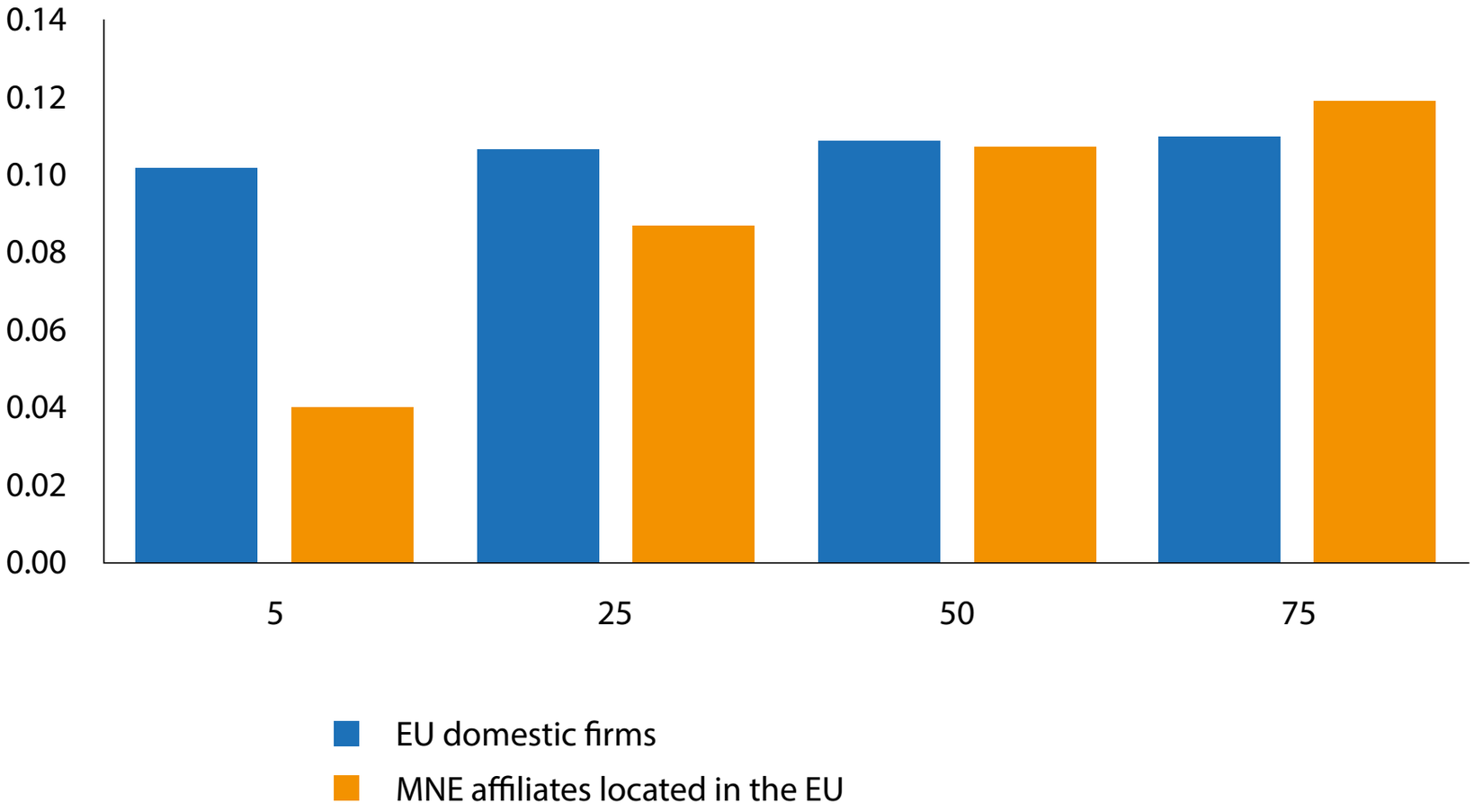
The analysis does not reach the same conclusions when investigating production of companies located in the EU but operating in unregulated sectors; reshuffling across input sources in this case did not lead to any sizeable increase in total production, at least not for the time under consideration.

Conclusion

Overall, our study confirms that the ETS is effective in curbing EU emissions, but at the cost of burdening companies in the EU, especially domestic ones, and triggering carbon leakages.

Different sensitivity of EU production to sourcing of emissions-intensive inputs depending on the company's ownership, suggests that some business models may have more leeway in reorganising production processes and sourcing high-carbon footprint inputs from outside the EU.

Figure 2. Sourcing high-carbon footprint inputs: The effect on production of a 1 percentage point shift from the regulated EU to unregulated regions (in percentage points)



Notes: The chart depicts the effect of a hypothetical shift by one percentage point across sourcing regions of high carbon footprint inputs from within to outside the EU based on estimates from regression analysis. The log value of sectoral production is regressed on country-sector-ownership fixed effects, emission intensity (emissions per euro worth of production), log value of inputs and the four shares of high carbon footprint inputs sourced from Domestic and MNE companies. The coefficient on these four regressors return the sensitivity of sectoral production to emission intensive inputs depending on regions they are originated, eg. from within and outside the EU. The specification also includes the interaction of these shares with the price paid on allowances in t-1, to capture the non-linearity of exposure to ETS regulation depending on the cost/price for allowances. The equation specification encompasses also deterministic country and industry trend and time unobserved heterogeneity, besides proper country-sector-ownership type fixed effects. Matching the AMNE and WIOD databases eventually yields 34 sectors and 44 countries (including RoW) spanning 2000-2016. Regulated (ETS) industries are Coke and refined petroleum products (C19), Basic metals (C24), Other non-metallic mineral products (C23), Electricity, gas, water, waste and remediation (DTE), and Transport and storage (H).
Sources: OECD-AMNE, authors estimations

Because the new EU environmental legislation aims at preventing similar behaviour through the CBAM, there is a need for a careful design of this mechanism, in terms of equivalent tariff charged on emissions embedded in imports and of CBAM industry's coverage. Our analysis advises in favour of extending the application of a CBAM on all regulated productions. ■

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Endnotes

1. According to the European Commission website, "[c]arbon leakage refers to the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints. This could lead to an increase in their total emissions. The risk of carbon leakage may be higher in certain energy-intensive industries" (https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/free-allocation/carbon-leakage_en)

2. Both these tools are devised to strike the best possible trade-off between carbon emissions reduction and the preservation of production competitiveness in the region by minimising the occurrence of carbon leakages also taking into consideration administrative, technical and political aspects related to their enforcement. The remodelled ETS envisages stricter trading rules, extends the industry coverage, in particular to transport and buildings, and cuts more decidedly on emission allowances. More importantly it gradually phases out the free carbon allowances, granted to emission-intensive and trade-exposed (EITE) industries to prevent carbon leakages. The EITE industries are those with an increase in direct and indirect production costs induced by the ETS, as a proportion of the gross value added, by at least 5%; and that operate in sectors with trade intensity with non-EU countries (imports and exports) above 10%. In this context, a CBAM on imports of certain EITE products (cement, iron, steel, aluminium, fertilisers, and electricity) is phased in as of 2026 to guard EU production from the competition of foreign companies operating in unregulated regions. Importers will buy certificates proportional to the emissions embedded in imports at the ETS market price. For further details, see https://www.consilium.europa.eu/en/press/press-releases/2022/03/15/carbon-border-adjustment-mechanism-cbam-council-agrees-its-negotiating-mandate/ https://www.consilium.europa.eu/en/press/press-releases/2022/12/18/fit-for-55-council-and-parliament-reach-provisional-deal-on-eu-emissions-trading-system-and-the-social-climate-fund/. Stepping up Europe's 2030 climate ambition - Investing in a climate-neutral future for the benefit of our people," Communication.

3. For a given technology and industry's production, the ratio of traded over total surrendered allowances rises in those sectors where granted allowances become scantier, mimicking the degree of sectoral stringency of the emissions'

regulation. However, the contemporaneous values of these sectoral ratios could be plagued by endogeneity since they co-move with relative industry's production, thus pushing up also the traded ones. Thereby in our study, the ETS stringency is defined by the share of traded allowances over total surrendered allowances per regulated sector at t-1. Intuitively if in a given period companies were forced to purchase a higher share of total emissions, their production cost will increase proportionally to the spending on allowances, incentivizing them to cut down on emissions the year after. This is what our empirical estimates confirm.

4. The sectoral emissions are regressed against sectoral trends, country, time, sector characteristics, the ETS stringency (e.g. share of traded in total allowances) and the cost associated to the traded emissions.

5. Data on gross output by country and sector, the share of emission-intensive inputs and imports on total were obtained from the OECD AMNE database that distinguishes companies according to domestic and foreign ownership (see Cadestin et al. 2018). The period covered spans 2005-2016

6. The exposure is defined by the share of high carbon footprint inputs on total inputs. The cost is the same share multiplied by the price of emission allowances per period. In the attempt to eliminate any bias which could affect the results coming from other unobservable factors affecting production which are unrelated to the ETS, the analysis controls for 3D fixed effects (sector-country-ownership), include time fixed effects and sectoral and country deterministic trends.

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Carbon trade-offs: how firms respond to emissions controls

Regulatory efforts to control carbon emissions are intensifying around the world. Maria Cecilia Bustamante and Francesca Zucchi examine the effects of carbon pricing mechanisms on businesses

Given that regulatory efforts to control carbon emissions are intensifying around the world, understanding the incentives that carbon pricing creates for firms is paramount. This column presents a framework showing that whilst carbon pricing mechanisms curtail firms' carbon emissions, as it becomes costlier to comply, these mechanisms also tilt polluting firms' investment mix towards short-term abatement and away from green innovation. Subsidies for innovation can partly offset this shift and, overall, can boost firms' green investment.

To limit global warming, several countries around the world have adopted carbon pricing mechanisms (or are considering doing so). As shown in Figure 1, regulators rely on two carbon pricing mechanisms: emissions trading systems and carbon taxes (or a combination of the two).

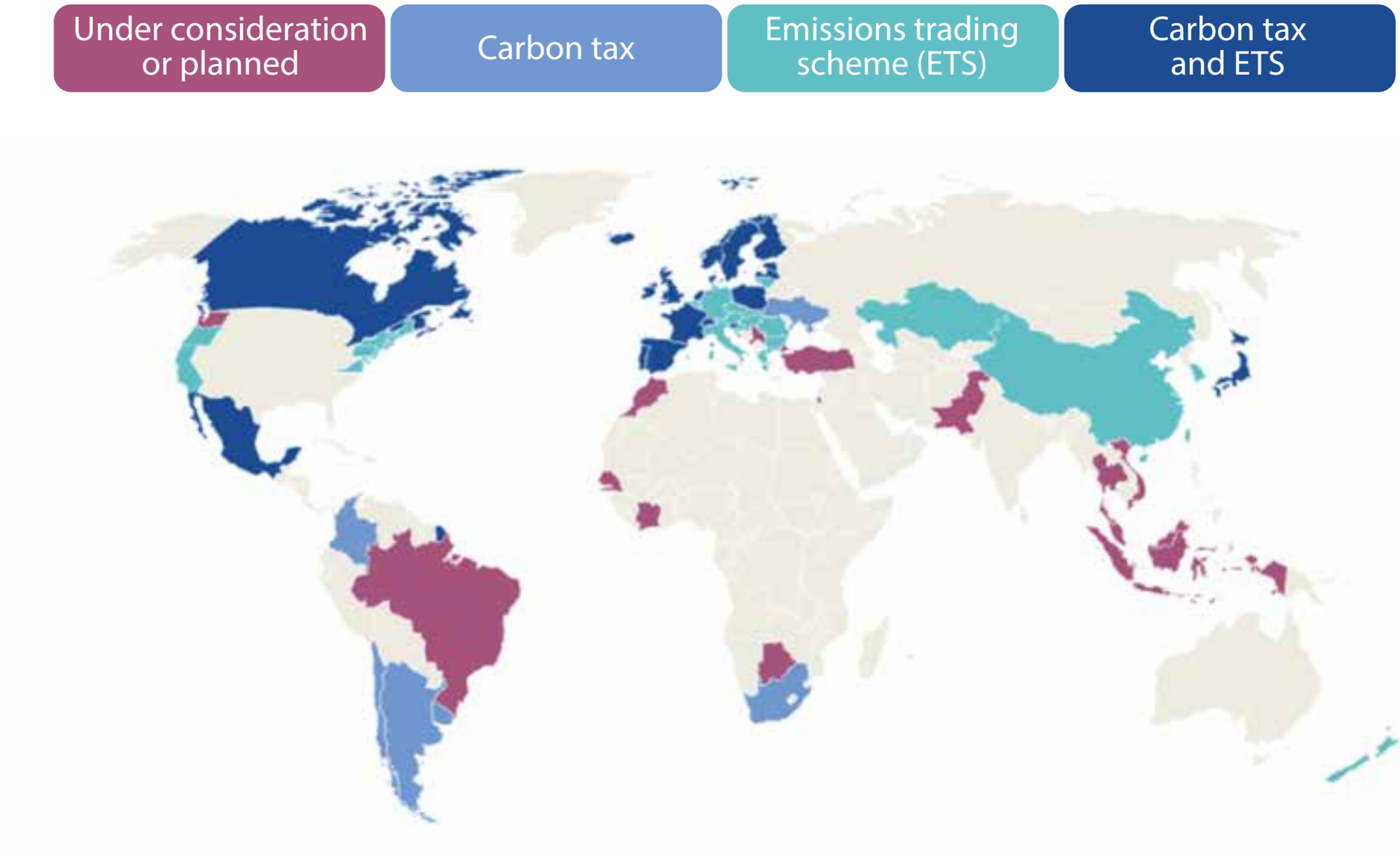
Under emissions trading systems, carbon credits give firms the right to release a set volume of emissions into the atmosphere (generated through their production processes). These credits are also tradeable, which means firms with a shortage of credits can buy them, and firms with an excess of credits can sell them.

In contrast, under carbon tax systems, a central authority sets a predetermined price that emitters pay for a set volume of emissions. A common feature of carbon pricing mechanisms is that they impose additional costs on businesses.

As a result, every tonne of carbon dioxide produced through industrial processes needs to be paid for, either by surrendering carbon credits (which are costly) or by paying a tax on it.

Given that regulatory efforts to control carbon emissions are intensifying around the world, understanding the incentives that carbon pricing creates for firms is paramount. Intuitively, by making pollution costly, carbon pricing mechanisms should provide incentives for firms to reduce their carbon footprint.

Figure 1. Carbon pricing around the world



Notes: The map illustrates the adoption of carbon pricing mechanisms around the world. The boundaries and other information shown do not imply on the part of the IMF any judgement on the legal status of any territory or any endorsement or acceptance of such territories.
Sources: World Bank Group, IMF staff calculations and national sources, July 2022.

However, a key question is how firms attain this goal. The answer is indeed not obvious, as firms can have various options at their disposal to limit their carbon footprint; for instance, they can cut their output or engage in green investment with various horizon and cost profiles.

The control of carbon emissions by regulators poses a new challenge in the corporate world, namely maximising shareholder value by developing an optimal carbon management policy

To answer this question, in a recent paper (Bustamante and Zucchi 2023) we have constructed a theoretical framework to investigate the incentives that carbon pricing creates for firms and how they should therefore best respond.

We study the three most prevalent regulatory frameworks: laissez-faire (or no regulation), emissions trading systems and carbon tax systems. We assume that firms choose the mix of policies that maximises shareholder value.

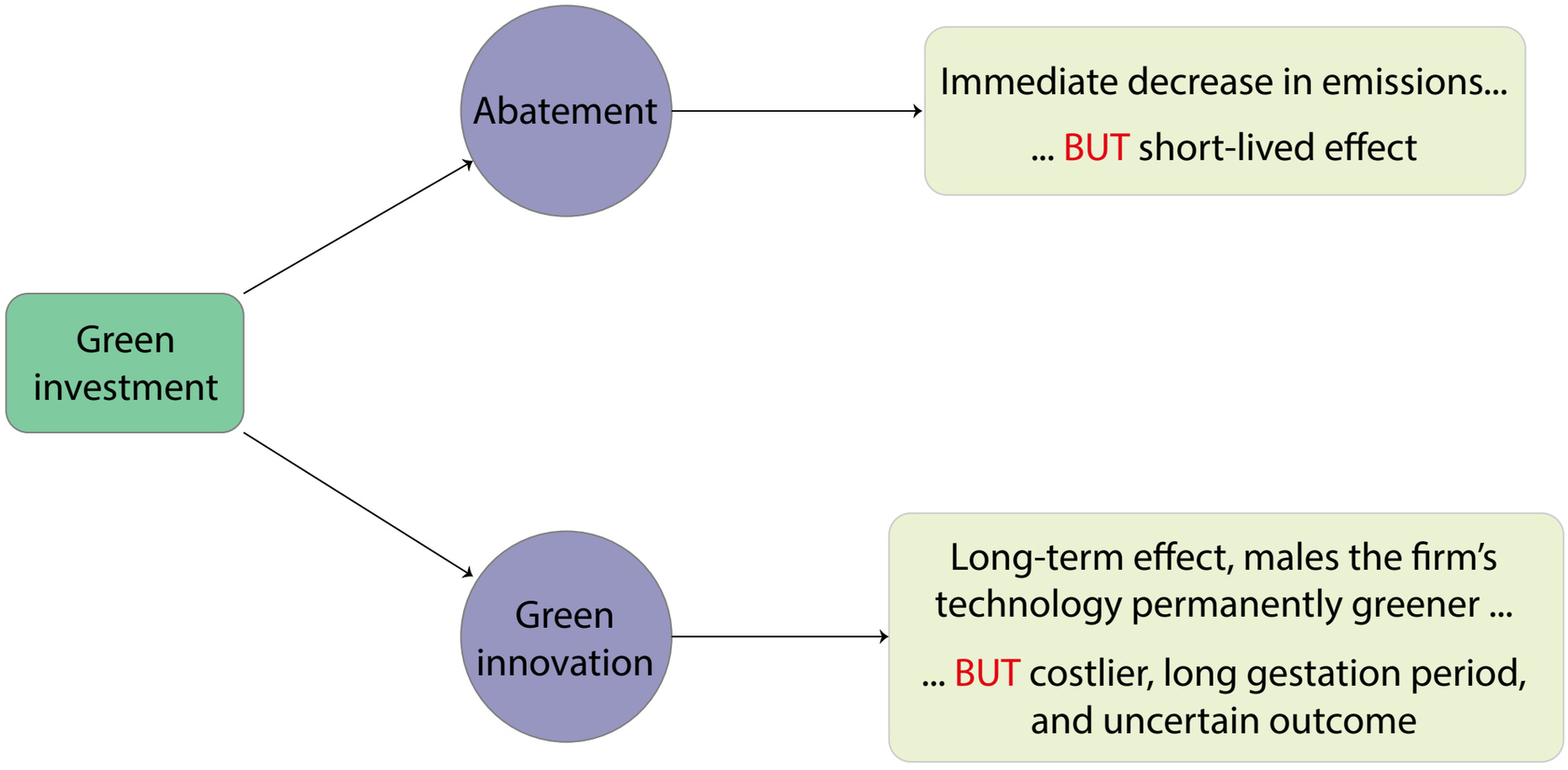
First, they can adjust their scale of production, which directly determines their gross carbon emissions. Second, firms can engage in green investments, which are intended to make industrial processes cleaner. Third, under emissions trading systems, they can optimally manage and trade carbon credits. As a result of this dynamic problem, firms' net emissions depend on the choices they make, and vary over time.

As a novel distinction, our framework acknowledges that green investment projects feature different characteristics. Two green investment projects at opposite extremes of the spectrum can be considered, as illustrated in Figure 2: abatement and green innovation.

At one extreme, abatement projects are aimed at offsetting some of the firms' emissions. That is, firms generate emissions through their production processes and abatement projects have the effect of 'cleaning up' some of these emissions. Planting trees or carbon capture and storage are just some examples. While immediately reducing firms' net emissions, abatement projects do not result in structural technological change.

At the other extreme, green innovation fosters the transition to novel, more sustainable technologies and has a long-lasting effect – it makes a firm's technology permanently less polluting[1]. Pioneering inventions which accelerate the phasing-out of fossil fuels are a key example. While having a long-term impact on sustainability, green innovation is costlier than abatement, has a long gestation period, and has an uncertain outcome[2].

Figure 2. Green investment types



Note: The diagram shows the different types of green investment that a firm can undertake along with the associated benefits and downsides, as described in Bustamante and Zucchi (2023).

How do firms respond to carbon pricing?

A first insight of our analysis is that carbon pricing effectively leads to a reduction in firms' net carbon emissions compared with laissez-faire, which is consistent with the available evidence (See, for instance, Fowlie *et al* 2012, Martin *et al* 2016).

This happens for two reasons. First, firms produce less compared with laissez-faire, as carbon pricing makes them internalise the externalities associated with their industrial processes. Second, firms engage in green investment.

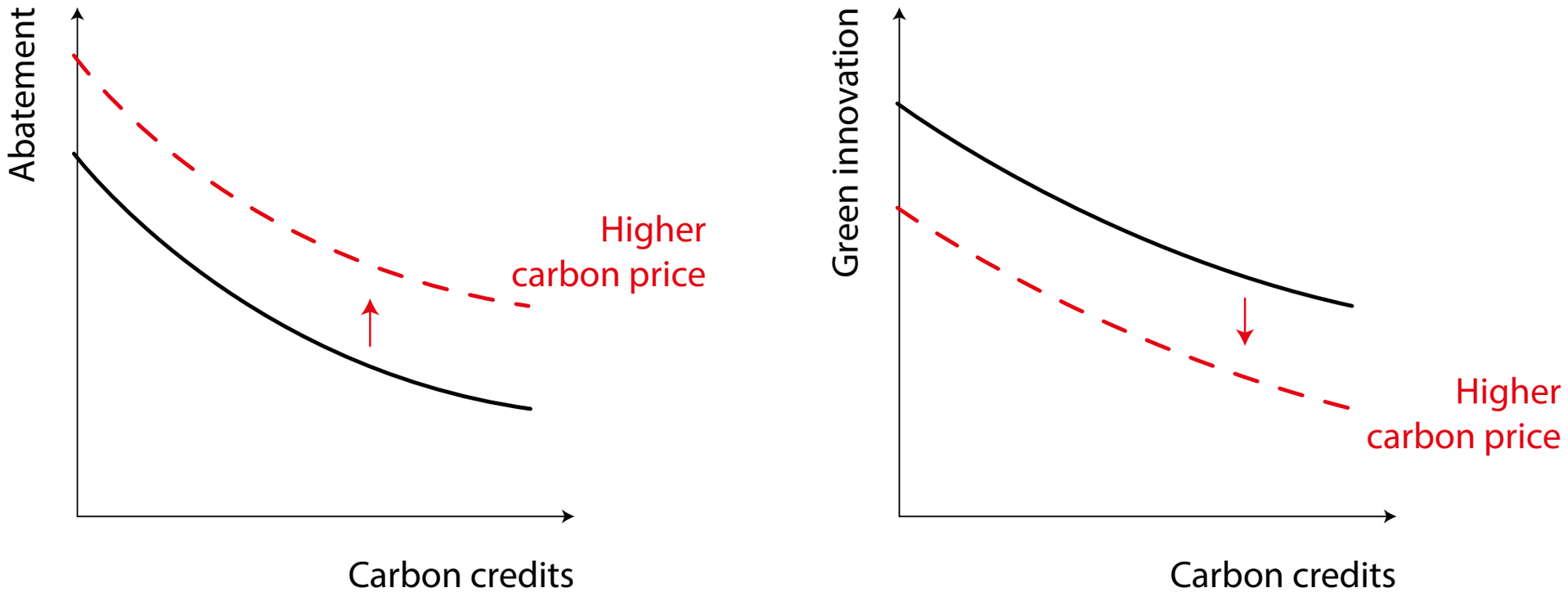
Moreover, our analysis reveals that carbon pricing affects firms' green investment mix. As it becomes costlier to comply, polluting firms tilt their green investment mix towards short-term abatement and away from green innovation, as illustrated in Figure 3.

The reason is that abatement effectively and immediately reduces a firm's expected cost of carbon regulation, whereas green innovation has a delayed and uncertain outcome. That is, by engaging more in abatement, firms decrease their net emissions with immediate effect – thus, they reduce their need to buy credits under emissions trading systems, or they lower their tax liability under carbon tax systems.

Shifting to abatement, however, can slow down the transition to greener technologies. Our analysis shows that this shift can be (at least partly) offset by complementing carbon pricing with subsidies for green innovation. Such subsidies not only spur greater engagement in green investment, but also tilt the mix in favour of green innovation.

In the specific case of emissions trading systems, our model also warns that firms holding larger balances of carbon credits are less committed to curbing their emissions (consistent with the empirical evidence in De Jonghe *et al* 2020).

Figure 3. Carbon pricing and the green investment mix



Notes: The diagram shows how the different types of green investment (abatement and green innovation) respond to an increase in the carbon price, as described in Bustamante and Zucchi (2023). If the carbon price increases – meaning that it becomes costlier to comply – polluting firms increase their investment in abatement and decrease their investment in green innovation. The figures also show that firms' engagement in green investment decreases as their balances of carbon credits increase.

The reason is that firms adopt precautionary policies to minimise their need to buy carbon credits and incur the ensuing costs. This precautionary need is especially strong when firms have low balances of carbon credits. In those instances, firms optimally cut production to reduce their consumption of credits and, additionally, increase their green investment.

Conversely, a large balance of carbon credits reduces this precautionary need. Thus, firms increase production and reduce their engagement in green investment, leading to higher emissions overall. Our model then suggests that limiting the distribution of free carbon credits can make firms more committed to green investment.

Lastly, our model suggests that carbon regulation does not necessarily decrease shareholder value. Despite the long-standing perception of a conflict of interests between businesses and environmental regulators, a growing body of empirical literature documents that the effects of climate regulation vary across firms (eg. Bolton *et al* 2023, Trinks and Hille 2023).

Our paper provides theoretical grounds for this evidence. In fact, the sale of carbon credits as well as subsidies for green firms can effectively increase valuations if firms are sufficiently committed to reducing their carbon footprint.

Conclusion

The control of carbon emissions by regulators poses a new challenge in the corporate world, namely maximising shareholder value by developing an optimal carbon management policy. We show precisely how firms should optimally manage carbon emissions through their scale of production, green investments of various types, and the management of carbon credits.

Our analysis suggests that carbon pricing mechanisms curtail firms' carbon emissions but, as it becomes costlier to comply, these mechanisms also tilt polluting firms' investment mix towards short-term abatement and away from green innovation.

Subsidies for innovation can partly offset this shift and, overall, can boost firms' green investment. Our model also shows that, under emissions trading systems, firms with large balances of carbon credits are less committed to reducing emissions, which provides an argument in support of limiting the allocation of free carbon credits. Overall, we conclude that carbon regulation does not necessarily decrease shareholder value. ■

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Endnotes

1. Green innovation is viewed as necessary to limit global warming to the Paris Agreement's targets, as noted by Aghion et al (2022), among others. A seminal contribution studying endogenous green innovation is Acemoglu et al (2012).

2. De Haas and Popov (2023) document how these characteristics make green innovation hard to finance.

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The Listing Act: no more than a minor boost to EU equity markets

Streamlining of the company listing process is welcome, but more fundamental reform is needed to revive the EU's flagging equity markets, Alexander Lehmann discusses

There is a growing sense of unease around the trends in European primary equity markets. The number of listed companies has been declining and continues to decline, and initial public offerings by European firms are now regularly done in the United States.

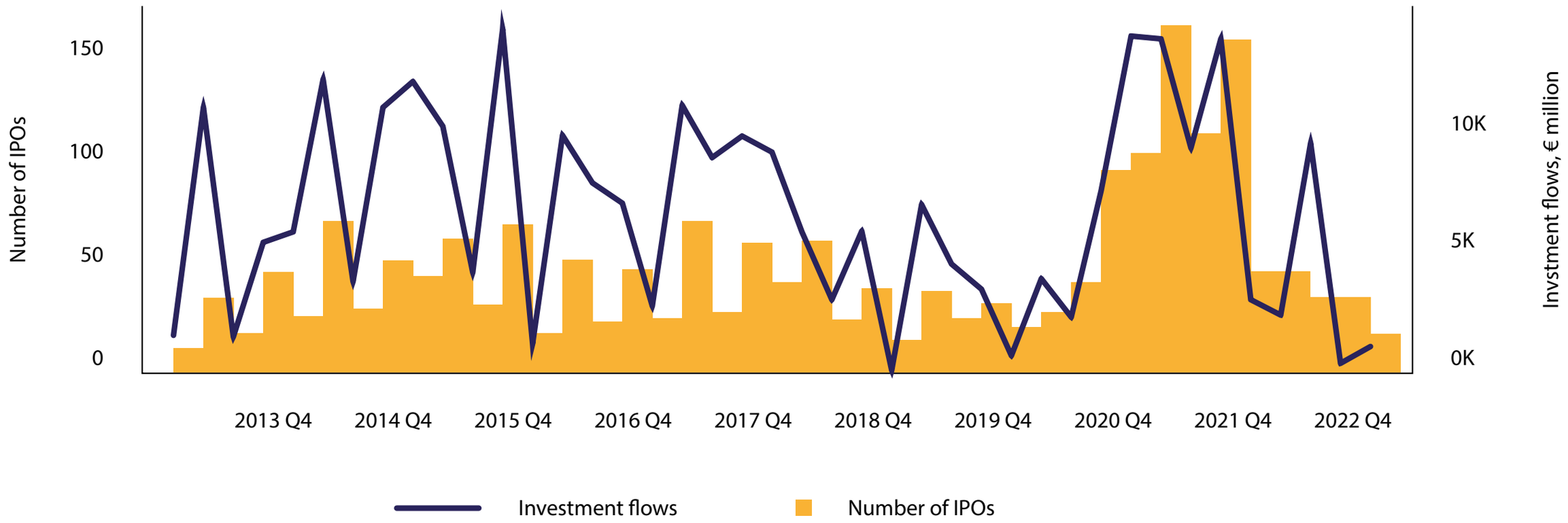
This is the opposite of what European Union regulators want. They emphasise regularly that public equity should play a bigger role in funding innovative companies, and would allow a variety of retail and institutional investors to share in the risks and growth of the corporate sector.

Capital raised on European equity markets in 2022 was the lowest since 1995, at only €89 billion (Suarez, 2023). First-time public offerings (IPOs) are a diminishing subset of this total and within the EU amounted to only €16 billion (more than half of which was accounted for by one large transaction in Germany). Equity issuance on so-called junior markets, where small and medium-sized enterprises (SMEs) benefit from a lower regulatory burden, fell by roughly two-thirds, while the volume of new listings is now minuscule.

The rebound in primary listing activity in 2021 following the COVID-19 pandemic appears to have been transient. Volumes of capital raised and the number of transactions in IPOs seem to have reverted to the more lacklustre levels of previous years. Meanwhile, equity markets in the US and Asia have grown, both relative to the size of the respective economies and compared to global markets overall.

Private equity investors, which do little to foster the benefits of market liquidity and suffer from other shortcomings (Lehmann, 2020a), continue to step into the fold. Notwithstanding the disappointing issuance volumes in EU public equity markets, private equity investments registered their second-highest level ever, at €130 billion[1], while fundraising broke a new record.

Figure 1. IPO volumes and number of firms newly listed on European exchanges



Source: Federation of European Exchanges.

Reducing barriers to 'going public'

Eight years on from the publication of the EU's capital markets union plan, and despite the undoubted progress with several legislative projects, the role of EU equity markets seems in fact to have diminished.

The Commission's proposal seeks to design rules that are consistent across the various national markets, and which will make listing more attractive, in particular to smaller companies

This ongoing eclipse of public equity, and of the listed company itself, has several important ramifications for the European economy, and is now the focus of new regulation in both the EU and the United Kingdom.

The European Commission in December 2022 proposed a reform of the regime that governs the listing of companies, including a 'Listings Act'[2]. This is inching forward in the legislative process and has been promoted as a step to revive activity in EU primary equity markets.

In essence, the proposed measures seek to make life as a listed company more attractive for owners, while reducing red tape and other administrative burden involved in the listing process itself and easing disclosure and other obligations on listed companies, in particular for SMEs. Concretely:

- The Commission proposed a new directive that would allow so-called multiple-voting right shares in smaller companies. This is particularly useful where existing owners seek to preserve privileged rights while gaining access to equity capital in the public markets.

- Smaller firms would benefit from revisions to the EU's main capital markets law (MiFID II), as requirements on brokers to charge for investment research would be eased for smaller firms. These so-called 'unbundling' provisions were designed to stem conflicts of interest in brokerage firms, which did not distinguish between the costs of trading and research.

- The listing process itself is to become less costly with a reduction in disclosures required in a prospectus at the time of an IPO. Smaller firms would be encouraged to list and the information that needs to be disclosed in subsequent rounds of capital raising (secondary listings) would also be streamlined.

- Once firms are listed, the requirements on disclosing possible insider information held by owners and managers would also be streamlined. This would simplify the regime in the EU Market Abuse regulation of 2014.

The Commission's initiative proceeds in parallel with a similar reform of the listing regime in the UK, which has also seen a decline in listings. Unlike in the EU, competitiveness is a secondary objective in the mandate of UK financial regulators.

A proposal issued by the Bank of England in early May essentially envisaged easing post-issuance requirements on listed companies, lowering listing requirements and integrating two market segments (standard and premium), thereby relaxing corporate governance requirements somewhat[3]. UK rules on dual-class shares could also become more liberal for a limited period following an initial listing.

Trade-offs

In making the listing process more efficient, the Commission's proposals would compromise on some of the concepts that have underpinned capital markets rulemaking since the financial crisis. A report for the Commission suggested that excessive requirements for disclosure and investor protection explained the relative absence of SME IPOs and called for a much greater differentiation of listing rules by issuer size (Fernandez *et al* 2021).

Given the scarcity of listings, most of the compromises in the proposed Listing Act seem justified by the objective of attracting companies into the public market and boosting market liquidity, in particular where such changes benefit SME listings.

For instance, the amendments to the prospectus rules, which govern what information is published at the time of a firm's listing, should not materially reduce information obtained by investors (documents need to observe a 300-page limit). Companies that are already admitted to trading are to be given a more straightforward path to raise additional capital in secondary issues.

This should come at minimal risks to investors because such companies are likely to have been covered by industry research already. The changes embodied in the proposed Listing Act, therefore, suggest a sensible emphasis on 'proportionality' in pre- and post-listing requirements. This should facilitate market liquidity and market access for smaller issuers.

Containing insider dealing and protecting investor rights have been key objectives in capital market regulation. Experience suggests that EU rules on insider dealing in the 2014 Market Abuse Regulation have been particularly problematic for smaller companies, where management and ownership functions are more often intertwined, and where it may be more difficult to identify what amounts to insider information and who holds it.

For these companies, streamlined requirements for disclosure and identification of insiders seem justified, also because national supervisors will be given extra powers to spot market manipulation.

More problematic, however, may be the proposal for greater leeway for issuers in defining multiple types of shareholder rights, when they list on the dedicated SME equity markets for the first time. This of course comes at some cost to investor rights and the principle of 'one shareholder one vote'.

National authorities will have greater discretion in applying this clause, likely reflecting local corporate governance traditions. This could be particularly helpful in under-developed capital markets, such as in central and southeastern Europe where the depth of SME equity markets is extremely limited (see Lehmann, 2020b).

In these markets, a listing may become more attractive for owners that seek to retain privileged control rights within a public company, though the definition of such rights and shareholder tiers will come at the cost of further fragmenting the single market.

The CMU agenda that lies ahead

Overall, the Commission's proposal seeks to design rules that are consistent across the various national markets, and which will make listing more attractive, in particular to smaller companies. It also seeks to reflect the underdevelopment of markets in several EU states and their different corporate governance traditions.

In this effort it perhaps heeds calls for a market development that is more bottom-up or led by national prerogatives, and which aims at a 'polycentric' CMU. Safeguarding such long-standing concepts in regulation such as transparency, investor protection and market integrity has worked for now, but may be more difficult if such variety is accommodated more broadly.

Yet, the proposed Listing Act implements largely technical changes, which by themselves will do little to instil new dynamism in EU equity markets. A listing regime that is less onerous for smaller companies will be supportive of market liquidity, but much more is needed to foster secondary market liquidity and cross-border holdings, the two central objectives of the CMU agenda.

There remain other major structural barriers to market liquidity, including:

- Inadequate funding of promising start-ups and other growth companies, which constrains firms in the pre-IPO phase and incentivises listing elsewhere;

- Lack of sufficient institutional capital in public markets, specifically from pension and insurance funds;

- Tax and corporate governance rules, which remain largely national prerogatives and continue to fragment markets and undermine liquidity, including because of long delays in recouping withholding tax on cross-border holdings;

- An often inefficient and fragmented post-trade clearing and settlement infrastructure.

Moreover, the discretion and role of national market supervisors has if anything been elevated, and little has been done to streamline procedures within the European Securities and Markets Authority (ESMA) or expand its resources.

The CMU strategy flags only some of these barriers. The next European Commission in 2024 will need to revisit this. EU countries will need to back any revised strategy more fully, recognising the central role the CMU could play in addressing Europe's various financing shortfalls, and boosting its growth and sustainability plans. ■

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Endnotes

1. See https://www.investeurope.eu/research/activity-data/

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Can Europe make its space launch industry competitive?

Europe is falling behind in the global commercial space launch sector. Francesco Nicoli, Kamil Sekut, Giuseppe Porcaro argue that a new programme may not be enough to fix the shortcomings

Pressure on the European space sector from foreign competitors, primarily the United States and China, has led to a rethinking of Europe's space policy. As part of this, the European Space Agency (ESA), with a membership made up largely of European Union countries, announced in May 2023 the Commercial Cargo Transportation Initiative (CCTI), a call for European companies to develop commercially-sound cargo transportation systems.

European satellite infrastructure, Europe's presence in the International Space Station (ISS) and all exploration and scientific missions depend on transportation into orbit, on which ESA will spend 12.6 percent of its €7 billion budget in 2023.

The hope is that CCTI will stimulate companies to do something Europe has not yet done: develop its own cheap, reusable rocket. In doing this, CCTI is a bid to replicate in Europe the success of NASA's Commercial Orbital Transportation Services (COTS) programme, which ran from 2006 to 2013 and succeeded in substantially lowering the costs for NASA of getting into orbit by engaging private companies in the development and operation of space transportation systems.

Through COTS, NASA backed SpaceX, for example. Using a mix of public and private resources, SpaceX developed Falcon 9, the first partially-reusable rocket. COTS also kick-started a wave of private investment in the traditionally-public US space industry.

Companies have managed to cut the cost of transporting payloads into orbit, leading to an unprecedented increase in the number of satellites that provide improved commercial services, such as internet connectivity and detailed earth-imaging.

But this so-called US 'New Space' revolution has eluded Europe. In this analysis, we assess whether the CCTI has the potential to contribute to the reforms needed to replicate US successes. Overall, we find that while CCTI will make some difference, it suffers from a lack of financial certainty, and it is unclear if it has sufficient political backing.

To ensure the success of European space industrial policy, it is necessary to tackle not only the procurement aspect but also to invest in research and development to bridge the technological gap

Europe's position in the launch sector

Sending European rockets into space has long relied on stable cross-national public-private partnerships and foreign-made launchers. The French-German Arianespace has dominated the European space-launch market, relying on a stream of secure public funding through ESA. This company provided Europe with the heavy-lift Ariane 5 and smaller Vega rockets.

This approach worked well in the past: for years, Ariane 5 was one of the most cost-effective rockets available, making it a preferred launcher for publicly-funded security and science missions and for commercial satellites. To launch medium- sized cargo, Europe used Russian Soyuz 2 rockets, one of the most reliable rockets ever developed.

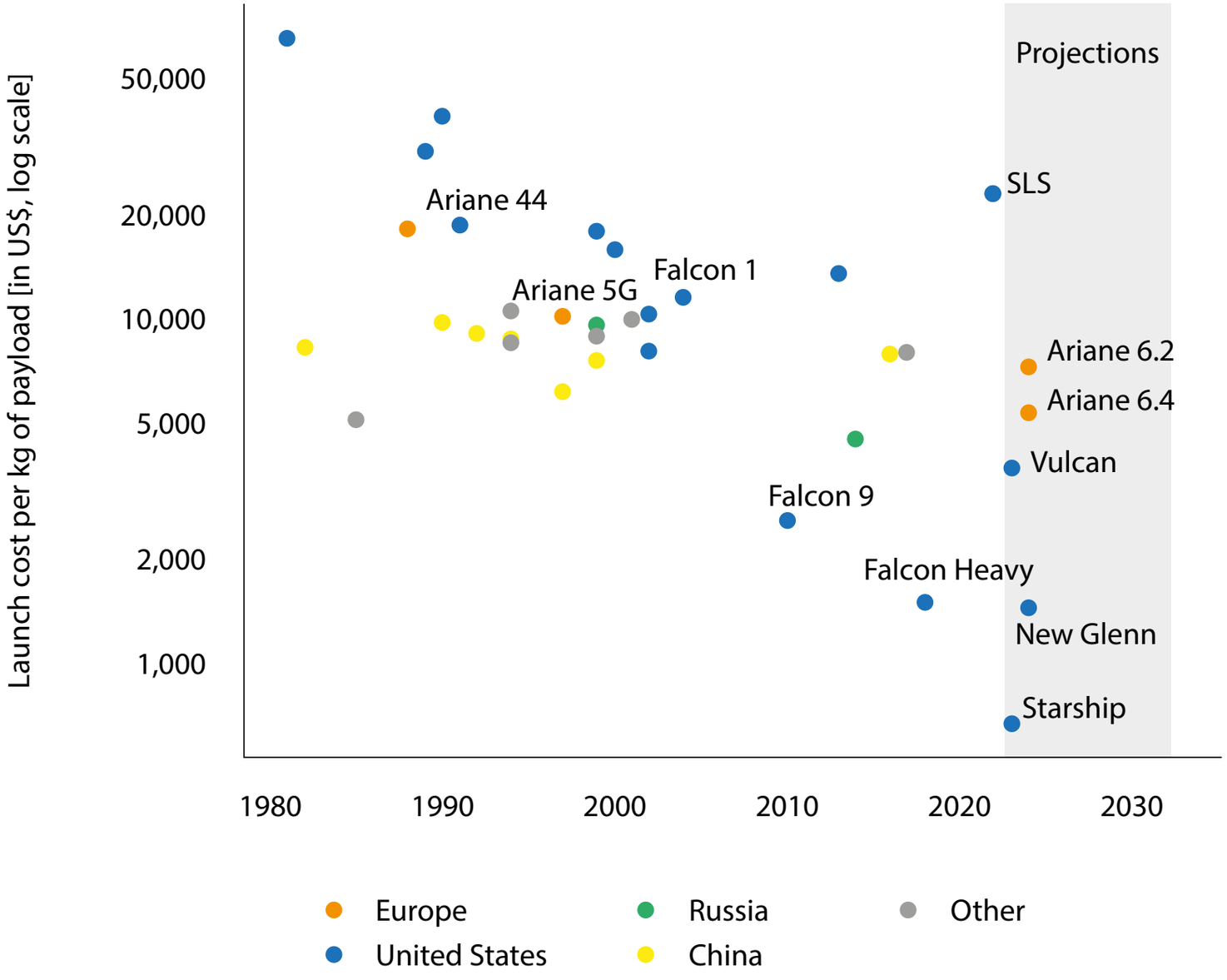
However, in response to the sanction imposed on Russia after the invasion of Ukraine, Roscosmos halted Soyuz launches from the European launch site in French Guiana[1]. Meanwhile, the lifecycle of Ariane 5 is reaching its end; and has made its last flight[2]. Its replacement, Ariane 6, is delayed for at least two more years, leaving Europe without domestic medium and heavy lift capacity for the first time in half a century.

Ariane 5 was already struggling to compete with a new generation of cheaper, partially reusable rockets such as SpaceX's Falcon 9 (Figure 1). Ariane 6 has been designed for a different era, lacking the inherent reusability and cost-effective production processes that define newer generations of rockets[3], and risks being obsolete when it finally does debut. CCTI is a serious attempt to address these issues and carry out a structural reform of the launch market in Europe.

Europe wants NASA's success

The establishment by NASA of COTS was a key element in the US space revolution of the late 2000s. COTS aimed

Figure 1. Cost of transporting payload to outer space for medium and heavy launchers



Note: Medium and heavy launchers are defined as those able to carry at least 2,000kg into low Earth orbit. Year indicates the year of the first successful launch or the predicted year of the first mission. Historical data is adjusted for inflation.
Source: Bruegel.

to incentivise private companies to build vehicles for cargo delivery to the ISS, with NASA acting as the anchor customer in a competitive process.

Through the subsequent Commercial Resupply Services (CRS) programme, which started in 2008, NASA procured delivery services at fixed prices, departing from its previous practice of cost-plus contracts, where firms were de facto insured by NASA against risk and therefore had no incentive to cut costs.

This new and focused approach to procurement proved successful (Weinzierl, 2018; Vernile, 2018). The COTS and CRS programmes have inspired other federal agencies in the space domain, including the American Space Force – a novel structure merging several programmes in the US defence administration – to proceed with dedicated, pro-competition procurement practices, starting in 2024[4].

Updated CRS contracts will be issued for resupply of the ISS in 2024, and are expected to be renewed until 2030, when the ISS is scheduled to be shut down[5].

Europe's CCTI looks a lot like a European version of COTS and CRS combined. ESA has called for proposals for commercial cargo services to low Earth orbit (LEO)[6]. The immediate goal is to provide private companies with support to provide commercial transportation services to ISS before 2030 and then to 'future commercial LEO destinations' after 2030.

ESA is committed to providing resources to ISS including oxygen, food and materials for its astronauts and the scientific activities on the station. ESA also needs periodically to transport cargo back to Earth.

Europe can use US services for some of these missions but the strategic importance of cargo transportation into orbit, beyond the ISS, necessitates Europe's active involvement, rather than relying on others.

The development of an ecosystem of private launchers can serve as a catalyst for the advancement of the whole space industry and is also crucial for European's defence capabilities[7]. CCTI should be viewed as a tool to commercialise the European launcher sector and by extension the whole space industry, rather than just a procurement programme.

CCTI: an assessment

CCTI will have three phases. In phase 1, one or two companies will be selected to design a cargo delivery system and secure third-party financing. This phase will end in mid-2024 and is the only phase with a known budget: €2 million. This figure appears meagre, even for preliminary design and fundraising. However, it is in phases 2 and 3 that substantial funding will be needed.

In phase 2 (ending in 2025), system design and tests will be finalised. Phase 3 will be the final step in the procurement process and will be open to all companies (not just those selected for phases 1 and 2). During phase 3, a demonstration mission to the ISS is expected to be carried out before the end of 2028. Funding for phases 2 and 3 will only be agreed at the ESA Ministerial Council in 2025.

In our view, the CCTI faces two main challenges. First, the funding provided by the public sector is uncertain. Second, similar uncertainty applies to private involvement and investment. On funding, the lack of information about the financial allocation for phases 2 and 3 or the overall funding amounts makes it difficult for private companies to assess the feasibility and potential returns on their investment, potentially reducing their willingness to participate.

If the aim of CCTI is to create a thriving commercial private space launch industry in Europe, the funding policy must be robust enough to propel European companies to the forefront of the New Space sector.

European companies would then be able to compete with US companies in the most innovative areas, such as designing fully reusable rockets. It is worth noting that during the COTS programme, NASA distributed $821 million to two companies (SpaceX and Orbital) (NASA, 2014). This may give an idea of the scale of funding Europe will need to offer.

The unknown size of public funding is also problematic because stimulating competition between European companies requires sufficient funds to attract new entrants. Recall that CCTI phase 3 is open to all companies, not just those selected for phases 1 and 2.

Assuming that phase 1 selects entrants, the amount of financing provided may not be enough to allow them to compete equally in phase 3 with established players like Arianespace and Thales Alenia. In this case, the CCTI would be considered a failure, as contracting incumbent companies directly would be a cheaper way to achieve the same goals.

The second challenge is the uncertain role that private investment will play in the initiative. The original COTS programme and the CCTI require companies to find their own private funding. Through COTS, NASA provided less than half of the cost for development of each procured transportation system and SpaceX mobilised around $454 million (NASA, 2014).

Remarkably, this occurred when investment in start-up space companies was very low: between 2006 and 2010, total global investment in space companies was estimated at about $6 billion (Christensen *et al* 2016).

The small investment pool in the US in the late 2000s mirrors the current situation in Europe. Total private investment in the European space sector in 2022 was only €1 billion, making it a small market compared to the US, which in 2022 was worth six times more (ESPI, 2023).

COTS can be viewed as one of the levers stimulating American private investment growth since 2010. Questions remain if European space companies will be able to secure private funds needed for the success of the programme and how this will affect European private investment in the future.

Private investment is driven, among other factors, by potential profits. However, the future market size for services contracted via CCTI remains uncertain. The timeline for the first CCTI demonstration mission to the ISS in 2028 raises concerns for participating companies because the ISS is scheduled to close by the end of 2030.

With less than two years' worth of transportation contracts to an existing station (assuming an optimistic scenario of no delays), companies may find it difficult to generate substantial returns on their investments. The ESA CCTI call mentions there could be more contracts for deliveries to 'commercial LEO destinations', but their deployment is highly uncertain and heavily reliant on the US private sector.

Additionally, European transportation providers co-funded by CCTI will face stiff competition from US private companies when they offer commercial services outside the CCTI.

Many projects related to commercial LEO destinations are currently being developed by US companies with experience in the launching industry. Potential European transportation providers will thus compete with companies that not only designed the space stations but also possess the capability to transport cargo independently.

Such established players may have inherent synergies that could give them a competitive advantage over European firms that want to participate in the CCTI.

Uncertainties ahead

The ESA is thus asking private investors to make a leap of faith. Effectively, instead of acting as an anchor customer for companies, ESA is asking the private sector to fulfil that role, so it can demonstrate to ministers in 2025 that the private sector is serious and worth investing in.

The uncertainty characterising CCTI stems more from the institutional and financing arrangements on which ESA is built, which cannot be fully mitigated by the goodwill and genuinely forward-looking approach of the agency's planners.

ESA is unique because of its international character. But this feature comes with costs, and ESA has never been able to gather resources comparable to those of its counterparts (ESA's 2022 budget was €7.15 billion compared to €22.86 billion for NASA).

Every budget decision has to be approved by the ministerial council of 22 country representatives. This makes it difficult for ESA to put adequate money on the table. However, it is clear that the private sector will need more clarity about the size of the subsidies from ESA and the overall involvement of the public sector.

It is also important to acknowledge that while addressing procurement is crucial, it is not the only solution for Europe's challenges in the space sector. The technological gap and institutional complexities require serious, high-level political thinking that cannot be delegated to agencies.

EU countries must engage actively in strategic planning and decision-making to overcome these hurdles. To ensure the success of European space industrial policy, it is necessary to tackle not only the procurement aspect but also to invest in research and development to bridge the technological gap.

Streamlining institutional processes and promoting collaboration between European countries are also essential to achieve a cohesive and competitive space sector. ■

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2. Mike Wall, 'Watch the last-ever launch of Europe's powerful Ariane 5 rocket on July 5 after delays', Space, 4 July 2023

3. Eric Berger, 'Europe's Ariane 6 rocket is turning into a space policy disaster', Ars Technica, 18 April 2023.

4. Sandra Erwin, 'Space Force weighing new approach for selecting national security launch providers', SpaceNews, 13 January 2023

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6. The China Manned Space Agency (CMSA) issued a similar call in May 2023. The Chinese agency is looking for cargo-delivery services to the Tiangong Space Station, China's low-cost alternative to ISS, built in 2021. CMSA seeks established companies with the capability to launch and transport cargos of no less than 1,800kg to Tiangong at a maximum price of $16.88 million per 1,000kg. See Andrew Jones, 'China calls for space station commercial cargo proposals', SpaceNews, 16 May 2023.

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Lessons from the Germany shock

Harald Fadinger, Philipp Herkenhoff and Jan Schymik evaluate the German labour market reforms of the early-2000s and the consequences of uncoordinated economic policies in a currency union

As the world emerges from the COVID crisis, it is witnessing a resurgence of industrial policy in affluent countries, including the Inflation Reduction Act and the CHIPS Act in the US. These developments are putting pressure on EU members to also engage in industrial policy measures. This column evaluates the impact of Germany's early-2000s labour market reforms on the broader euro area. The findings underscore the importance of coordinated EU-wide policies.

Industrial policy is experiencing an unprecedented comeback in affluent countries (Juhasz *et al* 2023). The US Inflation Reduction Act (IRA) bill alone consists of an estimated $780 billion subsidy package to clean-tech production and investment, largely through tax credits, while the subsidies under the CHIPS Act amount to $50 billion.

Using simulations based on a structural model of international trade, Attinasi *et al* (2023a, 2023b) indicate that the effect of the IRA on the EU is sizable, lowering EU output by between 0.5% and 3%, with varied sectoral impacts.

The EU also provides a substantial level of green subsidies already today. While the level of these subsidies is roughly similar in size to those granted by the US, the EU lacks a flagship green subsidy scheme; most green subsidies are given as part of a multitude of initiatives at the national or EU level (Kleimann *et al* 2023).

Moreover, the planned policy responses of EU member countries to the IRA are also highly heterogeneous. While some countries, such as Germany, have individually drafted large subsidy schemes, poorer EU countries or economies with less fiscal space have hardly responded to the IRA.

The German government has proposed an 80% electricity price subsidy for heavy industry (*Industriestrompreis*), which carries a €30 billion price tag. It has also drafted subsidy plans for clean production in heavy industry worth

around €20 billion and €20 billion of subsidies have already been earmarked for chip production plants, of which €10 billion alone will go to Intel.

This disparity can threaten the EU's internal competitiveness. Producers in the EU are not only competing with Chinese and US producers, but there is also harsh competition for the location of industrial activity between EU economies themselves. Consequently, uncoordinated industrial policy within the EU will likely also have negative consequences due to negative internal spillovers.

Industrial policy should be done mostly at the EU level instead of at national level to prevent fragmentations of the European Single Market

Lessons from the past: the transformation of the German economy from the 'sick man' of Europe

To quantitatively assess the potential impact of such unilateral policies within the EU, we reflect on the EU's recent history. In a recent paper (Fadinger *et al* 2023), we evaluate the impact of Germany's early-2000s labour market reforms on the broader euro area. In the aftermath of these reforms, German manufacturing surged while manufacturing in the rest of the euro area experienced a significant contraction.

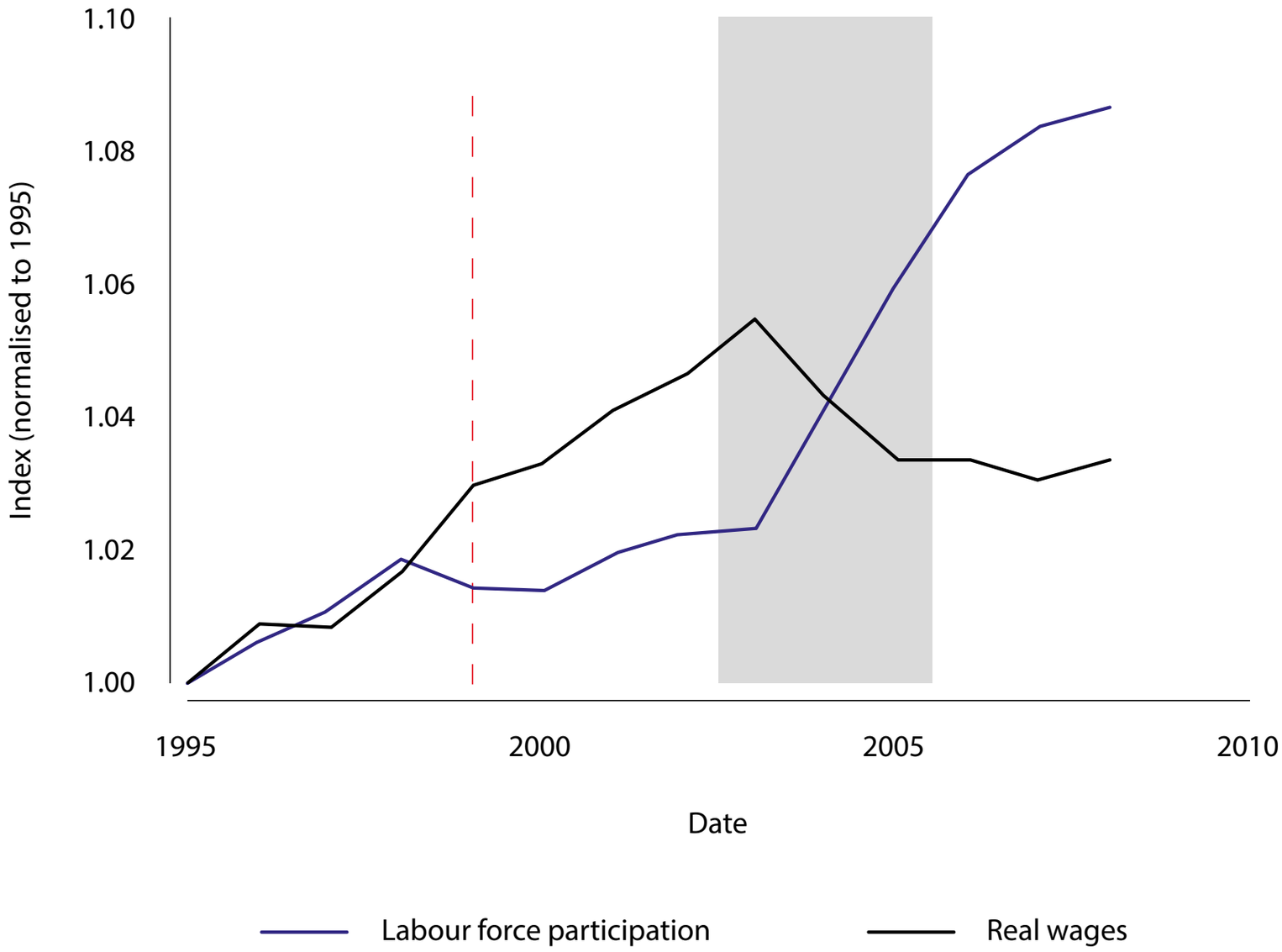
In the 1990s, German firms increasingly embraced wage flexibility and distancing from collective wage agreements. Additionally, a series of major labour market and social insurance reforms were implemented from 2003 to 2005 (the Hartz reforms and others).

These reforms incentivised labour force participation, for example via an increase in the pension age and stricter eligibility requirements for access to disability benefits, while curbing the generosity of unemployment insurance.

Following the implementation of the reforms, labour force participation increased strongly in Germany while nominal wages stagnated. These developments were reflected in a real depreciation of German goods relative to those of other euro area economies, implying a large gain in German manufacturing competitiveness within the euro area.

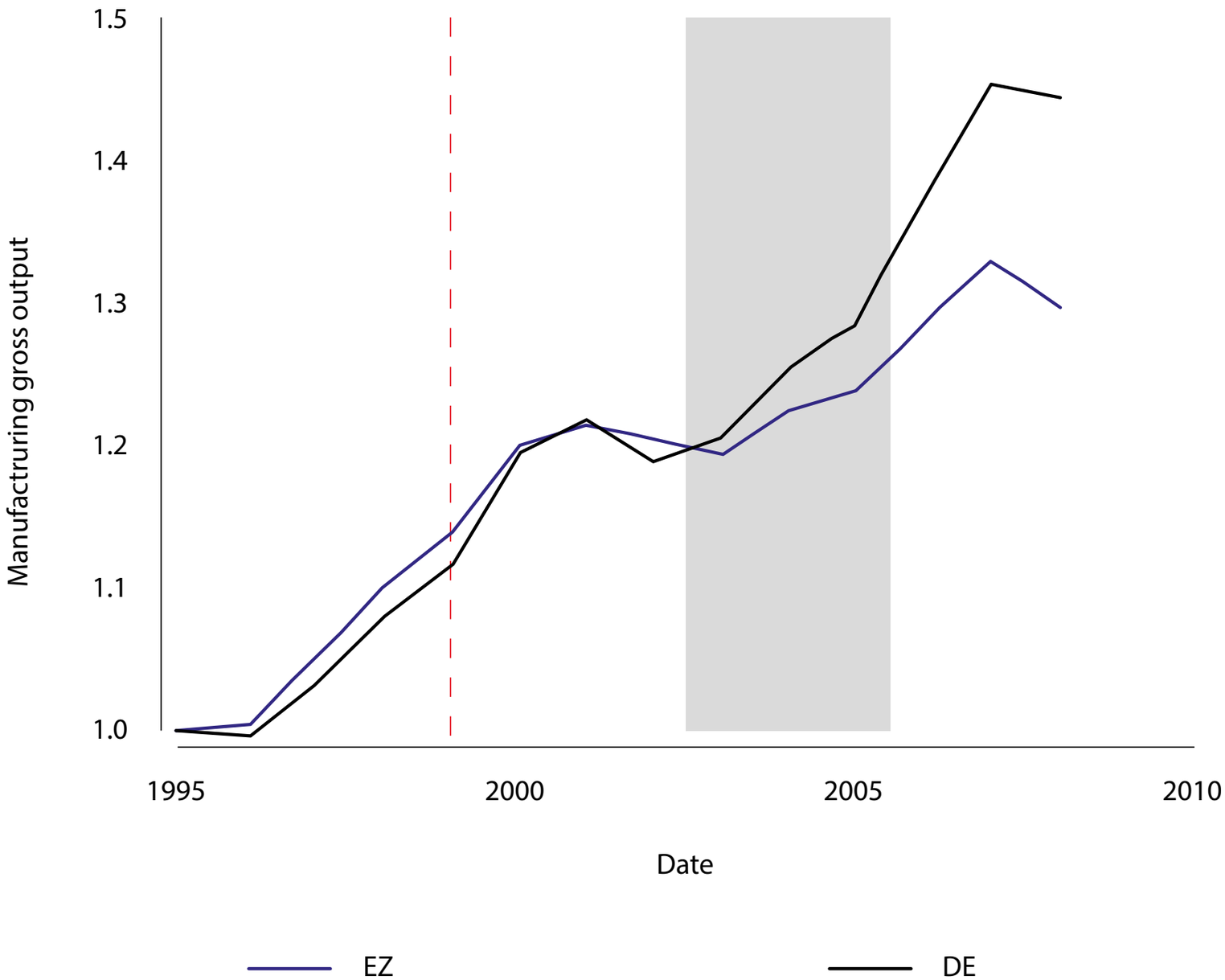
Drawing from approaches by Autor *et al* (2013) and Acemoglu et al (2016), we examine the impact of intensified trade competition from Germany on euro area employment and wages. Sectors more exposed to German competition faced significant employment declines, especially after the introduction of the euro, with nominal wages remaining largely unresponsive.

Figure 1. Labour force participation and real labour costs in Germany



Notes: The figure plots indices of labour-force participation and real labour costs in Germany. Index values are relative to the base year 1995. Labour-force participation is based on OECD data for working ages 20-64 years and real wages are deflated labour compensation per employment, using EU KLEMS data.

Figure 2. Manufacturing output in the euro area



Notes: The figure plots indices of real gross output in manufacturing in Germany and the rest of the EZ. Index values are relative to the base year 1995, using EU KLEMS data.

On average, increased German competition led to an estimated 6% dip in manufacturing employment in the rest of the euro area.

We then quantify the consequences of this German shock in general equilibrium, using a quantitative New Keynesian multisector model of international trade that builds on the work of Rodríguez-Clare et al (2020).

It features multiple sectors and an input-output structure akin to Caliendo and Parro (2015) and additionally incorporates downward nominal wage rigidities (DNWRs) à la Schmitt-Grohé and Uribe (2016). These rigidities lead to sluggish downward adjustment of wages over time, resulting in temporary involuntary unemployment.

We extend that model in three aspects that are relevant to our research question. First, we allow for time variation in the utility value of staying out of the labour force, since German structural reforms increased incentives to actively participate in the labour market.

Second, we introduce unemployment benefits to account for variation in unemployment insurance replacement rates.

Finally, we introduce a savings decision and international trade in bonds to generate an endogenous adjustment of countries' current accounts, as the same period was marked by a growing German current account surplus.

With the help of our structural model, we can back out the nature of the Germany shock caused by the reforms. First, we estimate nominal wage rigidities for euro area economies and find significantly smaller DNWRs for Germany compared to all other euro area countries.

Second, we back out shocks to the utility from not participating in the labour market based on variation in labour force participation and expected real wages. Following the reforms, German workers experienced a 25% reduction in the utility value of staying out of the labour force, while the rest of the euro area experienced no such shock.

Third, we directly feed in data on replacement rates to assess the role of less generous unemployment insurance. Time series of replacement rates show a strong reduction in the replacement rate for Germany starting with the Hartz reforms in 2003.

We also assess the role of the German savings glut through the lens of our model. Around the introduction of the euro, German investors put a greater weight on current consumption compared to consumption in future periods, which led to increases in international saving over time.

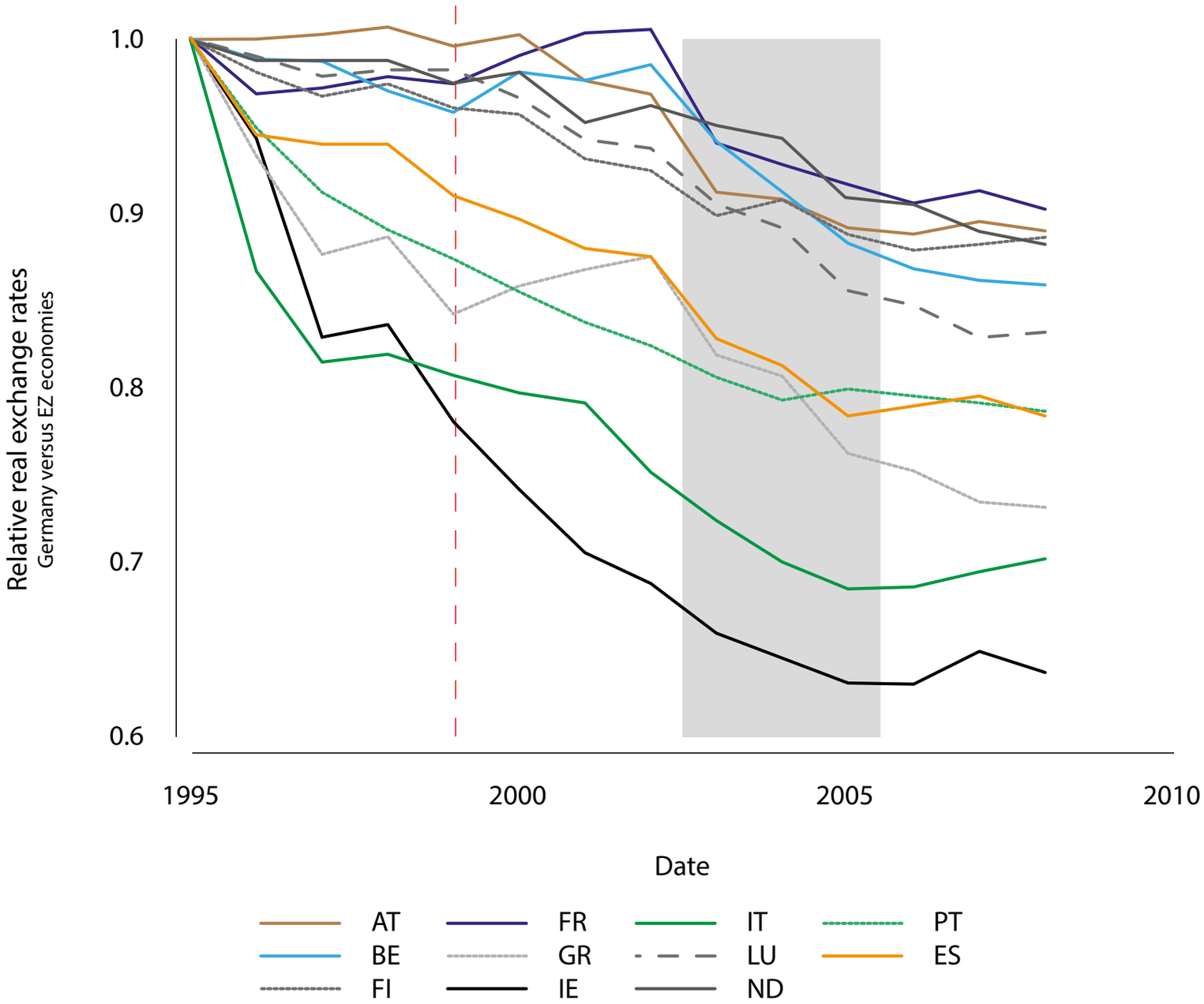
Together with investors' desire to smooth the temporary positive income shock caused by increased labour supply, this contributed to the large increase in the German current account surplus.

Lastly, we find that productivity and trade costs in Germany evolved similarly to those of other euro area economies, and thus cannot explain the German export boom.

Our model suggests that the German competitiveness shock, combined with the fixed-exchange regime, essentially reallocated unemployment from Germany to other euro area members. Economies with a similar industrial structure were most exposed the German competitiveness shock, as these economies experienced a greater contraction of their export demand.

In the euro area's fixed-exchange regime, immediate wage adjustments were stifled, causing short-term involuntary unemployment that only subsequently died out over time.

Figure 3. Real exchange rate fluctuations in the euro area



Notes: The figure plots indices of real exchange rates for EZ economies relative to the German real exchange rate. Relative real exchange rates are defined as the German expenditure-based price level of GDP in purchasing power parities relative to the price level of respective EZ economy using data from the Penn World Tables 8.0. Decreases in the relative real exchange rate imply a relative loss in trade competitiveness of the respective EZ economy.

Using our structural model, we can evaluate alternative policies to deal with the unilateral German competitiveness shock. In the absence of nominal wage rigidities, wages may have declined to clear labour markets and thus prevented involuntary unemployment.

Alternatively, we consider the impact of coordinated labour market reforms. Structural divergences between euro area member states can contribute to nominal and real divergences and prevent euro area convergence (Eriksgård Melander *et al* 2019). We study a counterfactual where all euro area member economies conduct reforms identical to those implemented by Germany.

This counterfactual results in lower unemployment and a large increase in labour force participation, employment, and output across euro area economies, highlighting the importance of coordinated labour market policies within the currency area.

Furthermore, we find that a higher average inflation might have offset the adverse effects of the German shock for the rest of the euro area.

Key take-aways from the Germany shock for today

How can we relate these findings to the current drive for large, but largely uncoordinated, industrial policy initiatives in the EU? While these policies will likely mitigate the impact of the IRA on EU manufacturing production, as currently designed, they will also likely cause significant reallocation of economic activity and negative distortionary effects within the EU.

Countries with large fiscal capacity, in particular Germany, will likely benefit at the expense of their poorer neighbours. This could lead to significant tensions within the EU, and the euro area in particular.

To avoid such effects, industrial policy should be done mostly at the EU level (if at all) instead of at national level to prevent fragmentations of the European Single Market. ■

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In for a penny, in for a pound

The EU's Stability and Growth Pact has been struggling with enforcement since inception. Georg Kirchsteiger and Martin Larch consider the enforcement dilemma of EU fiscal rules

The EU's Stability and Growth Pact has been struggling with enforcement since inception. Although some member states honour the EU's fiscal rules more by their breach than their observance, financial sanctions under the Pact have never been applied.

This column argues that their effectiveness is overshadowed by the understanding that, in the event of a major economic shock, virtuous countries will come to their rescue to ensure the survival of the entire system. Unless this underlying issue is addressed, the effectiveness of financial sanctions will remain limited.

The effectiveness of fiscal rules crucially hinges on their enforceability. This notion looms large in the relevant literature starting with the seminal work by Kopits and Symansky (1998), who characterised the stylised profile of an 'ideal' fiscal rule. It also applies to the Stability and Growth Pact (SGP), a coordination device of the EU aimed to ensure the smooth functioning of the Economic and Monetary Union (EMU)[1].

From today's perspective, the track record of the SGP has been mixed at best. Since inception, some member states have regularly and significantly deviated from the course of action implied by the EU fiscal rules (Larch *et al* 2023). Yet, despite a dismal compliance record by a comparatively small group of countries the EU never managed to deploy the financial sanctions set out in the SGP.

Right now, the EU's fiscal framework is on the cusp of a new legislative reform – the fourth – where the objective of strengthening enforcement features prominently once again. The official narrative underpinning the reform proposal underscores stronger enforcement via a more consistent recourse to financial sanctions as the necessary counterweight to more flexible and country-specific fiscal adjustment requirements.

Drawing on basic elements of game theory, in a recent paper we show that all valiant attempts to strengthen the SGP's enforcement will produce limited effects unless a number of politically charged but fundamental issues are addressed (Kirchsteiger and Larch 2023).

The EU needs to find credible ways to (i) consistently impose meaningful sanctions in the event of non-compliance; (ii) link financial support in the wake of major shocks to a meaningful but not too harsh degree of macro-conditionality; and, most importantly, (iii) strengthen the resilience of member states to major economic shocks.

Very little progress is being made towards strengthening the resilience of EU member states to major economic shocks. In particular, elements fuelling the bank-sovereign doom loop remain largely unaddressed

The underlying problem of the SGP's enforcement dilemma is straightforward: countries with a time-tested preference for looser fiscal policy know the risks of non-compliance with the EU fiscal rules are not random, ensuring a blocking minority against the imposition of sanctions.

They also know that in the event of a very large negative shock, their own fiscal vulnerability can produce collateral damage for the fiscally prudent countries. Hence, when standing on the brink of a much bigger adversity, the prudent countries will accept paying for the survival of the EMU even if they formally committed not to do so.

A brief flashback

The SGP's enforcement dilemma has deep roots. It originates in the diverging motivations of the 12 member states who in the early 1990s decided to introduce the euro. Countries with a propensity to run government deficits supported the introduction of the single currency because, weary of trailing the low inflation policy of the Bundesbank within the European Exchange Rate Mechanism (ERM), they wanted to have a say in the prospective joint monetary authority.

In contrast, the Deutschmark bloc, who had enjoyed macroeconomic stability for some time already, wanted to extend its model to the EU as a whole. In essence, two distinct groups of countries sought to export their respective approach of macroeconomic policy making to the other (eg. Lucarelli 2013, Buti and Larch 2019)[2].

The governance framework emerging from this collision of diverging motivations seemed to tick all boxes necessary to dissuade countries from flouting the fiscal rules: it defined a strict mandate for the ECB with a clear and sole focus on inflation, outlined a procedure for correcting excessive government deficits in the member states – including financial sanctions – and banned any form of monetary financing or bailouts of governments.

In addition, to assuage remaining concerns, the then German Finance Minister Theo Waigel convinced his peers and EU leaders to adopt additional legislative provisions aimed to ensure budgetary discipline beyond the broad perimeters set out in the Treaty – the SGP was borne.

The dilemma of SGP enforcement dissected

The dilemma of SGP enforcement can be illustrated by a simple stylised model[3]. Think of the EU as two groups of countries: Group D tends to run deficits and accumulates growing levels of debt, while Group S runs sustainable fiscal policies[4]. The implementation of the SGP can be characterised as taking place in three stages.

In stage 1 – it can encompass several annual EU surveillance cycles – Group D decides whether to run a budget deficit or a more prudent fiscal policy. Based on experience, Group D has an incentive to run deficits, ie. it expects some immediate (economic or political) payoff.

If Group D's policy choices lead to an excessive deficit and the governments do not take corrective measures, the Council of the European Union can impose a fine.

In stage 2, a negative shock hits. If Group D implemented prudent policies in stage 1, it would be able cope on its own regardless of the size of the shock. In contrast, if Group D runs deficits, it is in trouble and can ask Group S for help.

In the event of a major downturn, the reassessment of sovereign risks by financial markets makes the fiscal position of Group D unsustainable, producing negative spillovers on Group D through contagion effects threatening the stability of the EMU as a whole.

If Group D asks for help in stage 2, Group S decides whether to help or not in stage 3. If it agrees to help, EMU meltdown is averted. Group S bears the costs of the transfer but attaches certain conditions, which produce social and political costs in Group D.

Figure 1 summarises the different stages of our simple model. The outcome of the strategic interaction between the two groups of countries is revealed by reasoning backward from stage 3.

In the event of a major economic downturn, the EMU can collapse for two reasons: either Group S refuses to step in, or Group D does not ask for help. It is plausible to assume that the collapse of the EMU is the worst outcome for Group S. Hence, it will decide to help in stage 3 as long as the transfer to Group D is lower than the damage caused by the EMU collapse.

Group D will ask for help in stage 2 if the macro-conditionality attached to the transfer is not heavier than the costs of lifting the burden alone. This also means that Group S has an incentive not to make conditionality too harsh, because otherwise Group D may refuse help.

An interesting corollary of this is that an external power intent on weakening the EU may have an interest in promising help to Group D.

Finally, in stage 1, Group D will decide to run a prudent fiscal policy only if the costs of a possible fine and of macro-conditionality exceed the short term (economic or political) benefits of running a deficit.

Since by experience Group D is likely to form a blocking minority in the Council against fines, the decision of pursuing prudent fiscal policies versus accumulating debt boils down to the type of macro conditionality attached to transfers from Group S.

Figure 1. Stylised presentation of SGP implementation

Think forward

Stage (1) — Group D sets its fiscal policy

- Group D decides to either run deficits, which over time lead to an accumulation og government debt, or a more prudent course of action. This stage can encompass several annual budget cycles.
- By experience, Group D countires enjoy a short-term (economic and political) benefit from running deficits.
- The Council of the EU, which brings together Group D and Group S, can decide to impose financial sanctions in case Group D countries do not take measures to correct excessive deficits. The outcome of the vote is determined by the distribution of risks of non-compliance across countries.

Stage (2) — A major negative economic shock hits Group D and the rest of the EU

- Group D decides whether to ask the rest of the EU (Group S) for financial support.
- If Group D chooses a prudent fiscal ploicy in stage (1) it can weather the shock on its own.
- If Group D runs deficits in stage (1) the reassessment of sovereign risks by financial markets makes the fiscal position of Group D unsustainable, producing negative spillovers on Group S through contagion effects threatening the stability of the EMU as a whole.
- If Group D asks for financial support it has to accept policy conditions, which produces (economic and political) costs; see stage (3).

Stage (3) — Group S decides whether to offer financial support to Group D

- If Group S offers financial support, EMU meltdown is avertged.
- EMU meltdown is the worst possible outcome for Group S.
- Group S bears the costs of the financial support but attaches policy conditions, which produce social and political costs for Group D.

Reason backward

As long as Group D has a blocking minority in the Council, financial sanctions will not be applied. Hence, the decision of Group D mainly depends on the policy conditions in the event of a major economic shock.

As long as the costs of the policy conditions are not higher than the costs of lifting the burden alone, Group D will ask for financial support. Hence, policy conditions cannot be too strict (or a non-EU power may offer help).

As long as the cransfer to Group D is smaller than the cost of an EMU meltdown Group S will provide financial support if asked by Group D.

Note: The EU is assumed to consist of two groups of countries: Group D prefers running budget deficits; Group S prefers sustainable public finances

In sum, the dissuasive power of the EU fiscal rules is limited. First, deficit-prone countries command enough votes in the Council to block financial sanctions. Second, they know the EU will not seal its own demise by refusing financial support to troubled countries in the event of a major economic shock.

Finally, the macro-conditionality attach to financial support cannot be too strict because receiving countries my find them excessive or drive them into the hands of non-EU powers.

Conclusions

The stylised narrative emerging from our simple model nicely reproduces the main outcomes of SGP implementation since 1997. They highlight the impact of both the political economy in the Council and of systemic risks on the credibility of financial sanctions. They also raise the question of whether the SGP was not bound to fail from the start.

To be fair, the group of experts who prepared the blueprint for the EMU – the Delors Committee – had in mind a very different scenario. It did not anticipate the systemic risks that would afflict the EMU during the global financial crisis and after.

It also envisaged a completely different implementation of the excessive deficit procedure, namely one that would circumvent the political economy in the Council and rely on 'binding' and 'enforceable' instruments.

The advent of systemic risks and the political economy in the Council completely changed the enforceability of EU fiscal rules. Our simple model shows why. If we exclude shocks that threaten the existence of the EMU, a 'no-bailout' of Group D does not lead to the worst possible outcome for Group S. Second, Group D cannot block fines and the size of sanctions matters.

In the ongoing debate on how to reform the SGP, enforcement plays once again a key role. However, the reform proposal does not aim to address the issues that effectively weigh on the dissuasive power of sanctions.

Most importantly, the governance framework around the implementation of the SGP remains unchanged and the initial size of potential sanctions, which deficit-prone countries would have to weigh against the benefit of running deficits, is meant to be reduced.

At the same time, very little progress is being made towards strengthening the resilience of EU member states to major economic shocks. In particular, elements fuelling the bank-sovereign doom loop remain largely unaddressed.

As long as spillover effects from imprudent fiscal policies in individual member states are not mitigated, the threat of financial sanctions or harsh macro conditionality lack credibility. ■

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Endnotes

1. See Larch and Jonung (2014) for a succinct presentation of the SGP.

2. The architects of the EMU – the Delors Committee – were perfectly aware of the division of member states. A paper produced at the early stages of the committee's work explicitly acknowledged the "widely diverging 'propensities to run deficits' prevailing in the various European countries". It was this insight that finally led the committee to propose arrangements constraining fiscal policy lest the EMU encountered political tensions and/or pressure on the ECB to relax monetary policy.

3. The full model is presented in our Kirchsteiger and Larch (2023).

4. The exact composition of the two groups may change over time as individual countries can and have switched side, but each group usually safeguards at least a blocking minority in the Council.

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Making sense of the Commission's fiscal governance reform plan

The European Commission has proposed fiscal governance reform. Lucio Pench offers proposals to enhance institutional self-commitment to implementation, with reputational consequences for non-implementation

Executive summary

The European Commission's April 2023 proposals for the reform of European Union fiscal governance revolve around the principles of fiscal sustainability and national ownership.

While the criterion of sustainability is at the centre of the proposals, its practical implications for the assessment of compliance of national medium-term fiscal-structural plans with the new fiscal rules have been blurred by a proliferation of additional criteria or safeguards. These include a requirement for a country's debt level at the end of the medium-term horizon to be lower than at the beginning.

This Policy Brief argues that the fiscal sustainability criterion, which the legislative proposals formulate in broad qualitative terms (public debt being on *"a plausibly downward path … or … staying at prudent levels"*) can be operationalised to ensure the objective of de-risking of public debt, ie. the eventual removal of situations in which debt poses a high sustainability risk.

Specifically, for a plan to satisfy the sustainability criterion, it should ensure that the country in question graduates out of the high-risk category or does not fall into it.

It is further argued that the additional criteria or safeguards have limited value added and hamper the overall readability of the proposed reform.

This proliferation of criteria should not be taken as compromising the fundamentals of the reform, however: a careful textual and contextual reading of the relevant legal provisions allows for an 'overall assessment' by the Commission and the Council of the medium-term plans submitted by EU countries, in which compliance with the additional safeguards could be given a subordinated role relative to the sustainability criterion.

Ideally, a clarification of the methodology for assessing compliance with the debt-sustainability criterion would allow the additional safeguards to be dispensed with.

Political concerns lay behind the demand for additional safeguards, but these should be addressed through institutional rather than rule-based solutions. Implementation and enforcement will be critical.

This Policy Brief offers proposals to enhance institutional self-commitment to implementation, with reputational consequences for non-implementation.

The proposed reform lacks an explicit methodology by which EU countries' medium-term fiscal- structural plans will be assessed

1 Introduction

In April 2023, the European Commission published long-awaited proposals on reform of European Union fiscal governance – the system for monitoring the budgetary frameworks in EU member countries.

The proposed reform is informed by two high-level principles: fiscal sustainability and national ownership. Unsustainable fiscal policies in EU countries pose risks for the smooth functioning and ultimately the integrity of the euro.

This provides the rationale for an EU fiscal framework on the top of national frameworks put in place by countries according to their national preferences. Meanwhile, enhancing national ownership of the EU fiscal framework – meaning active buy-in and participation of EU countries rather than just a rule-taking role – is necessary for the framework to be implemented effectively.

Fiscal sovereignty in Europe's economic and monetary union, notwithstanding a prohibition on excessive government deficits, remains firmly in the hands of national governments.

Under the Commission's proposals, the two high-level principles would be delivered on by EU countries issuing medium-term fiscal-structural plans. These would set out fiscal-adjustment paths that reflect national preferences, subject to constraints intended to prevent risks to sustainability. Once endorsed by EU countries meeting in the Council of the EU, the adjustment paths in the plans would become the benchmark against which national policies are measured.

Compliance would then be assessed through a single indicator: primary expenditure net of discretionary revenue measures and cyclical unemployment expenditure ('net expenditure').

As the new approach can only occur within the boundaries set by the EU Treaty, the natural means of enforcement will be the existing Excessive Deficit Procedure (EDP)[1], under which countries with excessive debts can be required to take corrective action.

This includes retaining the 3 percent of GDP government deficit threshold, beyond which the EDP is triggered automatically for countries with debt in excess of 60 percent of GDP.

Prior to the publication of the proposals, the Commission set out the main elements and their underlying economic and political philosophy in an outline plan published in November 2022 (European Commission, 2022). EU finance ministers responded to this outline in a March 2023 communique (Council of the EU, 2023).

When the April 2023 proposals were published, they included a regulation amending the EDP and a regulation on the medium-term structural fiscal plans (European Commission 2023b, 2023c), thus encompassing the two 'arms' of the Stability and Growth Pact (SGP), which sets out the EU's fiscal governance rules.

In a number of respects, the April 2023 proposals differed from the reform that was communicated in November 2022. This reflected the need for legislation to be formulated differently to a policy communication, but some changes also arguably represent a substantive departure from the reform's high-level principles.

In particular, the proposed reform lacks an explicit methodology by which EU countries' medium-term plans will be assessed and adds new fiscal criteria EU countries must meet. These changes threaten to undermine the balance between fiscal sustainability and national ownership, compromising the latter without improving on the former.

This Policy Brief analyses the legislative proposals in light of the objective of guarding against risks stemming from irresponsible behaviour of fiscally sovereign countries, while giving those countries as much autonomy as possible to act according to their preferences.

It focuses in particular on the process prior to submission by countries of their medium-term plans and the European Commission's involvement in this, on the precise meaning of the sustainability criterion, and on potential tension between the main objective of the reform and new fiscal criteria included in the proposals.

2 Who needs early fiscal guidance?

The Commission's reform plan envisages countries with certain risk characteristics receiving guidance from the Commission before they draft their medium-term plans. Early guidance would take the form of a so-called 'technical trajectory', or a stylised simulation of a trajectory for the primary balance[2] that would ensure convergence of debt to prudent levels by the end of the adjustment period.

This has been criticised as an attempt by the Commission to pre-empt the choices of EU countries on how they intend to bring debt down to prudent levels, thus clashing with the principle of national ownership (Blanchard *et al* 2022). However, there are legal and technical reasons why the envisaged guidance is meant to be just that: only guidance.

Legally, the only reference for assessing a country's compliance with the EU fiscal rules is the adjustment path that is eventually included in the Council decision endorsing that country's medium-term plan. This is irrespective of what the early guidance issued by the Commission, or even the requirements on adjustment set in the legislation, might say[3].

Technically, the adjustment path eventually endorsed by the Council can be expected to differ from the Commission's technical trajectory, even if both are intended to satisfy the same sustainability criterion.

This is because the starting point for the Commission's projections are standard assumptions for the estimate of potential output, notably excluding the effects of reforms and investments (other than those already included in the Commission's short-term forecasts).

The Commission's projections also incorporate one-size-fits-all assumptions on the closure of the output gap, the response of (non-discretionary) revenue to the cycle and the size of multipliers. Inflation and interest rates are also projected based on (market-derived) assumptions.

But when these standard assumptions are replaced by assumptions reflecting country-specific situations, there may be valid reasons[4] why national plans differ from the projections.

To allow for this, the fiscal governance reform proposals envisage a technical dialogue phase, involving national authorities and the Commission services, before the official submission to the Commission of national medium-term plans.

Critics of the proposal who accuse the Commission of trying to pre-empt the choices of EU countries might have overlooked these legal and technical issues around the Commission guidance because they can only be inferred from a careful reading the legislative proposals and because they were only implicit in the November 2022 outline plan.

What did change, however, between the outline plan and final proposals, was the approach to selecting the countries that would be given 'technical trajectories'.

Selecting a subset of countries for early guidance based on risk characteristics makes sense, as higher risk justifies a greater degree of intrusiveness from the EU level. In its 2022 outline plan, the Commission said early guidance ('reference multiannual adjustment path') was intended for countries characterised by high or medium sustainability risk, according to the Commission's risk assessment methodology[5].

But the legislative proposals replaced this categorisation with one based on the Treaty reference values: the Commission would issue early guidance in the form of 'technical trajectories' to countries with debt in excess of 60 percent of GDP or a deficit in excess of 3 percent of GDP.

Singling out countries that are in apparent breach of the deficit and debt thresholds in the Treaty has the apparent advantage of simplicity. However, it creates potential confusion about the meaning of the risk signal, and, relatedly, of fiscal sustainability, which continues to be the central criterion for assessing fiscal-structural plans.

The reason for the potential confusion is that countries might have a deficit in excess of 3 percent of GDP or even debt above 60 percent of GDP while their fiscal trajectories do not pose risks to sustainability. Probably less frequently, countries might also have deficits and debts below the thresholds, but fiscal trajectories that do raise sustainability concerns.

The reason for this dissonance is that fiscal sustainability is essentially a directional concept, requiring the evaluation of the underlying trajectory of debt, which cannot be captured adequately by a snapshot figure for debt (and even less by that for a deficit).

In practice, how problematic is this change between the outline plan and the final proposals in the approach to selecting countries for early guidance? A tentative answer can be given by comparing the current positions of EU countries according to the deficit/debt classification and the sustainability risk classification (Table 1).

Table 1. Countries that would be selected for early guidance according to sustainability risk classification and deficit/debt classification

	Debt > 60% of GDP AND/OR *deficit* > 3% GDP (2024)	Debt < of GDP AND deficit < 3% of GDP (2024)
High sustainability risk (2033 horizon)	***BE***, EL, ***ES***, ***FR***, ***IT***, PT, ***HU***, SK	
Medium sustainability risk (2033 horizon)	DE, CY, HR, ***MT***, NL, ***SI***, FI ***PL***, RO	CZ, BG
Low sustainability risk (2033 horizon)	AT	DK, EE, IE, LV, LT, LU, SE

Source: Bruegel based on European Commission (2023a) and European Commission (2023e). Note: Countries underlined have debt > 60% of GDP, countries in italics have deficits > 3% of GDP.

The answer looks reassuring: nearly all the countries in the high or medium sustainability risk categories would be captured by the debt/deficit signal. Conversely, countries at low sustainability risk are generally shown to comply with the debt/deficit criterion.

Nevertheless, the comparison highlights two cases of misleading signals regarding the need for early fiscal guidance. Czechia and Bulgaria would not be issued technical trajectories, since currently their debts are below 60 percent of GDP and their deficits fall below 3 percent of GDP.

However, their fiscal trajectories are a cause for concern in the medium term, mainly owing to increasing pensions-related expenditure with no adequate measures being taken to contain it.

These cases could be characterised as 'false negatives'[6]. Austria, by contrast, would be a 'false positive': according to the sustainability risk methodology, its debt trajectory gives no reason for concern. However, Austria would be issued a technical trajectory because its debt ratio is currently in excess of 60 percent of GDP.

If 2022 observed data is applied instead forecasts for 2024, an even clearer false positive emerges. Estonia, the country with the lowest debt ratio in the EU, would be singled out for early guidance, owing to a deficit still in excess of 3 percent of GDP.

This would clearly make little economic sense. More generally, for a country with a debt ratio that is projected to stay below 60 percent, any fiscal trajectory that keeps the debt ratio below 60 percent (and the deficit ratio below 3 percent) should in principle be satisfactory.

Faced with such false positive cases, the Commission might wish to refrain from issuing early guidance, for example by indicating that any trajectory not in breach of the two numerical references would do. This would however contradict the ostensible prescription of the legislation.

To conclude, the change between the November 2022 outline plan and the April 2023 proposals in the approach to selecting the countries that should receive early guidance from the Commission has resulted in a degradation of the signal that guidance is supposed to give about the state and prospects of the public finance of those countries[7].

However, as long as fiscal sustainability remains the central criterion for the Commission to design the trajectories and, more importantly, for it to assess the actual fiscal plans submitted by EU countries, the loss of analytical rigour at the early stage of the process might be considered a relatively minor concession to a political demand for simple numerical benchmarks. It is important therefore to evaluate the sustainability criterion and its operational meaning.

3 Making sense of the sustainability criterion

At the core of the proposed new fiscal framework is a sustainability criterion, which is meant to serve two purposes. First, it is a requirement for the technical trajectory to be issued by the Commission in advance of the submission by EU countries of their medium-term plans. Second, it serves as a reference for the assessment by the Commission of the plans, with a view to eventual endorsement by the Council.

Reflecting these two different though related functions, the sustainability criterion is included in two separate chapters of the legislative proposal[8], with the same formulation (emphasis added):

"… whether the national medium-term fiscal-structural plan ensures that public debt is put or kept on a plausibly downward path by the end of the adjustment period at the latest, or stays at prudent levels …

"… whether the government deficit is maintained below the 3% of GDP reference value in the absence of further budgetary measures over a period of 10 years"[9].

As far as the technical trajectories are concerned, an annex to the regulation[10] gives two conditions for *"the methodology for assessment of plausibility"*:

"[the] public debt ratio should be declining, or stay at prudent levels, under the deterministic scenarios of the Commission's medium-term public debt projection framework described in the Debt Sustainability Monitor 2022;

"… the risk of the public debt ratio not decreasing in the 5 years following the adjustment period of the national medium-term plan is sufficiently low. The risk is assessed with the help of the Commission's stochastic analysis."

The provision on maintaining the deficit below the 3 percent of GDP threshold does not demand particular explanation. The meanings of 'downward path' or 'prudent levels', however, are left unspecified.

It seems reasonable to interpret the sustainability criterion on the basis of the Commission's medium-term risk-assessment methodology (European Commission, 2023a). This is based on a consideration of both the projected level of debt and its trajectory (augmented by the deterministic and stochastic stress tests referred to under the 'plausibility' qualification). This methodology allows operational meaning to be given to the notion of *"downward path … or … prudent levels."*

However, the application of this risk-assessment methodology to the assessment of the medium-term plans, rather than use for risk classification of countries, would require adaptation, which would need to be discussed and agreed.

The need to adapt arises because the original risk classification methodology is applied to a 10-year extension of the Commission short-term (two years) forecast with unchanged policies, whereas for assessing countries' plans,

it should be applied to a 10-year unchanged-policy extension of the plans, which themselves would contain the policy adjustment needed to reduce the sustainability risk.

The Commission might want to assess the plans simply by comparison with the technical trajectories, using an algorithm that simplifies the risk-assessment methodology. However, as explained in section 2, there are valid reasons why countries' plans might depart from the technical trajectories.

In the light of these lacunae in the proposed legislation, we have attempted to derive the sustainability criterion from the Commission risk assessment methodology (see the Annex for details). Specifically, a country's compliance with the debt-sustainability criterion is taken to mean it would avoid being classified as high-risk according to the Commission medium-term risk assessment methodology or, to put it concisely, de-risking of public debt.

Being based on a well-defined methodology, this definition would give a conceptually more robust answer to the questions that are bound to arise about the meaning of *"downward path … or … prudent levels"* than a simple reference to the technical trajectories produced by the Commission, for which the underlying algorithm, moreover, is left unexplained by the proposed legislation.

Whether explicitly deduced from the Commission risk-assessment methodology or inferred inductively from the design of the technical trajectories, the sustainability criterion is meant to be sufficient to ensure the de-risking of public debt.

However, in the legislative proposal the sustainability criterion is supplemented by additional fiscal criteria or 'safeguards'. These are examined in section 4.

4 Are the additional safeguards meaningful and worthwhile?

Like the sustainability criterion, the formulation of the additional fiscal criteria (or safeguards) plays two roles in the legislative proposal: as a requirement for the technical trajectories, and as a reference for the assessment of the medium-term plans.

However, the requirements for the technical trajectories include a criterion related to the growth of net primary expenditure relative to the growth of the economy, which is not found among the references for the assessment of the medium-term plans.

Moreover, its formulation does not make sense for countries for which debt is already on a trajectory that complies with the sustainability criterion, and it is redundant for the others[11]. Conversely, the references for the assessment for the medium-term plans include a criterion (related to the adjustment toward the 3 percent of GDP deficit threshold), which is not found among the requirements for the technical trajectories.

Moreover, its formulation potentially interferes with the EDP[12]. The formulation of these two criteria contains redundancies and inconsistencies that are likely to prevent their effective application.

The examination below therefore focuses on the two additional criteria that are meant to apply to both the technical trajectories and the assessment of the medium-term plans: the no-backloading criterion and the initial debt level criterion.

The first additional criterion can be interpreted as a reinforcement of the sustainability criterion, in the sense of avoiding backloading of the adjustment needed to reach the fiscal position that would satisfy the sustainability criterion:

"… the fiscal adjustment effort over the period of the national medium-term fiscal structural plan is at least proportional to the total effort over the entire adjustment period"[13].

In other words, while the overall amount of adjustment is meant to reflect national preferences subject to the constraint of debt sustainability, the distribution of the adjustment is expected to be broadly proportionate across the adjustment period, ie. one that avoids shifting the burden of the adjustment to the future[14].

The second additional fiscal criterion, by contrast, has the potential to interfere with the sustainability criterion. It relates to the (initial) level of debt:

"… the public debt ratio at the end of the planning horizon is below the public debt ratio in the year before the start of the technical trajectory"[15].

An immediate problem emerges in the case of countries that, based on their current positions, would be classified as low risk. For these countries, satisfying the sustainability criterion would essentially require confirming that the projected debt level will not exceed 60 percent of GDP and that the deficit will stay below 3 percent of GDP.

Adding a criterion requiring the debt ratio at the end of the adjustment period to be lower than at the start of it would amount to a fundamental distortion of the sustainability criterion. The case of Estonia (section 2) is illustrative.

Reading the additional debt level criterion in isolation would imply that Estonia, a low-risk country with one of the lowest debt ratios in the EU, should not contemplate any increase in the debt ratio from its current levels, eg. to finance a defence programme.

This would be clearly at odds with the rationale of the reform of fiscal governance – to ensure debt sustainability while otherwise giving countries the flexibility to set their own policies – and would arguably be even in violation of the general principles of proportionality and subsidiarity.

Less clearcut is the case of countries that are expected to adjust to put their debts on a downward trajectory in order to satisfy the sustainability criterion. It is essentially an empirical question whether or not the adjustment required to satisfy the sustainability requirement will be enough to bring the debt to its pre-adjustment level by the end of the adjustment.

For high-risk countries, satisfying the debt-sustainability criterion implies putting the debt ratio on an unambiguous downward trajectory. However, adding the condition that the debt ratio should be already lower at the end of the adjustment period than at the beginning may in some cases require additional adjustment, which might stand in the way of the reforms and investments that the proposed fiscal framework is meant to encourage[16].

In sum, the additional criterion related to the debt level at the end of the adjustment period appears superfluous, especially as the concern that governments may fail to adjust early enough is already addressed by the no-backloading criterion.

Arguably, however, the proliferation of criteria, likely motivated by political concerns (discussed below), would not, as currently framed, compromise the fundamentals of the proposed reform.

The reason for this is that the legislative proposal makes a clear distinction between: 1) the early guidance to be provided by the Commission in the form of technical trajectories, and 2) the medium-term plans submitted by countries for assessment by the Commission and eventual endorsement by the Council.

Although related, the two exercises are separate. Crucially, the difference extends to the role played in the two exercises by the sustainability criterion and the additional criteria. Compliance with the criteria is a requirement for the production of the technical trajectories by the Commission, but only a reference for the endorsement of the medium-term plans by the Council, following their assessment by the Commission.

Concretely, this means that even if the current formulation of the additional criteria is maintained, for the purposes of assessing and endorsing the plans, the Commission and the Council should be able to make an overall assessment of the medium-term plans submitted by EU countries, in which compliance with the additional fiscal criteria, in particular, the initial debt level criterion, could be given a subordinated role relative to the sustainability criterion.

The central role of the sustainability criterion conforms to the systematic logic of the reform. It is also supported by a careful reading of the proposed legislative provisions. In particular, the sustainability criterion is explicitly included among the requirements that EU countries shall comply with in the national medium-term fiscal plans, which is not the case for the additional fiscal criteria[17].

The proposed approach would therefore be in line with the terms of the proposed legislation. Moreover, it is clearly supported by a contextual or systematic interpretation, ie. one that is *"based on the premise that the legislator is a rational actor"* (Leanerts and Gutiérrez-Fons, 2013).

5 Conclusion and policy implications

The Commission's EU fiscal governance reform proposals revolve around the principles of fiscal sustainability and national ownership. While the criterion of sustainability remains at the core of the proposals, its practical

implications for the assessment of the compliance of national medium-term plans with the new fiscal rules have been blurred by additional criteria.

The blurring of the sustainability criterion corresponds with an apparent intent to downgrade the role of the Commission debt-sustainability methodology, which however remains the principal tool to give operational meaning to fiscal sustainability in a comprehensive and consistent manner.

However confusing, the departures from the sustainability criterion may be less important than they seem, as the letter and the spirit of the proposed legislation effectively allow the additional criteria to be set aside if an overall assessment of a country's fiscal plan concludes that it plausibly meets the requirement of ensuring that debt is set on a downward path, or stays at a prudent level.

To increase the conceptual consistency and the overall readability of the reform proposals, the following changes should be made:

- Restore the sustainability risk classification, which is regularly updated by the Commission in its Debt Sustainability Monitor, as the screening device for selecting the countries that should be issued with technical trajectories.

  Merging the high-risk and medium-risk categories could help assuage concerns about stigmatisation. If this move is considered politically not viable, it should at least be clarified that a deficit in excess of 3 percent of GDP should not be a sufficient reason for issuing a technical trajectory, if the country is classified as low risk.

- Clarify the methodology for assessing whether the debt sustainability criterion of *"plausibly downward path … or staying at prudent levels"* is satisfied, in particular how it relates to the analogous concepts in the Commission medium-term risk assessment methodology.

- Following a clarification of the methodology underlying the debt-sustainability criterion, do away with the additional criteria or safeguards, other than the no-backloading criterion. If an additional safeguard in the form of a numerical rule is considered necessary, this could be a requirement for the debt ratio to decline by 1 percent each year from the end of the adjustment period, for as long as it exceeds 60 percent of GDP.

There may however be an unstated reason behind the demand for additional safeguards: the concern that the Commission might not be sufficiently rigorous in assessing national medium-term plans, especially those of countries at high risk in terms of fiscal sustainability.

Guidance in the form of technical trajectories is meant to pre-empt gross slippages from the fiscal sustainability criterion before EU countries submit their plans for examination by the Commission and the Council.

However, as explained in section 2, this can only be indicative, for legal and technical reasons. The question is therefore how to allow 'reasonable' departures of the national plans from the technical trajectories while excluding abuse, ie. the endorsement of plans that ostensibly respect the sustainability criterion, but only as a consequence of biased macroeconomic and fiscal assumptions. This is essentially a question of judgement and therefore best addressed by institutional rather than rule-based solutions.

Three not necessarily mutually exclusive solutions suggest themselves:

- The Commission and the Council should assess plans and correct for bias, at least beyond a certain threshold. This is the natural solution consistent with the institutional balance in the EU Treaties, and explicitly envisaged by the Commission in its outline proposals of November 2022.

- National fiscal councils (independent fiscal institutions, IFIs) should be required to vet the national plans before their submission to the EU. The Commission in November 2022 envisaged the fiscal councils providing opinions on national plans as inputs into the Commission's and Council's assessments.

  The legislative proposals dropped this provision, probably reflecting the negative language on the IFIs in the March 2023 ECOFIN Council conclusions (Council of the EU, 2023)[18].

  However, one could expect a strengthening of the role of IFIs as a result of the proposal for amending the directive on budgetary frameworks, which the Commission presented at the same time (European Commission, 2023d). The proposed revision of the directive reflects the broader aim of enhancing national ownership of EU fiscal governance by favouring the development of complementary home-grown rules and institutions.

  In particular, the revision would allow IFIs to assess fiscal trajectories in the medium term, including in terms of de-risking of public debt, if there is a will to do so[19].

- An independent advisory body at EU level could provide an assessment of the plans, in particular for evidence of bias, ahead of the official assessments by the Commission and the Council. The Commission proposals do not elaborate on this solution.

However, the Commission's November 2022 outline proposals, and the text introducing the current legislative proposals[20], contain a reference to a possible review of the role of the Europe- an Fiscal Board (EFB), the Commission's in-house independent advisory body on fiscal policy surveillance.

The ECOFIN Council conclusions also suggested that *"a stronger role for the European Fiscal Board in the economic governance should be explored"* (Council of the EU, 2023). Upgrading the legal status of the EFB, currently based on a decision of the Commission in principle revocable at will, could be a significant step in this direction.

A final consideration relates to the exclusive focus of the additional safeguards that are being sought on the conditions that national plans should satisfy ex ante, as opposed to those for their implementation and enforcement.

However, as also acknowledged by the Commission in its review (European Commission, 2020), enforcement has been the weakest link of the entire EU fiscal framework, especially where it was most needed[21].

In the Commission's November 2022 outline plan, greater leeway for national governments in setting out adjustment was balanced explicitly by the recognition of the need for greater enforcement. In particular, the Commission envisaged that, in case of material deviations from the adjustment path in the national plan as endorsed by the Council, the opening of the EDP should be the default option, specifically, for high sustainability risk countries.

The legislative proposals for the reform of the EDP regulation essentially reflect the same position, in particular, by highlighting the risk to sustainability ('substantial debt challenge') as a discriminating relevant factor when deciding whether to open an EDP following a deviation from the adjustment path.

Experience however may suggest a certain scepticism about the effective willingness of the Commission and the Council to adhere to the prescription of starting an EDP for a country that has not breached the 3 percent of GDP deficit threshold.

The Treaty envisages this possibility for countries in breach of the 60 percent of GDP debt threshold, but the lack of specification of the conditions under which the breach of the debt threshold should lead to an EDP was long taken as a reason for ignoring the provision.

The attempt to operationalise the debt criterion of the EDP in the 2011 reform package known as the Six-Pack, through the so-called 1/20 debt reduction rule[22] was a failure, as ways were always found to avoid its application.

Following the protracted suspension of the EU fiscal rules since the outbreak of the COVID-19 crisis through recourse to the so-called General Escape Clause, some may even doubt the willingness of the Commission and the Council to place in EDP the countries still in breach of the 3 percent of GDP deficit threshold, in spite of the explicit commitment of the Commission to do so from 2024.

Enforcing fiscal rules on fiscal sovereigns is an inherently difficult, if not intractable, problem (Debrun and Jonung, 2019). An approach based on self-commitment and reputational consequences is more likely to work than one based on external impositions and sanctions.

The Commission in November 2022 was already clearly leaning in the direction of reputational sanctions, by acknowledging that macroeconomically visible pecuniary sanctions are counterproductive and symbolic penalties stand a better chance of being applied effectively.

Self-commitment and reputational consequences, however, should be enhanced at each stage of implementation and for all the parties involved. In this connection, while clearly not solving all problems, a useful initiative might be to revisit the European Council's 1997 resolution on the Stability and Growth Pact, in which, at the inception of the SGP, EU countries, the Council and the Commission committed to timely and rigorous implementation of the Pact (European Council, 1997).

The content of the resolution should be updated to reflect the reformed fiscal framework, eg. references should be updated to include the medium-term fiscal plans, and the conditions for triggering the EDP should include not only the breach of the 3 percent of GDP deficit threshold, but also a material deviation from the adjustment path in the plan, specifically, for countries with 'substantial debt challenges'.

Unambiguous commitments on the part of the Commission and the Council should help counter doubts about their willingness to open deficit-based EDPs, and to deploy the debt-based EDP to enforce the necessary correction of the deviations from the adjustment path in the medium-term plans.

In this connection, EU countries should vote in line with the proposals of the Commission to place a country in an EDP, including in cases of debt-based EDPs. A genuine commitment to enforce the new rules, grounded in fiscal sustainability and national ownership, seems a more promising reform avenue than insisting on the application of extra layers of rules that lack clear economic rationale and sincere political buy-in. ■

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Annex: Deriving the sustainability criterion from the Commission sustainability risk assessment methodology

The way the level of debt and its trajectory are jointly considered in the Commission risk assessment methodology combines two risk categorisations: one based on debt thresholds and the other based on the shape of the trajectory. Specifically:

- Based on debt thresholds, countries are classified as high, medium or low risk, depending on whether the debt ratio at the end of the projection period is above 90, between 90 and 60, or below 60.

- Based the shape of the trajectory, countries are classified as high, medium or low risk, depending on whether the trajectory during the projection period is failing to decline (or declining only at the end of the projection period), declining at least from mid-point of the projection, or continuously declining throughout the projection period.

Note that projected debt levels and their trajectories are evaluated based on unchanged policies, ie. excluding the effect of measures additional to those already in place on the primary balance, which is the driver of the debt trajectory, given the assumptions on growth and interest rates. Note also that the projections assuming unchanged policies are made over a horizon of ten years from the end of the adjustment period.

Jointly considering the risk categorisation for the level of debt level and its trajectory allows for a consistent interpretation of the *"downward path … or … prudent levels"* sustainability criterion. Specifically:

- A country at high risk based on the projected debt level will satisfy the sustainability criterion only if the projected debt trajectory can be characterised as low risk. In other words, since the projected debt level cannot be considered prudent, the projected debt trajectory should be unambiguously downward;

- A country at medium risk based on the projected debt level will satisfy the sustainability criterion provided that the projected debt trajectory cannot be characterised as high risk. In other words, the projected debt level can be considered prudent if the projected debt trajectory is not upwards;

- A country at low at low risk based on the projected debt level will satisfy the sustainability criterion regardless of the projected debt trajectory. In other words, as long as the project- ed debt level can be considered to be unambiguously prudent, there is no reason to be concerned with the trajectory.

Having thus reached a preliminary risk classification based on the level of debt and its trajectory under the baseline projection, its plausibility is tested through stress tests, both deterministic and stochastic. Note that stress tests can only 'notch up' (but not down) the preliminary risk classification.

In particular, a country classified initially as at medium risk would be reclassified as high risk, if either one of the alternative deterministic stress tests or the stochastic stress test gives a high-risk signal[23].

A 'notching up' of the risk classification due to the stress tests implies that the country concerned should plan a larger adjustment in order to pass the stress tests. Note also that the construction of the stochastic stress test implies that, in order to comply with it, countries classified as medium risk on the projected debt level are effectively bound to exhibit a continuously declining debt trajectory[24].

Table 2 summarises the process for reaching a conclusion on the compliance of the adjustment path with the sustainability criterion[25].

Table 2. Assessing compliance with the sustainability criterion

Projected baseline debt level (10 years after the end of adjustment period)	Projected baseline debt trajectory (over 10 years from the end of adjustment period)	Stress tests on baseline projection (deterministic and stochastic*)	Compliance with sustainabilty criterion
Debt level staying above 90% of GDP (high risk)	Continuously decreasing trajectory (low risk)	No (alternative) deterministic scenario yielding high-risk classification for stochastic stress test giving high probability of debt not stabilising*	Compliance
		Any other case	Non-compliance
	Any other trajectory (medium or high risk)	Any	Non-compliance
Debt level staying between 60% and 90% of GDP (medium risk)	Continuously decreasing trajectory (low risk)	Any	Compliance
	Debt peaking by mid-point of projection y (or earlier) (medium risk)	No (alternative) deterministic scenario yielding high-risk classification for stochastic stress test giving high probability of debt not stabilising*	Compliance
		Any other case	Non-compliance
	Any other trajectory (high risk)	Any	Non-compliance
Debt level staying below 60% of GDP (low risk)	Any trajectory	Any	Compliance

Note: (*) The stochastic stress test is differentiated based on the initial, not end-period, debt level.
Source: Bruegel based on European Commission (2023a).

Note that compliance with the debt-sustainability criterion is taken to mean avoidance of high-risk classification according to the Commission medium-term risk assessment methodology or, to put it concisely, de-risking of public debt.

While this interpretation is not confirmed explicitly by the April 2023 draft legislation, only by keeping in the background the Commission risk assessment methodology it is possible to make overall sense of the proposal for the reform of the EU fiscal framework and in particular of the *"downward path … or … prudent levels"* sustainability criterion.

Specifically, readings of the sustainability criterion that ignore the Commission risk assessment methodology tend to run into internal inconsistencies. For example, it would hardly make sense to require a downward projected debt trajectory from a country with a projected debt level that is considered to be prudent, ie. staying below 60 percent of GDP, and therefore not to pose a risk to the euro.

Note also that, while not explicitly mentioned in the context of the *"downward path … or … prudent levels"* sustainability criterion, the relevance of the Commission risk classification, specifically, as regards the distinction between 'high risk' member states and the others, is confirmed by at least two provisions in the Commission reform proposals, namely, on the intensity of the reform and investment commitments required for an extension of the adjustment period[26], and on the materiality of a deviation from the adjustment path for the opening of an excessive deficit procedure[27].

In sum, a reading of the sustainability criterion in terms of de-risking of public debt, in turn operationalised based on the Commission risk assessment methodology, appears justified on both substantive and contextual grounds.

Endnotes

1. See https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact/corrective-arm-excessive-deficit-procedure_en

2. The legislative proposal (European Commission, 2023b, Art. 2) defines the technical trajectory in terms of "net expenditure", ie. primary expenditure net of discretionary revenue measures and cyclical unemployment expenditure. Taking into account the standard assumptions incorporated in the construction of the trajectory, net expenditure can be equated with the primary balance.

3. To illustrate with an example, the adjustment prescribed in the recommendation addressed by the Council to a member state country that is subject to the EDP will prevail over the general provisions of the EDP regulation on the content of such recommendation, such as the requirement for a "minimum annual adjustment of at least 0.5% of GDP as a benchmark".

4. The legislative proposal explicitly acknowledges the possibility for the adjustment plan to differ from the technical trajectory, while requiring the concerned member state to provide an economic justification (European Commission, 2023b, Art. 11 (2)): "Where the national-medium-term fiscal-structural plan includes a higher net expenditure trajectory than in the technical trajectory issued by the Commission pursuant to Article 5, the Member State shall provide in its plan sound and verifiable economic arguments explaining the difference".

5. The Commission's November 2022 outline plan used the terms "substantial debt challenge" and "moderate debt challenge", instead of 'high' and 'low' sustainability risk, which are the terms used in the Commission's risk assessment methodology (European Commission, 2023b). This Policy Brief retains the terminology of the Commission risk assessment methodology because it is clearer.

6. To some extent, the 'false negative' case of countries not captured by debt/deficit classification while being at medium or high risk according to the sustainability risk classification is addressed by the following additional provision on early guidance (European Commission, 2023b, Art. 7 (2)): "For Member States having a government deficit below the 3% of GDP reference value and public debt below the 60% of GDP reference value, the Commission shall provide technical

information regarding the structural primary balance necessary to ensure that the headline deficit is maintained below the 3% of GDP reference value without any additional policy measures over a 10-year period after the end of the national medium-term fiscal-structural plan".

7. One may wonder whether or not the result was intended. It is worth noting that the conclusions adopted by EU finance ministers (Council of the EU, 2023) following the presentation of the November 2022 Commission outline, do not contain demands in this sense. However, the change may reflect the concerns of countries keen to avoid the stigma of being labelled high risk in the application of the EU fiscal framework, for example because of a risk of downgrading by rating agencies. At the same time, countries with low debt may not be averse to, and may even welcome, early guidance from the Commission, for domestic political reasons, namely, in the expectation of receiving support for fiscal trajectories that are more demanding than objective consideration of sustainability risk would justify. This expectation however will be disappointed, if the Commission acknowledges that any trajectory will do, provided the breach of the two numerical references (60 percent and 3 percent of GDP) is avoided.

8. Respectively, Chapter III (The Technical Trajectory) and Chapter IV (National Medium-term Fiscal-Structural Plans), in European Commission (2023b).

9. European Commission (2023b), Art. 6 (a) and (b) and Art. 15 (2) (a) and (c). The provision on maintaining the deficit below the 3 percent of GDP threshold reflects the idea, already set out by the Commission in November 2022, that, irrespective of the degree of risk posed by the level and the trajectory of debt, the fiscal structural plan should ensure ex-ante respect for the commonly acknowledged reference limit for the deficit introduced by the Maastricht Treaty.

10. European Commission (2023b), Annex V.

11. The additional fiscal criterion, which applies only to the requirements for the technical trajectories, relates to the fiscal adjustment over the horizon of the plan (Art. 6 (e): "National net expenditure growth remains below medium-term output growth, on average, as a rule over the horizon of the plan". The formulation is equivalent to requiring a positive adjustment in the primary structural balance over the horizon of the plan. This is already required by the sustainability criterion if the country concerned has not yet reached the level of the primary balance resulting in a debt trajectory that

satisfies the "downward path … or … prudent level" condition. In this case, the additional criterion is simply redundant. However, if the country concerned has already reached the required level of the primary balance (for example, because its debt ratio is projected to stay below 60 percent), then the additional criterion should simply not apply.

12. The additional fiscal criterion, which applies only to the assessment of the medium-term plans, relates to the respect of the 3 percent of GDP deficit threshold throughout the duration of the medium-term plan (European Commission 2023b, Art. 15 (2) (b) and (c): "whether the government deficit is maintained below the 3% of GDP reference value throughout the duration of the plan or whether the government deficit returns swiftly below the 3% of GDP reference value at the latest by the end of the adjustment period when the deficit is above this reference value at the time of submission of the national medium-term fiscal-structural plan …" and "whether for the years that the Member State concerned is expected to have a deficit above the 3% of GDP reference value, and the excess is not close and temporary, the fiscal adjustment is consistent with the benchmark referred to under Article 3 of Council Regulation (EC) No 1467/97 on speeding up and clarifying the implementation of the excessive deficit procedure." The meaning of this criterion is difficult to ascertain, specifically, against the concurrent provisions in the same proposal and the EDP regulation. The sustainability criterion already contains a provision requiring that the fiscal position to be reached at the end of the adjustment period ensures that the deficit stays below 3 percent of GDP at unchanged policies for the following ten years. This requirement alone should be more than sufficient to ensure that a country starting from a deficit above 3 percent of GDP should be reducing it throughout the adjustment period. Therefore, the additional criterion appears redundant with respect to provisions already contained in the proposal. It also introduces a potential interference with the provisions in the EDP regulation. One could expect a breach of the 3 percent of GDP deficit threshold to result in the country concerned being placed in an EDP, in which case the fiscal adjustment would be exclusively dictated by the relevant EDP recommendation. Should the breach of the 3 percent of GDP deficit threshold not result in the country concerned being placed in an EDP (a carefully circumscribed possibility under the EDP regulation), this would signal that its public finance situation does not give cause for concern, in which case it would make little sense for the fiscal adjustment to be dictated by the law. In conclusion, the

additional criterion related to the 3 percent deficit threshold appears devoid of effet utile, if not actually contradicting other provisions of EU law.

13. European Commission (2023b), Art. 6 (c) and Art. 15 (2) (d).

14. A literal reading of the formulation of the no-backloading criterion would seem to allow for any distribution of the total adjustment within the default four-year adjustment period (while imposing that, in case of extension of the adjustment period to seven years on account of reforms and investments, broadly four sevenths of the total adjustment should take place in the first four years). A systematic and contextual interpretation of the legislation, as favoured in this Policy Brief, would solve the ambiguity (noted by Darvas, 2023).

15. European Commission (2023b), Art. 6 (d) and Art. 15 (2) (e).

16. Darvas et al (2023) presented simulations of the technical trajectories showing that France would be the only country for which the debt-level criterion would imply additional adjustment, in the case of a four-year adjustment period. Bulgaria would also be included, assuming that the criterion would apply also to low-debt countries, which is what its literal formulation would imply, but which would not make economic or legal sense, as explained.

17. European Commission (2023b), Art. 12: "The national medium-term fiscal-structural plan shall: (a) ensure the fiscal adjustment necessary to put or keep public debt on a plausibly downward path by the end of the adjustment period at the latest, or remain at prudent levels, and to bring and maintain the government deficit below the 3% of GDP reference value over the medium term." None of the additional fiscal criteria are included.

18. The Council conclusions explicitly stated that "IFIs should not play a role in the design phase of the national plans" (Council of the EU, 2023).

19. Specifically, Art. 8(4) of the revised budgetary framework directive entrusts the IFIs with "producing the annual macroeconomic and budgetary forecasts underlying the government's medium-term planning or endorsing those used by the budgetary authorities" and with "producing assessments on the impacts of policies on fiscal sustainability and sustainable and inclusive growth or endorsing those provided by the budgetary authorities". Moreover, Art. 8(5) prescribes that "Member States shall ensure that the budgetary authorities of the Member State concerned comply with

the assessments or opinions issued by the institutions in the context of the tasks referred to in paragraph 4. Where such budgetary authorities do not comply with those assessments or opinions, they shall publicly justify the decision not to comply within a month from the issuance of such assessments or opinions."

20. European Commission (2023b), Explanatory Memorandum, point 5.

21. "These observations … suggest the enforcement of the fiscal rules did not make a material difference in cases where the enforcement of fiscal discipline was most necessary" (European Commission, 2020, p.7).

22 The debt reduction rule, more properly characterised as a benchmark, since it provides a numerical trigger for the overall assessment of the case for opening an EDP, prescribes that the gap between a country's debt level and the 60 percent reference should be reduced by 1/20th annually (on average over three years).

23. Likewise, a country classified as low risk would be reclassified as medium risk if either one of deterministic stress tests gives a high-risk signal, or two of the deterministic stress tests give a medium-risk signal, or the stochastic stress test gives a medium-risk signal (by construction, the stochastic stress test cannot give a high-risk signal for a low-risk country). Note however that a notching up from low to medium risk is not relevant for the assessment for the sustainability criterion, the rationale for which is that of ensuring that countries avoid a high-risk classification.

24. The stochastic stress test is formulated in terms of probability of debt not stabilising over the initial five year of the projection period. For countries with an initial debt ratio between 60 and 90, the test gives a high-risk result if the probability exceeds 60 percent. This will be necessarily the case if the debt ratio is increasing in the baseline projection.

25. The Commission risk assessment methodology includes, in addition to the debt level and the debt trajectory, a third criterion for assessing the baseline projection, namely the fiscal consolidation space. This is assessed based on the percentile rank of the average structural primary during the projection calculated against the historical record for the country (the lower the percentile rank, intuitively, the less space the country has to improve on its historical record). This criterion is omitted in the interpretation of the sustainability criterion because to refers to unchanged policy projections as opposed to adjustment plans: it would be internally inconsistent to fail an adjustment plan because it incorporates an adjustment that is 'too ambitious' by historical standards.

26. European Commission (2023b), Art. 13 (2). It reads (emphasis added): "The set of reform and investment commitments underpinning an extension of the adjustment period, shall be commensurate with ***the degree of public debt challenges*** *and challenges to medium-term growth in the Member State concerned".*
27. European Commission (2023c), Art. (3). It reads (emphasis added): "The Commission, when preparing a report under Article 126(3) TFEU, shall take into account as a key relevant factor the degree of debt challenges in the Member State concerned. ***In particular, where the Member State faces substantial public debt challenges according to the most recent Debt Sustainability Monitor, it shall be considered a key factor leading to the opening of an excessive deficit procedure as a rule.*** *The Commission shall also take into account all other relevant factors as indicated in Article 126(3) TFEU, in so far as they significantly affect the assessment of compliance with the deficit and debt criteria by the Member State concerned."*

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