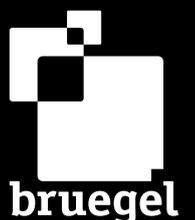


2022

2023

**BRUEGEL**

Research Programme



## INTRODUCTION

Just as we thought the pandemic shock was behind us, at least in economic terms, the Russian invasion of Ukraine put Europe back into a state of crisis. Like in any crisis, policymakers are confronted with economic, political and social dislocation. But unlike most previous crises, this one challenges long-held premises of European policymaking – indeed, of policymaking in most advanced countries.

In two areas, the shift is incremental. Energy supply and allocation, already central to the transition to net-zero carbon emissions, is now the most critical topic of European policymaking. The threat of geo-economic fragmentation, already growing as a result of China-US rivalry and the return of economic nationalism in many countries, has jumped to a new level.

In two other areas, the change is revolutionary. The premise that open war between states on the European continent was a thing of the past has been shattered. And inflation has returned in a way that was inconceivable only six months ago.

These shifts impact the European and global policy debates in multiple ways. For the purposes of Bruegel's 2022-23 research programme, they can be organised along two intersecting dimensions.

The first focuses on the time horizon of the policy challenge. All European Union countries, and the United Kingdom, must cope with two challenges in the short run: ensure energy security and reduce inflation without entering a major new recession. But long-term challenges are also shifting. Most prominently, energy policy has turned into an EU governance challenge rivalling fiscal, banking and financial market governance (and with deep links to all of these). How this challenge is met will be critical to European welfare and cooperation for decades to come. A similar challenge concerns global cooperation. Can the post-war multilateral order, rightly credited for the expansion of global trade and prosperity, survive increasing geopolitical fissures?

The second dimension distinguishes between new debates and the resurgence of old debates in a new light. The former includes the debate on how economic and financial sanctions should be designed and what limits such sanctions should observe. A major concern is what such a precedent will do from now on to global financial flows in times of peace and at what cost to welfare. Another new debate relates to policies to prevent energy shortages and reduce high energy prices. How can this be achieved while following through on decarbonisation objectives in the EU and beyond?

At the same time, older debates are resurfacing with new urgency. With Ukraine and Moldova given candidate status, the debate on EU enlargement and the trade-off between deepening and widening of the EU has taken a new direction. The pandemic shock and the new crisis have underlined the importance of fiscal sustainability and of the flexible use of fiscal instruments. With the deactivation of the general escape clause expected in 2024, EU fiscal governance must be reformed to meet both objectives.

The Bruegel 2022-23 research programme engages with most of these challenges and debates. One distinctive feature this year is that most areas of research will consider the implications for greening the economy and the effects on global cooperation. Our programme will continue to examine developments in EU governance and economic policy, from the architecture of fiscal rules to the normalisation of monetary policy and the macroeconomic implications of climate policies. Furthermore, the pandemic is not over, and we will continue to explore issues that deal with the economics of health at EU level. We have been awarded Horizon Europe projects that will allow us to invest resources in our China programme and to research global trade and coordination. Last, in the past few years, we have invested in creating databases that help us monitor and understand granular differences between EU countries. They have proved very instructive and valuable tools for all parties interested in European policy. We will continue to update relevant datasets and will create new ones that can contribute to timely policy debates, starting with the ongoing energy crisis.

Our programme will allow sufficient flexibility to meet new challenges as they arise. Like the policymakers we seek to support, we will stay nimble in order to react to new shocks and weigh in on new questions, as we seek to promote good economic policies that increase welfare in Europe and the world.

Jeromin Zettelmeyer and Maria Demertzis, 6 September 2022

# 1. Europe's governance

**Scholars:** Anne Bucher, Grégory Claeys, Marek Dabrowski, Zsolt Darvas, Maria Demertzis, Pawel Karbownik, Miquel Oliu-Barton, Francesco Papadia, Jean Pisani-Ferry, Andre Sapir, Nicolas Véron, Jeromin Zettelmeyer

## ***New highlights***

*The invasion of Ukraine has revived discussions about whether and how to enlarge the EU, and what this would mean for further integration and the future of the EU's global standing. Our work on governance will also examine rule-of-law procedures and their effectiveness.*

## ***Themes***

### 1.1 The invasion of Ukraine and the future of the EU

**Supporting Ukraine.** We will reflect on how the EU and the UK can best support the wartime Ukrainian economy and the reconstruction of Ukraine, whether there needs to be a new EU fund to support members that are hardest hit by the conflict, and according to which principles such support should be allocated.

**A new geoeconomic strategy for Europe.** We will develop a framework of understanding of Europe's new geoeconomic challenges, mainly in the context of the Russia-Ukraine war but also of the US-China increasing competition and decoupling. The project will first map out the key ongoing transformations in sectors such as energy security, food security, digital economy, finance, industrial policy, and supply chains – and then discuss a new geoeconomic strategy for Europe.

**EU Enlargement.** The invasion of Ukraine changes the way the EU should view enlargement and adds an important geopolitical element that affects its position globally. What alternative models can we think of and what economic implications do they have? Are the potential new EU members ready to enter the Union? Is the EU ready to accept new members given its unanimity rules? How does this change the EU's neighbourhood policy?

**The case for differentiated integration.** The request by three new countries to join the EU brings back the trade-off between deepening and widening the EU. Drawing on earlier Bruegel research, we will analyse the case for and against differentiated integration.

**Next Generation EU (NGEU):** We will monitor progress towards and compliance with announced reform and investment goals in the context of the NGEU funds, using the Bruegel [database on European Union countries' recovery and resilience plans](#). We will consider extending the database to cover the leverage effect of the plans on investment. We will also reflect on NGEU as a basis for a potential rethink of the EU budget, and on the replicability of NGEU for the financing of investment (including what the corresponding "own resources" might be in this case).

**Rule of law.** We will examine effectiveness and credibility of both the Article 7 rule of law procedure and the new rule of law conditionality regulation, and further consider the role of financial instruments in strengthening and enforcing the rule of law.

**Health Union.** The pandemic has illustrated the importance of coordinating health policies and improving health related information inside the EU. As part of this agenda, we will analyse the Regulation to create a European Health Data Space (EHDS) and its expected impact on innovation in health.

## 1.2 EMU architecture

**Fiscal rules reform.** With the deactivation of the general escape clause expected in 2024, the debate on how to reform the EU's fiscal rules is picking up steam. Proposals by several Members States, the European Commission, and the IMF have recently been issued or are expected to be issued in the next few months. Several of these proposals draw on ideas previously proposed by Bruegel researchers. Bruegel scholars will take an active role in the next stage of the debate, with a view to help the EU policy community to coalesce around a sensible reform that does a better job than the current rules in protecting the EU from fiscal risks, provides room for counter-cyclical fiscal policy, includes effective implementation and enforcement, and is consistent with the financing of the green transition.

**Fiscal capacity and the role of the ESM.** In addition to reform of the fiscal rules, does fiscal stabilisation and/or provision of public goods require new EU-level instruments, such as a fiscal capacity? Is there a potential role for the ESM in this context? Does this require extending or adaption its institutional role in the eurozone? We will be reflecting and publishing on these sets of questions, which are also closely linked to macroeconomic policy coordination, covered in more detail in section 2 below.

**Financial architecture.** Completing the banking union and advancing capital markets union (CMU) remains critical for growth and stability of the euro area, but progress on both has been slow. On banking union, we will take stock of what has been accomplished so far and analyse prospects for future developments; on CMU, we will seek to make a new case for CMU as essential infrastructure underpinning many other EU policy agendas (see section 4 below). In addition, we will track legislative initiatives and responding to any new developments on banking union.

## 2. Macroeconomic policy

**Scholars:** Grégory Claeys, Rebecca Christie, Marek Dabrowski, Zsolt Darvas, Maria Demertzis, Svend Erik Hougaard Jensen, Francesco Papadia, Marie Le Mouel, Jean Pisani-Ferry, André Sapir, Simone Tagliapietra, Georg Zachmann, Stavros Zenios, Jeromin Zettelmeyer

### ***New highlights***

*In the face of high inflation that is mostly supply-side driven, how can monetary policy normalise, and does the European Central Bank have the right tools? The EU green ambitions will reshape the macroeconomy and climate change itself will put pressure on sovereign debt. Divergences caused by COVID-19 are now followed by divergences arising from different energy dependencies.*

## **Themes**

### **2.1 Macroeconomic policy challenges**

**Reducing inflation.** We will explore mechanisms underlying the current inflation rise in Europe (EU+UK, also compared to US) and its heterogeneity across countries, including the roles of energy prices, wages and markups. How much can monetary policy do in current circumstances? What if the Ukraine war leads to stagflation? What policies will be required to deal with it?

**Mitigating the risks of monetary policy normalisation.** We will examine the potential unintended consequences of higher ECB policy rates on financial stability and fiscal space in EU member countries. Does the ECB have the tools it needs to achieve a smooth exit from quantitative easing (QE)? Can the new Transmission Protection Instrument (TPI) deal with the risks of financial fragmentation? Does it introduce any risks of its own? How can higher interest rates be reconciled with the high level of investment needs for climate and digitalisation?

**Fiscal policy and macroeconomic policy coordination in the aftermath of the Ukraine war.** We will examine the role of fiscal policy and the scope and the potential need for coordination: across countries, across levels of government, and between fiscal and monetary policies. How can EU members and the UK create fiscal space for investment needs in areas such as defence and migration, while also battling high energy prices and a possible recession? What scope for pooling resources at the EU level? At what level should policy interventions occur: national versus multi-national; government authorities versus other public institutions; public spending versus stimulation of private investment? How can fiscal policy best complement monetary policy in the presence of supply-side inflation in order to shield most vulnerable households (monetary and fiscal policies) while also minimising distortions and maintaining market-based incentives? An important input into this research will be the Bruegel database on National policies to shield consumers from rising energy prices, which we will continue to update.

### **2.2 Macroeconomic implications of climate change**

**The macroeconomics of decarbonisation.** This represents the continuation – and the final phase – of a project launched under the previous research programme, with the aim of understanding the macroeconomic fundamentals of decarbonisation, around the following main research questions: What implications will the drive to decarbonise our economies have on growth, the capital intensity of production and consumption, and investment patterns? What macroeconomic risks do we need to account for in the process? What implications do stranded assets have for our capacity to produce? Which policy approach is optimal to minimise the disruptions caused by decarbonisation while harnessing the opportunities for growth? What policies require coordination within the EU and internationally? What is the role of fiscal policies in supporting transition? To what extent can climate policies be funded by environmental taxation in a context in which carbon leakage has to be minimised?

**Climate and sovereign debt risks.** We will continue to advance methodologies to bring together climate science and debt sustainability analysis to better understand the effects of climate change on debt sustainability and debt risks. The conclusions drawn will feed into discussions on fiscal policy and the financing of climate policies.

## 2.3 Structural policies

**Tax policy after COVID-19.** What is the role of tax policy in dealing with the increase in inequality resulting from the COVID-19 crisis? This project will examine the distributional impact of COVID-19 and how taxes can be reformed to cushion that impact. It will also consider the consequences of the 2020 “own resources” decision, i.e., national versus EU-level revenue raising.

**Pension reform in the EU.** How should EU pension systems be reformed to protect the sustainability of public finance, given an ageing continent? What is the best practice (based on different country experiences) and is there a case for introducing a pan-European pension system? How can we ensure high coverage and avoid poverty among the elderly? Should there be longevity adjustments? Is there a role for home equity as a pension device and if yes, how will that affect house price dynamics and macroeconomic stability? Also, the establishment of a self-financed pillar for pensions may help advance the creation of capital markets.

**Reducing divergence.** To what extent have the successive shocks of Covid-19 and the Ukraine war shocks amplified divergence in the EU? We will take stock and reflect on how to close the gap.

## 3. Global economy & trade

**Scholars:** Alessia Amighini, Christophe Carugati, Marek Dabrowski, Uri Dadush, Alicia García-Herrero, Pawel Karbownik, David Kleimann, J. Scott Marcus, Marie Le Mouel, Bertin Martens, Niclas Poitiers, André Sapir, Reinhilde Veugelers, Jianwei Xu, Jeromin Zettelmeyer

### ***New highlights***

*COVID-19 and now the invasion of Ukraine have disturbed global trade and global value chains. The EU will have to rethink aspects that pertain to its industrial policy to ensure a resilient economy by fostering and expanding open trade and a system of smooth global cooperation.*

### ***Themes***

#### 3.1 Trade challenges for the EU and beyond

**The reshaping of global supply chains (GSCs).** Multiple shocks to GSCs have led to a questioning of their resilience. While evidence of reshoring by companies is still limited, policymakers in the EU and the US are embracing policy goals around reshoring and ‘friend shoring’. How are GSCs adapting in reaction to current shocks? We will identify trends in GSCs relating to these shocks, including a potential blockade of the Taiwan Strait following recent tensions, and will analyse policies that are proposed and enacted to manage GSCs and critical supplies (and raw materials), and discuss their economic costs and benefits. How can we achieve policy goals, including strategic autonomy, while minimising the costs in terms of economic efficiency and limiting the harm to the rules-based trading system? Could the challenge of reinforcing the EU strategic autonomy present an opportunity to better identify and reduce the negative impacts of European value chains on sustainability aspects?

**Asia and the EU and global supply chains.** While the EU plays an important role in GSCs, its trade linkages with Asia, other than China, remain limited. We will analyse to what extent this is true using input-output data, compare the EU with other Western economies, including the UK and the US, propose policies for increasing the EU's integration with Asia, beyond China, in ways that are both efficient and resilient. One country that deserves special attention in this context is India, which so far plays a relatively modest role in GSCs but intends to take advantage of the backlash against China to increase its global footprint, inter alia by signing new trade deals with foreign partners – including the EU.

**Geopolitical trade and industrial policy.** European industrial policy has taken on new geopolitical goals. The European Commission has added open strategic autonomy to its objectives for industrial subsidy projects, and the Chips Act extends emergency measures introduced for COVID-19 vaccines to new applications. Export controls have gained importance as a tool intended to manage technological dependencies and to achieve geopolitical objectives. These policies indicate a shift in the EU's approach to strategic sectors but may lead to inconsistencies between trade and industrial policy. How can these be minimised while targeting new geopolitical objectives? We will analyse the risks and costs of initiatives pursued (e.g., for competition and state aid disciplines or trade integration) and identify if constraints and safeguards on these policies are sufficient to mitigate these risks.

**Economic nationalism in historical perspective.** This project, conducted in collaboration with scholars at the Peterson Institute for International Economics, examines experiences with economic nationalism—defined as economic policies that seek to promote the national economic interest at the expense of foreign interests, at least in the short term. Policy instruments embraced by economic nationalists have included protectionism, subsidies, directed credit, and industrial policies that often discourage domestic competition. Are such policies ever effective for the countries that deploy them? If so, what are specific settings or policy combinations in which they may have worked? We begin by examining the intellectual origins of economic nationalism and the role of economic nationalism in the development of today's advanced countries and go on to describe and analyse policy experiences in Europe, Asia and Latin America since the 1930s. We end with experiments in economic nationalism in today's United States, China, and India.

### 3.2 EU trade policy in view of global cooperation

**Transatlantic Initiative for a Sustainable Metals Arrangement (TISMA).** This project will monitor and analyse the recently commenced EU-US negotiations on the so-called *“global steel and aluminium arrangements to restore market-oriented conditions and address carbon intensity”* (official deadline: 31 October 2023) as well as parallel negotiations, which the US administration reportedly seeks with several third countries in return for the removal of Section 232 steel and aluminium tariffs. The purpose of the project is to provide policy recommendations aimed at ensuring that transatlantic industrial decarbonisation, carbon-leakage prevention, and provision of assistance to lower-income third countries' sectoral decarbonisation efforts remain priorities of any negotiated arrangement. We will also examine how the TISMA links to wider efforts to combat carbon leakage, such as Carbon Border Adjustment Mechanisms (CBAM) and Climate Clubs.

**Trade policy and regulatory coordination.** This project will analyse the evolving European trade policy landscape and the working of the Trade and Technology Council and similar initiatives, and will monitor

the different tracks of trade policy (unilateral regulation, bilateral agreements and the multilateral forums). Based on this analysis, it will identify avenues for cooperation and propose policy instruments that allow the EU to pursue its commercial and non-commercial trade policy objectives while preserving the multilateral system.

### 3.3 Understanding China's relevance for the EU

**How is the Belt and Road Initiative evolving and how will it affect Europe?** The Belt and Road Initiative (BRI) is evolving from a mostly economic project, focused on building infrastructure to facilitate trade between China and most emerging economies, into an instrument for Chinese soft and even hard power. We will analyse the background and causes for this development, financial constraints, and the consequences for Europe. We will also study the impact of Russia's invasion of Ukraine on BRI transport routes, and the associated implications for Europe.

**Growth and restructuring in China's banking sector: consequences for the rest of the world.** China's banking sector has been growing much faster than the Chinese economy for decades, especially since the global financial crisis. Such growth has also brought complexity, with a huge wave of securitisation. At the same time, Chinese policymakers have introduced several waves of restructuring to clean up bad assets. Financial sector growth, complexity and restructuring are having consequences domestically but also across borders. This project will seek to document and analyse these linkages and their international impact.

**Can innovation stop China's structural slowdown?** China's long-term growth is expected to decelerate substantially in the next couple of decades due to rapid aging, lower productivity growth, and a meagre return on assets. However, China has also been moving up the technology ladder through both technological transfer and home-grown innovation. This project will examine to what extent such innovation can mitigate China's structural slowdown, and under which conditions China can transition from a middle-income to a high-income country.

**The extent and impact of Chinese industrial subsidies.** To what extent do Chinese corporates benefit from the "infant industry" support, and what is the impact for the world? This project will measure the size of Chinese subsidies and differentiate between industries, based on data in financial statements. It will compare subsidies across private and state-owned enterprises, as well as Chinese subsidies with those in the EU and US, to draw some conclusions about their relative importance. The sectoral breakdown of such subsidies also offers hints about which sectors are most protected.

## 4. Banking and capital markets

**Scholars:** Rebecca Christie, Grégory Claeys, Maria Demertzis, Diane Mulcahy, Nicolas Véron, Alexander Lehmann, Simone Tagliapietra, Georg Zachmann

### ***New highlights***

*Financial sanctions can be a powerful tool at times of war, but once established, they can also affect global financial flows in times of peace. This is a new topic that requires careful*

*consideration. How will the energy emergency change the sustainable finance agenda, and will it derail our climate transition?*

## **Themes**

### 4.1 EU financial policy implications of the war in Ukraine

**EU financial sanctions.** Financial sanctions have gained considerable salience in the context of the war in Ukraine, but the EU still approaches them in an *ad-hoc* manner. This project will aim both to provide advice to the ongoing policy process (as already done in two blog posts since the war began, respectively on banking sanctions and on the debate about confiscation of central bank reserves), and to look on a more structural level at how the EU could organise itself better for sanctions preparation, monitoring and enforcement (including via third countries).

**The EU's sustainable finance agenda in a time of fossil-fuel resurgence.** The key question to be addressed in this line of research is whether EU sustainable finance regulation (including EU Green Bond standards) and related supervision have accelerated the development of green investments in the market across the EU. Aspects to explore are: 1) A stocktake of the EU sustainable finance regulatory framework, and implementation at national level. 2) Green finance mobilised in the EU banking system and capital markets. 3) Implications of energy market disruption for the low-carbon investment case. 4) Proposals for policy steps to mobilise investors and contain risks from stranded assets.

**Sustainability-linked bonds and their implications for sovereign debt markets in Europe.** Unlike standard “green” bonds, which promise to spend the proceeds of the issuance on green projects, sustainability-linked bonds (SLBs) create a link between performance (outcome) indicators and the financial terms of the bonds. While SLBs have rapidly grown in importance in private markets, only two sovereigns, Chile and Mexico, have issued SLBs. This project will assess the role of SLBs in accelerating and incentivizing climate mitigation, adaptation policies, and public investments, as well as potential pitfalls and design issues.

### 4.2 Banking union, CMU, and the changing nature of financial markets in the EU

**Banking Union after ten years.** This project will take a holistic look at the banking union project; what has been accomplished so far, how does that compare with the stated ambitions when the endeavour started a decade ago, and what are the prospects for future developments. It will be mainly based on interviews of relevant policymakers and analysis of changes in the banking market structure since 2012.

**CMU as essential infrastructure in the EU policy agenda.** This project will reflect on new ways to make the case for CMU: namely, by arguing for capital markets as essential infrastructure, rather than merely as vehicles for spreading risk. For CMU to succeed, it needs ground up buy-in, not just top-down planning. What is missing in Europe is a culture shift – a view that capital markets are not just something to coexist with – but are needed for the benefit of individual citizens and the general economy, as well as the financial system. This requires financial literacy, political support and democratisation, including monitoring of individual member-state efforts for market-strengthening policies.

**The changing venture capital landscape.** Europe’s venture capital ecosystem has experienced significant growth and success in just the past half decade. VC fundraising, investing and exits (both M&A and IPOs) have all increased in both size and frequency. Yet, the EU still lags significantly behind the US in creating strong, resilient financing and exit markets for the equity financing of private companies. This project will discuss the changes in the EU’s venture capital industry, offer comparisons to the US, and evaluate what is working and what is missing. It will evaluate the measures proposed in the CMU action plan and offer specific, actionable options to ensure the resilience and growth of Europe’s capital markets.

**Digitalisation of financial markets.** This project will explore the challenges and opportunities of decentralised finance (Defi). What is the role of private digital currencies in the financial system? How can regulation provide consumer protection against the volatility of private digital currencies? Where do the developments of central bank digital currencies stand, and what they may add? What are the new innovations in this space and how disruptive are they?

## 5. Energy and climate policy

**Scholars:** Zsolt Darvas, Simone Tagliapietra and Georg Zachmann

### ***New highlights***

*Energy security and its social implications will be at the top of the agenda this winter. The current energy emergency will accelerate the energy transition. But it will also delay and possibly derail our ambitious climate agenda. We need to explore how Europe’s green deal is affected. Energy security and its social implications will be nevertheless at the top of the agenda for the coming winter.*

### ***Themes***

#### 5.1 New challenges for Europe’s energy and climate policy

**Energy challenges for Europe at a time of disruption.** We will further develop the extensive work currently being done on the ongoing European energy crisis. Drawing on recently created Bruegel databases (European national gas imports; Russian crude oil tracker) we will continue to monitor developments in natural gas and oil security of supply, as well as European national responses to the increase in energy prices and gas shortages in coming winter. Bruegel will continue to provide timely analysis of the key EU policy questions in the area, and to push the European debate on both short-term and longer-term measures that need to be put in place to ensure an efficient response to this unprecedented challenge.

**What’s next for Europe’s green transition?** This project will continue our work on the European green transition. Bruegel will continue to provide both timely analyses on ongoing EU climate policy developments (e.g., European Green Deal, ‘Fit for 55’ package, REPowerEU plan) and longer-term analyses to push the EU climate policy debate further. Particular attention will be devoted to issues such as: the social dimension of EU climate policy, the development of the EU’s carbon border adjustment mechanism (CBAM) and its relationship to ongoing efforts to establish an international climate club, and EU policies

to foster the circular economy. Of particular relevance would be how the new energy situation of decoupling from Russia will set back our climate ambitions and which policies would need to accelerate as a result.

## 5.2 Institutions and markets to meet the EU's green objectives

**EU Green Think Tank network.** The goal of this project is to strengthen the collaboration between key experts from leading think tanks active at both country and EU-level in understanding and unlocking the potential, impact and implementation of specific policy tools of the European Green Deal. To this end, the collaboration will seek to contribute to climate adaptation, greening the EU Common Agricultural Policy, and green investments. We will follow the workings of COP27 and its changing nature given the war in Ukraine. The objective is to overcome the gap between the EU and country-based approaches in implementing the measures prescribed in the European Green Deal.

**Global climate governance.** This project is aimed at continuing Bruegel's work on global climate trends and governance. Under the project, Bruegel will continue to monitor and analyse the Paris Agreement process (namely with the forthcoming COP27), as well as the EU-US climate cooperation, climate policy developments in China and the rest of Asia, and the overall external dimension of the European Green Deal.

## 6. Digital economy and innovation

**Scholars:** Christophe Carugati, Rebecca Christie, David Kleimann, Marie Le Mouel, J. Scott Marcus, Pawel Karbownik, Bertin Martens, Jean Pisani-Ferry, Niclas Poitiers, Giuseppe Porcaro, Simone Tagliapetra, Reinhilde Veugelers

### ***New highlights***

*It is crucial to move away from a piecemeal digital legislative agenda towards a consistent framework that can be applied and monitored. The intersection of digitalisation and sustainability. How does the EU industrial agenda change in the face of new realities? We will also look at the strategic relevance of the space industry in overall EU industrial policy.*

### ***Themes***

#### 6.1 Digital regulation in the EU

**A consistent legal framework for the EU in the digital age.** Legal and regulatory measures in the digital sector are proliferating, making it exceedingly difficult to ensure consistency among them, as well as effectiveness, efficiency, and coherence in their implementation and enforcement. This project will focus on the challenge of developing a framework that ensures the mutual consistency and coherence of enacted measures, particularly considering their intersection with many distinct thematic areas (competition, innovation, infrastructure deployment, illegal or harmful content, privacy, cybersecurity, safety, consumer protection and more). How can we ensure consistent and effective implementation in member states? How can we address challenges of cross-border/extraterritorial application where

relevant, while taking the work of intergovernmental organisations into account? Also, can we avoid needless fragmentation across all of these dimensions, insofar as fragmentation impacts scale economies for providers of goods and services?

**Enforcing DMA.** Parliament and Council adopted the Digital Markets Act (DMA) in July 2022. The Act will impose a list of 22 rules on some large online firms. The Commission now needs to define how it will implement the Act to ensure its efficiency and effectiveness. How should it implement the rules internally and externally with other digital policies? How should the rules be interpreted to ensure consumers are better off? The proposal will focus on implementation of the rules and their economic impacts, including in relation to app stores, access to data and self-preferencing, and the institutional design to enforce them.

**Improving the GDPR.** The General Data Protection Regulation (GDPR) has strengthened the protection of the public and is admired and emulated worldwide. Nonetheless, there is also a growing body of research that suggests that the impact of GDPR on innovation is unacceptably high. A number of topics that could merit study: (1) the one-stop shop, and its tendency to result in inefficient allocation of enforcement staff, and arguably in weak enforcement in those member states where the largest online platforms are located; (2) weak enforcement in some member states; (3) international data transfers, especially to the US and the UK; (4) user consent to the use of personal data, which can be burdensome and difficult to understand: how can this be made more user-friendly and effective?

**Data Act as a complement to GDPR.** The European Commission has proposed a Data Act as a comprehensive cross-sector regulation of access to data generated by digitally enabled devices; Parliamentary and Council debate is expected to start in September. The proposal contains several pro- and anti-competitive provisions in relation to data access. While device users get a right to access data, the act would also assign extensive data-holder rights to manufacturers of digital devices, including IPR-like rights. This may create tension between users' device ownership rights and the ability of manufacturers to affect user benefits after the sale and transfer of ownership of a device. The Data Act also opens an exceptional and conditional door for government access to private-sector data. This project will evaluate the proposal with a view to proposing modifications that could make the act more competition friendly, re-balance data access rights between device manufacturers and users, and offer users greater opportunities to benefit from welfare-enhancing data-driven network effects.

## 6.2 EU Industrial policy: what is next?

**An industrial policy to reflect shifting geopolitics and to meet Europe's new societal challenges.** How should industrial policy be designed to deal with key European societal challenges, ranging from security to climate change, from health to digital? With this project, Bruegel seeks to move beyond old industrial policy debates and contribute to the formation of a new industrial policy approach.

**The intersection of digitalization and sustainability.** Sustainability and digitalisation are the key goals of the twin transition. This project will aim to identify ways in which digitalisation can contribute to sustainability. We will investigate the following issues. On the usage side (encompassing both energy and material), how to reduce consumption of energy and materials, increase efficiency, reduce CO<sub>2</sub> emissions related to consumption, and reduce the environmental impact of digitalisation itself (Green ICTs). On the

energy and goods production and distribution side, how to deploy carbon-free energy systems (including production, distribution, demand, and management solutions), and reduce waste and inefficiency.

**Industrial policy and the space industry.** Space policy can be seen from many angles, from investment in hard science to a geopolitical race, to an innovation incubator. This project will address the strategic relevance of the sector for overall European industrial policy: 1) Describe the space value chain in Europe, from science, research, main aggregators, component manufacturers, main users of space infrastructure, main users of space services/satellites, and compare it to global alternatives. Are there geographical clusters at the local and regional levels? 2) Define the typology of actors in the industry (big players, component subcontractors, start-ups, etc). 3) Identify industrial actors with main activities in space vs diversifying space actors. 4) Assess European capacity in the sector. As we build up knowledge on this new subject for us, we will seek to ask strategic questions on the role and ability of the EU to exploit space policy, its advantages and value added given small country budgets, and how space policy should be regulated.

### 6.3 Aspects of networks and infrastructure

**Network and infrastructure security.** The security of networks and online infrastructure has been a steadily growing concern for many years. Commercial profit-seeking hackers have been a problem for decades, but state-sponsored cyberattacks and even cyberwarfare constitute a growing threat. The war in Ukraine has demonstrated both the importance and limitations of these threats. The project will analyse: 1) the intersection between cybersecurity and the revived threat of kinetic war and the threat to public infrastructure (e.g., electricity), factory automation and more in the form of the internet of things; 2) the security of app stores, and the relationship between security and procompetitive measures; 3) whether incentives for companies to invest in cybersecurity are suitable and sufficient; 4) the case for global cooperation on forensics.

**A 'fair share' between network operators and online platforms?** Large European network operators have been pushing for online platforms to make a 'fair' contribution, in some form, to their operations. These proposals sometimes take the form of requests for regulated or arbitrated payments for network interconnection. It is true that a large fraction of internet traffic derives from online video platforms such as Netflix and YouTube, but the question of fair or appropriate payment in complex two-sided or multi-sided markets is not straightforward. This project will analyse these issues and make policy recommendations ahead of a legislative proposal by the European Commission, expected by the end of the 2022.

**The impact of deglobalisation on fixed and mobile broadband services.** Global decoupling in various forms appears to be inevitable because of US-China geopolitical tensions, further accelerated by the war in Ukraine. The impact on value chains for global communication networks, even more so for mobile networks than for fixed, might be substantial. The project will attempt to quantify this impact and identify new trends.

## 7. Inclusive growth

**Scholars:** Zsolt Darvas, Laura Nurski, Duygu Güner, Marie Le Mouel, Diane Mulcahy, Fabian Stephany. External authors through the excellence network: Tatiana Andreeva, Janine Berg, Francis Green, David Spencer, Cristiano Codagnone, Maria Savona, Sabine Köszegi, Estrella Gomez-Herrera.

### ***New highlights***

*How does the demand for skills change with automation and decarbonisation? We will explore how to transition workers towards future-proof jobs in growing industries, the hidden inequalities of digitalisation, and gender perspectives on artificial intelligence and jobs.*

### ***Themes***

**Supporting workers during the twin (digital/green) transitions.** This project belongs to a workstream in the three-year Future of Work and Inclusive Growth programme and was therefore mentioned in last year's research programme, but its execution is only starting now. The focus is on supporting workers during the twin (digital and green) transitions. We investigate private and public initiatives on reskilling and transitioning workers. Reskilling workers in jobs at risk from automation or decarbonisation: what skills do workers need in the Future of Work, and how can private and public initiatives help workers gain those skills? What is keeping workers in jobs at risk of disappearing from transitioning to future-proof jobs? Drawing from our academic excellence network on the future of work, we hope to be able to improve the state of twin transition in Europe: toward both AI skills and green skills.

**Working conditions and worker wellbeing.** This workstream in the Future of Work and Inclusive Growth programme focuses on the impact of technology on working conditions, collaboration, innovation and inclusion. Specifically, we investigate worker wellbeing (including occupational health and safety, psychosocial risks, stress, motivation, satisfaction and engagement) in new work contexts including platform work, remote and hybrid work, and in the context of new technologies including AI, automation and smart technologies. We analyse technologies such as AI for automating routine cognitive tasks, robots for automating routine manual tasks, and low-skill complementing production technologies ('operator 4.0'). We investigate the effects of these technologies on job content and on-the-job learning and collaboration, and on wellbeing at work. Our research moves into prescribing solutions, for example by looking into the operationalisation of 'responsible AI principles' in the workplace and by looking into the 'human-centred' R&D of AI.

**Tackling labour market inequalities.** This project will investigate different kinds of labour market inequality, starting with wage inequality, and also discrepancies in physical working conditions, working time quality, job security etc., which are generally referred as 'job quality'. We will examine the inequalities stemming from labour market segregation and job polarisation on the one hand, and labour market discrimination and exclusion on the other hand. We will have a special focus on low-skilled workers and women, and on small and medium-sized enterprises (SMEs). Drawing from our academic excellence

network on the future of work, we hope to be able to contribute on the following issues: A gender perspective on AI and jobs, the hidden inequalities of digitalisation in the post-pandemic context, and the impact of gender equality on resilience of societies in crisis.

**Digital nomads and the impact on EU growth.** This project will discuss the motivations and intentions of countries that have created digital nomad visas, their impact so far on economic growth, and the impact and any unintended consequences on visas. This policy of loosening visa restrictions and recruiting foreign workers will also be compared to the US's policy of restricting visas and immigration, and the impact on economic growth.