

UNIVERSITY OF WUPPERTAL  
BERGISCHE UNIVERSITÄT WUPPERTAL

EUROPÄISCHE WIRTSCHAFT UND  
INTERNATIONALE MAKROÖKONOMIK



Marianne Mueller

**French Presidency of the Council of the European Union in 2022:**  
**What to Expect?**

EIIW Diskussionsbeitrag 306  
EIIW Discussion Paper 306



*Europäische Wirtschaft und Internationale Wirtschaftsbeziehungen*  
*European Economy and International Economic Relations*

ISSN 1430-5445

EIIW Discussion Papers are registered with RePEc-Econ Papers and in ECONIS

Marianne Mueller

**French Presidency of the Council of the European Union in 2022:  
What to Expect?**

September 1<sup>st</sup> 2021



*Herausgeber/Editor: Prof. Dr. Paul J.J. Welfens, Jean Monnet Chair in European Economic Integration*

EUROPÄISCHES INSTITUT FÜR INTERNATIONALE WIRTSCHAFTSBEZIEHUNGEN (EIIW)/  
EUROPEAN INSTITUTE FOR INTERNATIONAL ECONOMIC RELATIONS  
Bergische Universität Wuppertal, Campus Freudenberg, Rainer-Gruenter-Straße 21,  
D-42119 Wuppertal, Germany  
Tel.: (0)202 – 439 13 71  
Fax: (0)202 – 439 13 77  
E-mail: [welfens@eiiw.uni-wuppertal.de](mailto:welfens@eiiw.uni-wuppertal.de)  
[www.eiiw.eu](http://www.eiiw.eu)

**JEL classification:** F00, F01, F5, N14

**Key words:** European Union, France, Policy Options, Outlook

## **Summary:**

With France due to take over the presidency of the Council of the European Union in January 2022, this paper first examines the scope of the Council's work, and then draws attention to two areas of necessary reform. The Council of the European Union directly represents the governments of the member states and can initiate major changes - if initiatives are followed by the European Commission and the European Parliament - but not in all areas. The Presidency of the Council, a role which includes planning the agenda, is important because the holder of the presidency chooses the issues which will be the focus of attention, initiates discussions, suggests changes and can accelerate (or delay) efforts in certain areas. Here, the discussion recalls in particular the importance of the issues of climate change, migration, security (including cyber security), and inclusive growth. It then focuses on two discussions that the French Presidency must initiate, two areas in which the so-called "trio" of France, Czechia and Sweden (i.e. successive holders of the office of president which coordinate on policy) must promote reform: The budgetary framework and industrial policy. These crucial policy fields are all the more important as the functioning of the European institutions and the role conferred on the EU are no longer in line with current challenges.

The fiscal framework of the European Union, which was established by the Maastricht Treaty, consists of pre- and post-accession convergence criteria that member states must respect when planning and executing their national budgets, a preventive arm, and a corrective arm. The corrective arm is a set of measures aimed at sanctioning states that do not respect the budgetary rules, and can go as far as financial sanctions - however, no country has yet been subjected to such a sanction. Since the bursting of the "dot com" bubble in the early 2000s, and especially after the 2008 Transatlantic Financial Crisis, which was followed by the Eurozone sovereign debt crisis, the debt-GDP ratio of the Eurozone (and more generally of EU) countries has been rising steadily. The number of countries under an Excessive Deficit Procedure (EDP) has remained positive since 2003. Moreover, to mitigate the economic and social impacts of the COVID-19 crisis, many governments have taken countercyclical measures, including financial support, which have resulted in a drastic increase in public deficits and public debt. This recurrent non-compliance with fiscal rules indicates a mismatch between economic imperatives, on one hand, and fiscal rules, on the other. Furthermore, there is strong heterogeneity across countries, which undermines the stability of the Eurozone system as a whole. Finally, the context in which the budgetary rules were initially decided and agreed upon is quite different from the current environment, since today the cost of public debt is no longer representative of the real situation - as demonstrated by the sovereign spread between Germany and Greece in 2021. To this end, a reform (or even a restructuring) of the fiscal framework is inevitable as argued herein. Concerning European industrial policy, the interest of implementing an industrial strategy at the EU level is both to coordinate economic interests and to ensure the integration and strategic autonomy of all member states, while also respecting climate objectives. Economically, countries with industries in the same sectors have a strong interest in cooperating, whether by creating innovative hubs or facilitating the exchange of labour and knowledge, in order to foster the global competitiveness of their industries. Cooperation between countries can also be of interest in the implementation of a circular economy model, where a diverse set of companies work in synergy to better manage resources and waste. There is currently a marked heterogeneity between countries, both in terms of their rate of industrialisation, the types of industries, but also in terms of the skills of their workforce. A strategy at the EU level necessarily needs to take these differences into account; it can be

seen as a multi-speed strategy, where each country adapts its national industrial policy to its own situation. It may also involve implementing educational programmes directly in countries with relatively low levels of skilled workers. Beyond the coordination of countries and the recognition of individual characteristics, certain measures benefit the entire productive sector, from SMEs to large companies, in Western European countries as well as in Eastern and Southern Europe: These include measures to support education, research and development, and investment in infrastructure. The latter aspects are essential to the digital transition, which is a contemporary strategic challenge in which many countries are still laggards. The type of industrial policy to be implemented therefore depends on the objectives, and can be sectoral or horizontal.

## **Zusammenfassung:**

Da Frankreich im Januar 2022 die nächste EU-Ratspräsidentschaft übernimmt, befasst sich dieses Papier mit dem Umfang der Arbeit des Rates und weist auf zwei Bereiche hin, in denen Reformen notwendig sind.

Der Rat vertritt direkt die Regierungen der Mitgliedstaaten und kann, wenn er von der Europäischen Kommission und dem Europäischen Parlament unterstützt wird, wichtige Änderungen einleiten - allerdings nicht in allen Bereichen. Die Präsidentschaft, zu deren Aufgaben auch die Planung gehört, ist wichtig, weil sie auswählt, welche Themen im Mittelpunkt stehen werden, Diskussionen anstößt, Veränderungen herbeiführt und die Bemühungen in bestimmten Bereichen beschleunigt (oder verlangsamt). In der Diskussion wird auf die Bedeutung der Themen Klima, Migration, Sicherheit (einschließlich Cybersicherheit) und integratives Wachstum hingewiesen. Anschließend wird auf zwei Diskussionen eingegangen, die die französische Ratspräsidentschaft anstoßen muss, zwei Veränderungen, die das Trio Frankreich - Tschechische Republik - Schweden herbeiführen muss: die des Haushaltsrahmens und der Industriepolitik. Letztere sind umso wichtiger, als die Funktionsweise der europäischen Institutionen und die der EU zugewiesene Rolle nicht mehr mit den aktuellen Herausforderungen übereinstimmen.

Der durch den Vertrag von Maastricht geschaffene finanzpolitische Rahmen der EU besteht aus Konvergenzkriterien für die Zeit vor und nach dem Beitritt, die die Mitgliedstaaten bei der Planung und Ausführung ihrer Haushalte einhalten müssen, einer präventiven und einer korrektiven Komponente. Die korrektive Komponente besteht aus einer Reihe von Maßnahmen, die darauf abzielen, Staaten zu sanktionieren, die sich nicht an die Haushaltsregeln halten, und kann bis zu finanziellen Sanktionen reichen - allerdings wurde bisher noch kein Land von einer solchen Sanktion betroffen. Seit dem Platzen der Internetblase in den 2000er Jahren und insbesondere nach der Finanzkrise von 2008, auf die die Staatsschuldenkrise folgte, ist die Schuldenquote des Euroraums (und generell der EU-Länder) stetig gestiegen. Die Zahl der Länder, gegen die ein Verfahren wegen eines übermäßigen Defizits eingeleitet wurde, ist seit 2003 unverändert hoch. Um die wirtschaftlichen und sozialen Auswirkungen der COVID-19-Krise abzumildern, haben viele Regierungen antizyklische Maßnahmen, einschließlich finanzieller Unterstützung, ergriffen, die zu einem drastischen Anstieg der öffentlichen Defizite und der Staatsverschuldung geführt haben. Diese wiederholte Nichteinhaltung der Haushaltsregeln deutet auf ein Missverhältnis zwischen den wirtschaftlichen Erfordernissen und den Haushaltsregeln hin. Darüber hinaus gibt es große Unterschiede zwischen den Ländern, die die Stabilität des Systems der Eurozone untergraben. Schließlich ist der Kontext, in dem die Haushaltsregeln beschlossen wurden, ein ganz anderer als der gegenwärtige, da die Kosten der öffentlichen Verschuldung heute nicht mehr repräsentativ für die reale Situation sind - wie die Spanne zwischen Deutschland und Griechenland im Jahr 2021 zeigt. Daher ist eine Reform des finanzpolitischen Rahmens (oder sogar eine Umstrukturierung) unumgänglich. Zur europäischen Industriepolitik: Das Interesse an der Umsetzung einer Industriestrategie auf EU-Ebene besteht darin, sowohl die wirtschaftlichen Interessen zu koordinieren als auch die Integration und strategische Autonomie aller Mitgliedstaaten zu gewährleisten und gleichzeitig die Klimaziele zu beachten. In wirtschaftlicher Hinsicht haben Länder mit Industrien in denselben Sektoren ein starkes Interesse an einer Zusammenarbeit, sei es durch die Schaffung innovativer Zentren oder die Erleichterung des Austauschs von Arbeitskräften, um die globale Wettbewerbsfähigkeit ihrer Industrien zu fördern. Die Zusammenarbeit zwischen Ländern kann auch bei der Umsetzung

eines Kreislaufwirtschaftsmodells von Interesse sein, bei dem verschiedene Unternehmen zusammenarbeiten, um Ressourcen und Abfälle besser zu verwalten. Gegenwärtig gibt es eine große Heterogenität zwischen den Ländern, sowohl in Bezug auf ihr Industrialisierungstempo und die Art ihrer Industrien als auch in Bezug auf die Qualifikationen ihrer Arbeitskräfte. Eine Strategie auf EU-Ebene muss zwangsläufig diese Unterschiede berücksichtigen; sie kann als eine Strategie der verschiedenen Geschwindigkeiten betrachtet werden, bei der jedes Land seine nationale Industriepolitik an seine Situation anpasst. Sie kann auch die direkte Durchführung von Bildungsprogrammen in Ländern mit einem geringen Anteil an qualifizierten Arbeitskräften beinhalten. Über die Koordinierung der Länder und die Berücksichtigung individueller Merkmale hinaus kommen bestimmte Maßnahmen dem gesamten Produktionsgefüge zugute, von den KMU bis zu den Großunternehmen, sowohl in den westeuropäischen als auch in den ost- und südeuropäischen Ländern: Dazu gehören Maßnahmen zur Förderung von Bildung, Forschung und Entwicklung sowie Investitionen in die Infrastruktur. Letztere sind für den digitalen Wandel unerlässlich, der eine aktuelle strategische Herausforderung darstellt, die in vielen Ländern noch nicht bewältigt wurde. Die Art der Industriepolitik, die umgesetzt werden soll, hängt also von den Zielen ab und kann sektoral oder horizontal sein.

**Acknowledgements:** This report was written during a research visit at the European Institute for International Economic Relations (EIIW) at the University of Wuppertal. Comments from Prof. Paul JJ Welfens are greatly appreciated as well as the editorial support by David Hanrahan and Julia Bahlmann.

*Marianne Mueller, Master Student in Analysis of Economical Politics, University affiliation Panthéon-Sorbonne Paris 2 ; and European Institute for International Economic Relations (EIIW) at the University of Wuppertal*

[www.eiiv.eu](http://www.eiiv.eu)

*EIIW 2020 = 25 years of award-winning research*

## **French Presidency of the Council of the European Union in 2022: What to Expect?**

EIIW Diskussionsbeitrag 306  
EIIW Discussion Paper 306

# Table of Contents

Table of Contents .....	VIII
List of Figures .....	IX
List of Tables.....	IX
1. Introduction.....	1
2. The First Element: The Budgetary Rules at EU Level .....	8
2.1 Presentation of the Current European Budgetary Framework .....	8
2.2 Context and European Countries in Practice.....	9
2.2.1 From the Maastricht Treaty to the Covid-19 Crisis.....	9
2.2.2 The Covid-19 Crisis.....	11
2.2.3 Other Features of the Current Framework.....	12
2.3 What is at Stake in Reforming the European Budgetary Framework? .....	13
3. The Second Element: European Industrial and Trade Policy .....	14
3.1 How Industrial Policy works at an EU Level.....	14
3.2 What is at Stake in European Industrial Policy? .....	16
3.2.1 The Challenge of Economic Growth, the Digital Transition and Competitiveness ..	17
3.2.2 Climate Issues .....	18
3.2.3 Integration Issues .....	20
3.2.4 Sovereignty Issues .....	22
4. What Can be Done? .....	24
5. Conclusion .....	25
Literature .....	27



## List of Figures

Figure 1: Sovereign Bond Spreads in the Eurozone.....	6
Figure 2: Number of Countries under an Excessive Deficit Procedure (EDP), 1999-2017.....	9
Figure 3: Debt (in % of GDP) and Deficit (in %) in the Eurozone, 1995-2020.....	10
Figure 4: EU Countries' Debt Levels (in % of GDP), 1995-2020.....	11
Figure 5: Industrial Activities.....	15
Figure 6: Gross Domestic Spending on R&D (in millions of US dollars), 2000-2020 .....	18

## List of Tables

Table 1: Policy Areas by Type of EU Competence .....	3
Table 2: Gross Domestic Product (in PPP, 2010 International \$ (billions)) of EU Countries (incl. UK), 2019.....	5
Table 3: Actual (2019 and 2020) and Forecast (2021-2026) Figures for Gross Debt-GDP Ratios of Selected EU Countries, the UK, US and Japan, 2019-2026.....	12
Table 4: Top Five Countries by Thermal Renewable Energy Production, 2019 .....	21
Table 5: Top Five Countries Producing Different Types of Renewable Electricity, 2019 .....	22

# 1. Introduction

On January 1<sup>st</sup>, 2022, France will take over the rotating Presidency of the Council of the European Union from Portugal for a period of six months. The role and functions of the presidency is sometimes misunderstood, overestimated, or discredited; this paper attempts to do it justice by reviewing the functions of the Council itself (Section 1). It will then focus on two issues that have recently been given a lot of attention – especially in France –and that will have to preoccupy France thereafter: The budgetary framework (Section 2), and industrial policy (Section 3). Section 4 raised some questions for policymakers in France and beyond, while Section 5 concludes.

Considering the functioning of the European institutions and the brief time available (i.e., six months), it is illusory to expect major changes from the country holding the Presidency of the Council of the European Union. The main activities of the Council of the European Union are the negotiation and adoption of European Union (EU) legislation - mostly in coordination with the European Parliament - the negotiation of agreements between the EU and other countries or international organisations, and the adoption of the EU budget together with the European Parliament. The fact that it is comprised of the relevant ministers of the member states ensures some coordination of national policies. However, the impact and scope for enforcement of the Council's decisions depend both on the type of legal act adopted and on the EU legislative procedure that applies: In some cases, acts issued by the EU legislative trio (i.e., the European Commission, Council of the European Union and the European Parliament) are not legally binding. Furthermore, the Presidency of the Council of the European Union is not given executive power; it involves primarily a planning role. Moreover, as the period of office of six-months is too short to achieve any real results, a presidency “trio” system obliges three successive presiding countries to work together on a common programme. Thus, when we speak of the French Presidency of the Council of the European Union, we are in fact referring to the programme of France, Czechia and Sweden (who together make up T11, or the 11<sup>th</sup> trio since the system was introduced in 2007, from January 2022 to June 2023)

However, in the circumstances of the Covid-19 crisis, the measures adopted under the German Presidency in the second half of 2020 and Angela Merkel's negotiating strength in favour of the European Recovery Plan 2020 (dubbed “Next Generation EU”) are a reminder of the Council Presidency's capacity for action. It can prioritise measures, themes and issues and initiate changes in the organisation of the EU. At present, the EU could benefit from change, as the rigidity of its institutions weighs on the European economy, on opportunities for growth and job creation - and this rigidity is all the more dangerous as the overall context is one of an accelerating frequency of climate disasters and of the strength of their fallout in terms of the human and economic cost. The EU should be seen as an institution that is meant to improve over time, whose purpose can evolve and whose rules can be revised when events show their current limits, or when the trajectory on which it has previously embarked proves not to be the right one - as has been the case in the past. Budgetary and industrial issues are among those important key fields that challenge the European framework, although progress in those areas could improve the functioning and role of the EU in the world.

This paper aims first and foremost to discuss in particular these two of all current challenges faced by European countries, which may be avenues for improvement for the Council; it invites

reflection rather than making specific proposals for action, although some proposals are indeed briefly mentioned.

### ***Functioning and Scope of the Council***

The Council of the European Union (hereafter referred to simply as “the Council” or the “Council of Ministers” and not to be confused with the European Council) is one of the seven institutions of the European Union. It negotiates and adopts EU legislation as a co-legislative body together with the European Parliament, based on proposals submitted by the European Commission, thus constituting a body with both legislative and executive powers. It is responsible for concluding agreements between the EU and other countries or international organisations, developing the EU’s foreign and security policy, and adopting the EU’s annual budget with the European Parliament. Finally, as it is made up of representatives of the various national governments, it coordinates the policies of the EU countries. To do this, the Council meets in ten different configurations depending on the subject matter. These configurations convene the relevant ministers of the individual member states by area of competence and – with the exception of the Foreign Affairs Council – Council meetings are chaired by the country holding the rotating presidency of the Council for the period in question.

The Presidency of the Council of the European Union is held in rotation by the governments of the member states, with each presidential term lasting for a period of six months. Since the introduction of the ‘trio’ system in 2007, the scheduling and agenda of Council meetings now reflects a joint work programme of the country holding the presidency together with two other member states, which either preceded it or will succeed it in the presidency - this is sometimes referred to as a tripartite presidency (the trio does not change). Thus, Slovenia, which has recently taken office and will hold the Council Presidency until December 2021, is currently ensuring the implementation of the programme common to its two predecessors, namely Germany, and Portugal; France, for its part, will have to cooperate with Czechia and Sweden.

While the Council’s programme may allow member states to focus the Council’s debates on issues of national or regional interest, it cannot and should not serve the interests of the state holding the presidency: In the first case, because the adoption or amendment of an act requires time, in the second case, because the Council must be impartial. Not only does the presidency of a country in the Council not give it total freedom, but it does not act alone, since it works in coordination with two other countries on a common agenda.

One of the limits to the Council’s action stems from the principle of conferral and the distribution of competences. According to the principle of attribution, the European Union has competency in only those areas in which competencies are conferred upon it by the EU member states in the treaties, and it can therefore only act within the limits of those competences (Article 5 of the Treaty on European Union (TEU)); the EU and its institutions cannot decide on their legal bases and competences on their own. There are three categories of competence that govern the EU’s - and therefore the Council’s - ability to act: Exclusive, shared and supporting competences. In the first case, only the Union can legislate and adopt legally-binding acts, while the member states can only do so on their own if they are empowered to do so by the Union or to implement Union acts; in the second case, member states are entitled to legislate and adopt

binding acts only insofar as the Union does not exercise its competence; and in the last case, the Union can only intervene to carry out actions to support, coordinate or supplement the action of the member states. Industrial policy, for example, falls under the coordination competence.

**Table 1: Policy Areas by Type of EU Competence**

Exclusive competence	Shared competence	Coordination competence
<ul style="list-style-type: none"> <li>• Conclusion of some international treaties</li> <li>• Customs union</li> <li>• Intra-Community competition rules</li> <li>• Economic and monetary union</li> <li>• Sustainable development (conservation of marine and land-based biological resources)</li> <li>• Extra-Community trade</li> <li>• Conclusion of certain international agreements</li> </ul>	<ul style="list-style-type: none"> <li>• Common market</li> <li>• Social policy (limited to the aspects defined in the TFEU)</li> <li>• Regional policy (economic, social and territorial cohesion)</li> <li>• Agricultural and fisheries policy</li> <li>• Research and innovation policy</li> <li>• Energy policy</li> <li>• Environmental policy</li> <li>• Consumer protection</li> <li>• Transport policy</li> <li>• Trans-European Networks</li> <li>• Area of freedom, security and justice</li> <li>• Development cooperation and humanitarian aid</li> <li>• Common safety issues in public health</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural policy</li> <li>• Industrial policy</li> <li>• Tourism policy</li> <li>• Education, training, and youth policy</li> <li>• Health protection and improvement</li> <li>• Civil protection</li> <li>• Administrative cooperation</li> </ul>

Source: Own representation on the basis of data from [eur-lex.europa.eu](http://eur-lex.europa.eu)

Above all, the Council is limited by the functioning of the European Union itself: In the case of the ordinary legislative procedure (OLP), it cannot adopt legislation without the agreement of the European Parliament. In the case of the special legislative procedure, it cannot adopt legislation without consultation or agreement - without possible amendment - by the European Parliament. Furthermore, for a law to be adopted, the Council must decide, depending on the issue, either by a simple majority of its members, by a qualified majority or by unanimous decision - the country holding the presidency has no privilege as regards the weight of its decision. Finally, the Council’s competence is limited by the legislation of the countries which is in force on their respective national territory in the case of the coordination competence.

Nevertheless, holding the Presidency of the Council of the European Union, however limited in terms of capacity to act, is still an important office: It makes it possible to consolidate the sense of belonging of the member state, to strengthen their involvement, and to focus the debate on issues that the country in office considers substantial. In addition, regarding the Council itself, it retains an important role in the process of adopting legislation, negotiating international agreements, and determining the EU budget - all of which support the ambitions of the country holding the Presidency of the Council.

### ***What Challenges are facing the European Union? Two necessary elements of reform***

The EU is the culmination of a peace project which was created in the aftermath of the two world wars, which ravaged European countries throughout the first half of the 20<sup>th</sup> century. Initially embodied in the European Economic Community (EEC) and the European Atomic Energy Community (EAEC), it became the Union as we know it today in 1992, through the Maastricht Treaty. Its influence has greatly evolved: It has become one of the most influential supranational structures globally, and is an important commercial and industrial pole, notably through the economic weight of its Internal Market. On the other hand, it is also challenged by internal economic, social, and political heterogeneity, which sometimes (i) creates tensions (ii) leads to problems posed by international trade and relations which must be dealt with.

The first challenge is that of internal economic heterogeneity in Europe. In terms of economic influence, the highest gross domestic product (GDP) is that of Germany, which reached \$3,944 billion (2010 International \$, PPP) in 2019 – before the full effects of the Covid-19 became apparent. By comparison, France, Italy, and Spain stood at \$2,972, \$2,150 and \$1,572 billion, respectively. Other countries are shown in the subsequent table.

**Table 2: Gross Domestic Product (in PPP, 2010 International \$ (billions)) of EU Countries (incl. UK), 2019**

Germany	3944.38
France	2971.92
United Kingdom	2913.56
Italy	2150.19
Spain	1572.01
Netherlands	961.78
Poland	660.94
Sweden	597.33
Belgium	547.01
Austria	448.76
Ireland	392.64
Denmark	382.98
Finland	272.27
Czechia	258.90
Portugal	253.86
Greece	252.00
Romania	234.00
Hungary	171.78
Slovak Republic	114.56
Luxembourg	68.85
Croatia	67.15
Bulgaria	63.19
Slovenia	57.27
Lithuania	51.85
Latvia	31.97
Cyprus	28.68
Estonia	27.65
Malta	14.69

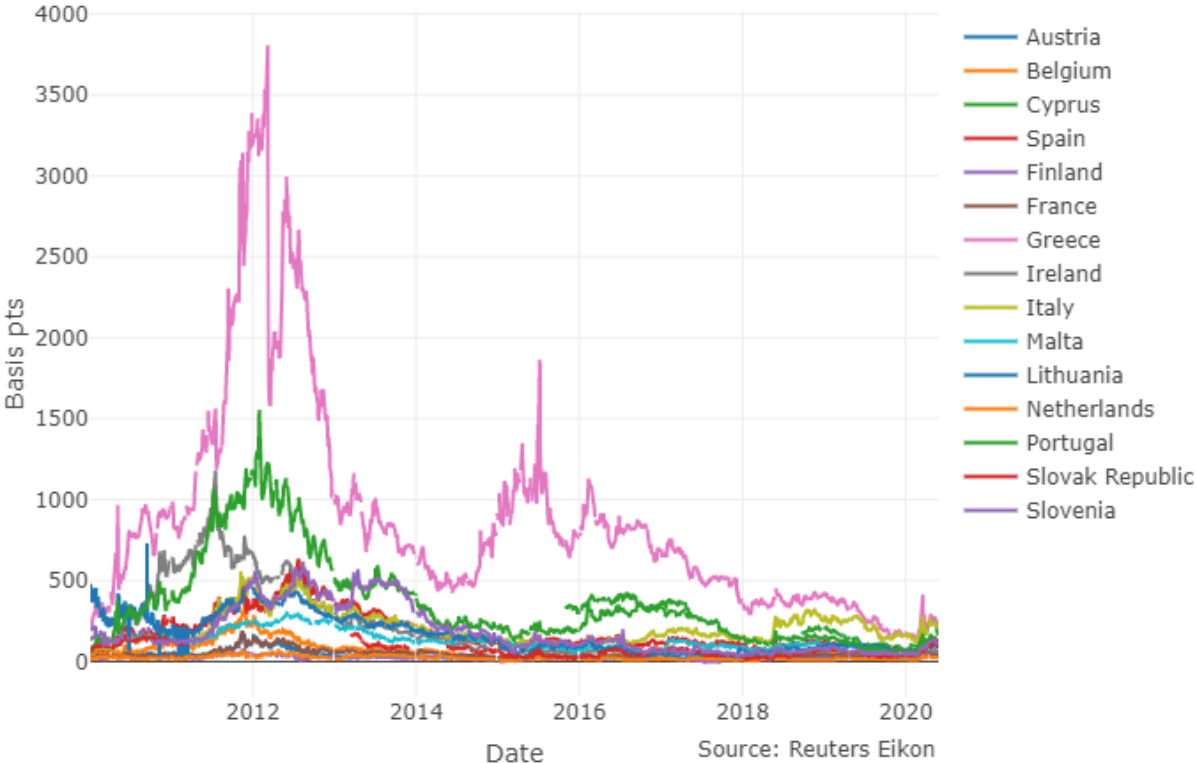
Source: Own representation of data available from World Bank, World Development Indicators

The level of development is also very heterogeneous: The Human Development Index (HDI) is 0.945 for Germany in 2019 (giving it 6<sup>th</sup> place in the world HDI ranking), when it is 0.864 for Portugal in the same year (38<sup>th</sup> in the world according to the HDI ranking).

Despite the sharing of a common currency for some member states in the Eurozone, the different – sometimes poor - management of public finances in some countries is a risk for the current system, which tends to irritate others - among which are the fiscally conservative so-called “Frugal Four” (that is, Austria, Denmark, the Netherlands, and Sweden). The result is more expensive access to financial markets for countries such as Greece, while Germany, Belgium, and France have benefited from negative sovereign rates in the short to long term in 2020. The financial markets, by making it more expensive for more unstable or poorer countries to borrow and finance infrastructure, are indirectly supporting the economic disparities between countries. Sovereign spreads, which are the difference in interest rates between two sovereign

bonds of the same maturity, are nevertheless less and less representative of the real situation: as the following graph shows, the increase in bond spreads during the Covid-19 pandemic crisis is limited compared to the situation in 2012 (or for Greece in 2015), although the individual countries still differ economically.

**Figure 1: Sovereign Bond Spreads in the Eurozone**



Source: Delatte A.-L., Guillaume A. (2020), *COVID-19: A new challenge for the euro area*, [voxeu.org](https://voxeu.org), 17.07.2020 (accessed 28.08.21)

In addition, the geographical situation of certain member states exposes them to migratory pressures, the responsibility for which is largely left to the country concerned, whereas it should be the responsibility of all member states in accordance with the idea of the freedom of movement of citizens established in the Schengen area. This situation leads to the emergence or growth of populist parties or groups, whose demands are sometimes met by the government in power: In the case of Poland and Hungary, governing politicians are undermining the rule of law through a series of measures, and taking other actions contrary to the spirit of the EU such as restricting the freedom of the press or the adoption of stricter abortion laws. Yet one of the strengths of the EU is its Charter of Fundamental Rights; the rule of law is therefore a pillar of the sense of belonging to the EU. The lack of a sense of a European identity, populist movements, and migratory flows expose the EU to the risk of disintegration, of the departure of member states, such as in the case of the United Kingdom with ‘Brexit’.

The second issue is the affirmation of the EU in the current global framework. The Covid-19 crisis has brought entire economic sectors to a halt, weakening many countries, only a few of which have managed to pull through relatively unscathed: China saw its market share in global exports rise from 16.6% in the last quarter of 2019 to 18% in the first quarter of 2021, while Europe has only just recovered its pre-pandemic export volumes at the beginning of the year.

The crisis has reinforced the dependence on digital technology, while accelerating the digital revolution, which is now essential to production and production chains. The latter is also a tool for managing the challenges of climate change, but continues proceed sluggishly in Europe, particularly in Eastern and Southern European countries. And Europe's lagging behind in this highly strategic area is taking place against a backdrop of trade tensions, which are reinforced by the deterioration of international institutions such as the World Trade Organization. Climate change, the Sino-American trade war, military conflicts, and the resulting migratory flows, volatility of oil prices, and tensions with neighbouring countries (particularly Turkey and Russia) are all elements that are upsetting the geopolitical chessboard and jeopardising international exchanges particularly when it comes to the EU.

To address this international context, as well as the internal and external challenges of the EU, it is important to put in place common strategies and to involve all member states. During its Presidency of the European Council - from July to December 2020 - Germany put in place several mechanisms to mitigate the impacts of the Covid-19 crisis, to reduce the inequalities caused by the crisis, and to ensure a rapid economic recovery for Europe. The environment that France will inherit when it takes office from January 2022 will be ending or prolongation of the crisis; given that, two policy reform areas seem particularly important: That of a reform of the European budgetary framework ensuring a management of economic cyclicity adapted to the current world, and that of a European industrial strategy. These two policy areas, which are substantial in scope, do not take precedence over the other issues, but are crucial in the sense that it is unthinkable to continue to operate with outdated institutions and approaches that are not adapted to face the challenge of modern problems. A fairer industrial strategy, if well designed, would optimise efforts, respond to various issues, and ensure the EU's strategic autonomy in the coming decades. As these areas have received a lot of media attention in France recently, one could think that the next French presidency could be a golden opportunity for France to promote reforms. However, other issues, even if no longer at the centre of current attention, remain urgent: The Council must also supervise and implement the European Green Deal, manage migration flows, and continue to take responsibility for the well-being of the EU's citizens, their freedoms, and their security. The Council must continue to play its role as a "normative power", imposing common rules on all, and redouble its efforts to promote respect for the rule of law, despite the reluctance of certain member countries. In addition, countries have everything to gain by pooling their efforts in the fight against cross-border issues such as cybercrime, fraud, and the endangerment of European citizens abroad (terrorism, hostage-taking, etc.), even if it is difficult for them politically to 'abandon' part of their own sovereignty, as the failure of the European Defence Community (EDC) in 1954 has shown. Finally, it is always useful to recall the importance of climate policies, as the consequences of the climate change are already visible across Europe in 2021: Flooding in Belgium, Germany and Austria; extreme temperatures and fires in Greece, Turkey, Canada, the US, Russia, and Algeria; landslides in Japan; famine in Madagascar; a record melting of ice caps, etc. The report of the Intergovernmental Panel on Climate Change (IPCC), published on August 9, 2021, reaffirms the responsibility of humans for global warming: It is greenhouse gas emissions which, by intensifying the atmospheric greenhouse effect, are the cause for accelerating global warming. Current conditions risk warming of the climate in the future to reach +4°C, with serious consequences for ecosystems and societies. To avoid this worst-case scenario and to mitigate the effects of climate change, serious changes must be initiated by all; Europe, which is also a pioneer in setting up the EU Emissions Trading System carbon market and implementing



stringent environmental standards, also has a role to play in coordinating policies and overseeing efforts, while at the same time mitigating the economic and social disadvantages of such changes. For it is these economic and social disadvantages that are holding back climate action - and France has had bitter experience of this, when the so-called ‘yellow jacket’ (*gilets jaunes* in French) protests erupted against an increase in the price of motor fuels, the latter resulting in a decrease in the purchasing power of citizens. It is therefore essential to accelerate efforts and to do so in a considered way to concentrate efforts where the best results can be expected, without going through energy-intensive and inefficient steps: This is the importance of the European Green Deal. The country holding the Presidency of the European Council should ensure that all member states implement the plan and that national policies are consistent with the climate objectives: This can be done by regularly focusing discussions on climate issues, and getting member states used to this discourse.

## **2. The First Element: The Budgetary Rules at EU Level**

The first topic which will be focused on is the European budgetary framework. Having been exposed and undermined by previous economic and financial crises, the Covid-19 crisis has once again exposed its limitations.

### **2.1 Presentation of the Current European Budgetary Framework**

The European budgetary framework is a set of rules that the member states of the European Union must respect when drawing up and executing their respective national budgets. It was established at the time of the creation of Economic and Monetary Union (EMU) by the Maastricht Treaty (1992) and is based on the Stability and Growth Pact (SGP) of the Amsterdam Treaty (1997), supplemented by the Six-Pack (2011) and Two-Pack (2012) reforms - these reforms, however, did not change the existing rules in substance. In 1998, the EU also introduced a preventive budgetary arm, which was supplemented by a corrective budgetary arm in 1999.

The European budgetary rules consist of the criteria to be met prior to the adoption of the euro as a national currency and the rules of good conduct after the creation of the Eurozone. The four convergence criteria require the (1) control of inflation, (2) sustainable public debt and deficit (3) exchange rate stability and (4) interest rate convergence. The SGP reinforces the application of these rules as set out in the Maastricht Treaty, i.e. a government deficit cap of less than 3% of GDP, plus a target of zero government deficit in the medium term, and a gross government debt target of less than 60% of GDP. In the event of non-compliance, member states must make proposals to try to return below the required levels, so that the debt can be made sustainable - this is the purpose of the corrective arm. The European Commission then makes further budgetary recommendations to bring the government deficit below 3% within a maximum of two to three years. In certain circumstances, it can also trigger an excessive deficit

procedure (EDP) against them: This procedure includes several stages that can go as far as the levying of financial sanctions (these sanctions are capped at 0.5% of GDP) on non-conforming member states. To date, no country has ever been sanctioned in this way, although the EDP has often been triggered. It should be noted that since 2012, most member states (only the United Kingdom and Czechia did not ratify the corresponding budgetary pact) are forced to incorporate budgetary norms into their national constitutions.

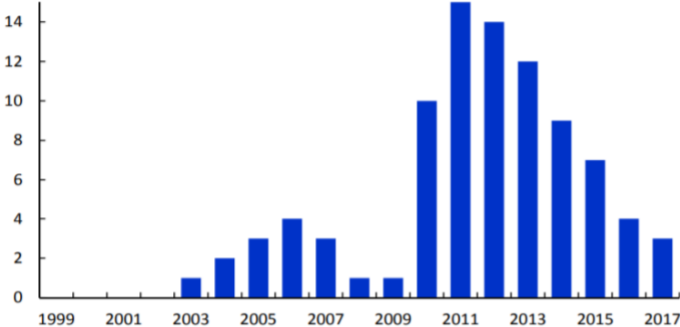
The purpose of these fiscal rules is to achieve economic convergence and ensure on-going fiscal discipline. The need for them is twofold: On the one hand, an expansionary fiscal policy is, in the context of the common Internal Market, necessarily a source of demand externalities, and these externalities affect the growth of the other member states; on the other hand, it is a question of ensuring the sustainability of the Eurozone system. Since the creation of the Eurozone, there has been a risk that a single country could default and threaten the stability and integrity of the entire system through a bailout - a risk embodied by Greece during the sovereign debt crisis in 2011. A system based on the sharing of a currency between several countries is, because of this contagion effect, inherently more fragile than that of a single country with a single currency.

## 2.2 Context and European Countries in Practice

### 2.2.1 From the Maastricht Treaty to the Covid-19 Crisis

Originally, the budgetary rules were primarily upper-bound thresholds; although they have no economic basis, they were easy to respect. The bursting of the internet-based “dot-com” bubble in the early 2000s forced some countries to break with the Stability Pact. However, the first reforms disregarded this reality: They perpetuated the Maastricht criteria and even extended their scope of application. The number of countries subject to an Excessive Deficit Procedure became positive from 2003. It remained so thereafter and fluctuates according to the occurrence of crises. After a peak during the sovereign debt crisis in 2011, when 15 countries were under an EDP, the number has gradually decreased to 1 in 2020, reflecting the economic recovery in the EU.

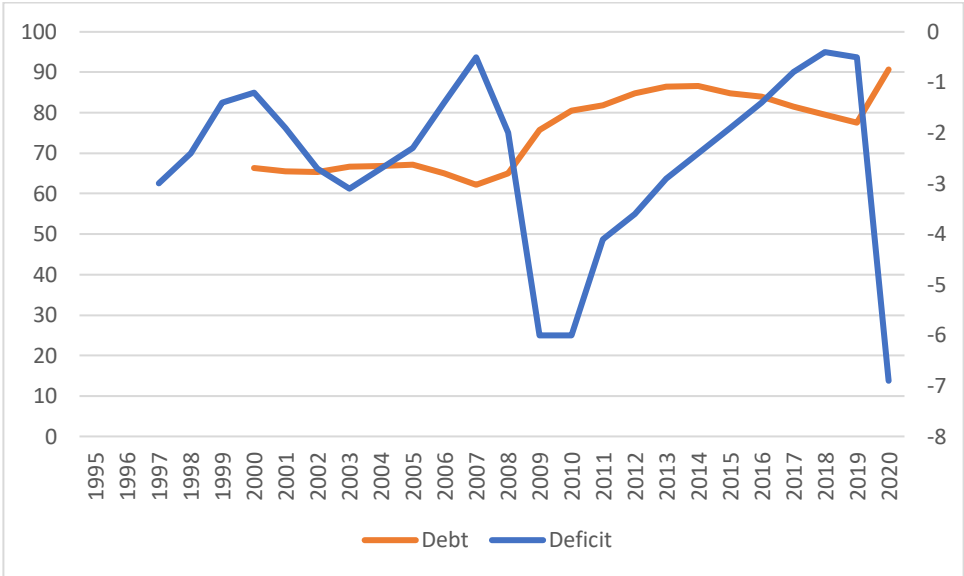
**Figure 2: Number of Countries under an Excessive Deficit Procedure (EDP), 1999-2017**



Source: European Commission, EDP Archive

The fiscal rule on general government gross debt is particularly problematic, as many EU countries have not been able to keep their debt below the 60% threshold or even to reduce it. At the beginning of the 2000s, many Eurozone countries had debt of between 40% and 60% of national GDP and only three countries had a debt as a percentage of GDP above the 70% threshold (these were Greece, Italy, and Belgium). From 2000 to 2007, their debt ratios show similar trends, with a quasi-stabilisation around the initial threshold, and even a decrease in the case of Belgium, Spain, and Ireland. From 2007-2008 onwards, the Transatlantic Banking Crisis and subsequent economic recession and the related increase in public spending, which ensured social protection mechanisms, resulted in an increase in debt. Following the subprime crisis, public debts not only increased considerably (in 2006, Ireland’s public debt represented 24% of GDP, reaching 120% of GDP in 2012), but they also diverged greatly: The subprime crisis and the sovereign debt crisis impacted the countries of the Eurozone to varying degrees, and their ability to stabilise or even return to pre-crisis levels differed. In 2019, German debt fell back below 60% of GDP, while Greece’s debt reached 182% of GDP. The increase in public debt from 1997 to 2019 was similar in France and Spain (35-40 points of GDP) and lower in Italy (around 20 points of GDP).

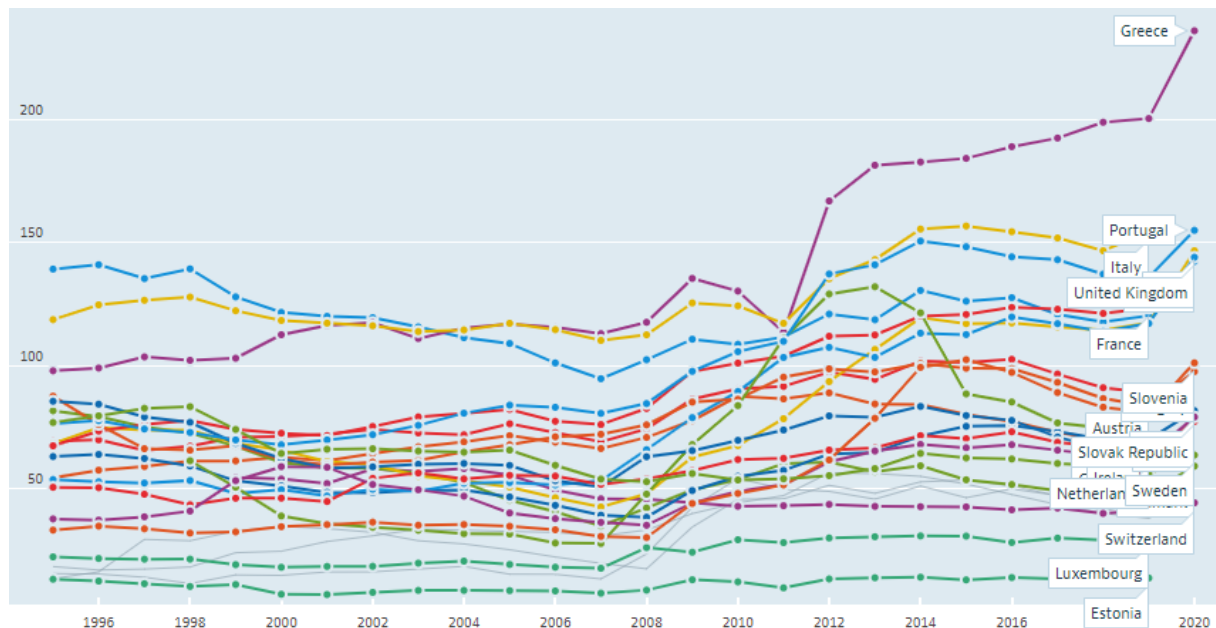
**Figure 3: Debt (in % of GDP) and Deficit (in %) in the Eurozone, 1995-2020**



Note: The left ordinate axis refers to the debt values. The right ordinate axis refers to the deficit values.

Source: Eurostat, Viewed on 04.08.2021

**Figure 4: EU Countries' Debt Levels (in % of GDP), 1995-2020**



Source: OECD Data, *General government debt*, viewed on 04.08.2021

## 2.2.2 The Covid-19 Crisis

The Covid-19 crisis resulted in governments taking counter-cyclical measures and increasing public spending to mitigate the sanitary and economic impacts. Since the beginning of the health crisis (i.e., from March 2020 on), total loans and securities vis-à-vis the Eurozone have increased by 21.82%. As a result, in 2020, the public debt of the EU27 is 90.7% of GDP and that of the Eurozone 98.0% of GDP, increases of 17% and 16.8% respectively compared to 2019. Debt has increased significantly more in the southern countries than in the northern countries of the Eurozone, widening pre-existing disparities. At the end of 2020, seven Eurozone countries had debt of more than 110% of GDP and ten countries a debt of less than 80% of GDP (seven of which were below the 60% threshold). France's debt is 115.7% of GDP, much higher than Germany's (at 69.8% of GDP), but also much lower than Italy's (155.8% of GDP). **As of October 2020, 29 EU countries were subject to an Excessive Deficit Procedure.** Forecast figures for national debt-GDP ratios in the context of the Corona shock are available from the IMF's Fiscal Monitor Database and show a strong increase of the medium-term debt GDP ratios. High debt-GDP ratios have remained manageable for most countries since nominal and real interest rates are very low in the Eurozone (and the EU) and the United States.

**Table 3: Actual (2019 and 2020) and Forecast (2021-2026) Figures for Gross Debt-GDP Ratios of Selected EU Countries, the UK, US and Japan, 2019-2026**

	2019	2020	2021*	2022*	2023*	2024*	2025*	2026*
France	98.1	113.5	115.2	114.3	115.2	115.9	116.3	116.9
Germany	59.6	68.9	70.3	67.3	64.8	62.2	59.6	57.1
Italy	134.6	155.6	157.1	155.5	155.1	153.7	152.0	151.0
Spain	95.5	117.1	118.4	117.3	117.3	116.8	117.7	118.4
Japan	234.9	256.2	256.5	253.6	252.9	253.4	254.0	254.7
United Kingdom	85.2	103.7	107.1	109.1	110.7	111.4	112.2	113.0
United States	108.2	127.1	132.8	132.1	132.4	133.0	133.9	134.5

Source: IMF Fiscal Monitor Database, April 2021 release, Gross Debt

The state of public finances in the Eurozone has considerably worsened in 2020, and a ‘general escape clause’ has been introduced to allow temporary derogations from the debt and deficit limits set by the Stability Pact. However, this clause is due to expire in 2023. According to a study by Euler Hermes and Allianz (EULER HERMES/ALLIANZ RESEARCH, 2021), unless the heavyweights of the Eurozone - notably France, Spain, and Italy - record significant increases in nominal GDP growth and/or an improvement in their primary balance, a return of the Eurozone’s debt/GDP ratio to its pre-crisis level will not occur before 2035. According to the study, Germany would not return to its pre-Covid-19 public debt levels before 2028, even if it returned to a ‘business as usual’ environment, i.e., to the levels of nominal growth and primary balance observed over the period 2000-2019. As for the other major economies of the Eurozone, it would take even longer to return to normal: 26 years for Italy, 67 years for France and 89 years for Spain. A return to the “old normal” too quickly is dangerous; one must only look at the lasting scars on economic recovery left by the austerity policies put in place following the Transatlantic Banking Crisis to be convinced of this.

### **2.2.3 Other Features of the Current Framework**

The current level of public debt is also taking place in the very specific context of very low or even negative interest rates and massive injections of liquidity into the economy, given the limited effectiveness of monetary policy in the vicinity of the Effective Lower Bound. The nominal interest burden of Eurozone countries, which was close to 4% of GDP in 1999, was already down to 1.6% of GDP in 2019; in June 2021, the average annual short-term interest rate reached -0.54% for all Eurozone countries. This fall in interest rates is generalized to the medium and long term: At the same period, the average annual long-term interest rate for the Eurozone was 0.3%, 0.15% for France, 0.88% for Italy and -0.29% for Germany - and forecasts predict a stabilisation of rates in the coming years. The issuance of medium- and long-term public debt securities, which is now available to several countries, limits the refinancing risk

and helps to curb the snowball effect of interest charges on public debt. Hence, debt has become very inexpensive, and central bank purchases of public securities contributes to lowering the effective interest burden, as long as the central bank key rates remains lower than the apparent rate of the bond debt. There is thus a strong mismatch between public debt and its cost, which reinforces the increasingly frequent recourse to fiscal policy, whose interest in the face of economic cyclicity and the problems associated with “secular stagnation” is highlighted by recent economic studies. Austerity policies are no longer popular, with fears of a further reduction in global growth, a fall in the labour income share and an increase in the global unemployment rate at least until 2030.

Thus, when we talk about reforming the European budgetary framework, we are talking about reforming a budgetary framework inherited from the 1990s and applied to a context characterised by growing inequalities both between and within European Union countries, unsustainable levels of debt, low investment, stagnating wages, and post-crisis economies.

## **2.3 What is at Stake in Reforming the European Budgetary Framework?**

This overview highlights a significant and recurrent failure to comply with budgetary rules (i) by (i) the 27 countries of the European Union and those of the Eurozone (ii) with significant disparities. The evolution of the number of countries under the EDP also indicates a mismatch between budgetary rules and economic imperatives, the latter leaving little room for public intervention during economic cycles. The zero medium-term deficit target implies that only automatic stabilisers are supposed to be at work; any discretionary fiscal policy is banned. Yet, while it is necessary to reduce public deficits in good times, it is also necessary to allow fiscal stimulus when the economic cycle is at its lowest, or to deal with the problems associated with secular stagnation.

The issues at stake in a reform of the European budgetary framework are many and do not meet with consensus: Some commentators disapprove of the very idea of reform. The discussion must also focus on the means to achieve suggested reforms: Should the entire framework be rethought, or should we work with an unchanged treaty? Thus, there is a need to distinguish between what is within the budgetary framework and what is not. For example, the treatment of the risk of a self-fulfilling debt crisis, i.e., induced by erroneous initial insolvency expectations and which was at the heart of the tensions surrounding sovereign debts in 2011-2012, is the responsibility of the European Central Bank (ECB), whereas the risk of a solvency crisis resulting from unsustainable budgetary policies could be prevented by the European budgetary framework. A reform is only relevant if it considers current problems - the first one being the management of economic cycles. Far from encouraging a structural public deficit, linked to the poor management of public spending and excessive debt accumulation, the benefits of public deficits resulting from counter-cyclical fiscal policies, whose evolution reflect the movements of automatic stabilisers and the interest rate burden on public debt, are indisputable. A second problem is that of short-termism: The conduct of budgetary rules favours a short-term vision whereas the consideration of longer time horizons would be more relevant, as in the field of sustainable development. The limit of the budget deficit to 3% of

GDP serves to hinder public investments that have a high initial cost but a potential long-term gain in growth, particularly those that promote the transition to renewable energies. Finally, simplicity and comprehensibility are lacking: The exact numerical budgetary rules are not grounded in economic theory, and the somewhat haphazard amendments over the past years can be confusing. Moreover, the budgetary analysis on which the European Commission bases its recommendations is founded upon unobservable variables, namely medium-term potential growth, the resulting output gap, and the structural balance - variables that are certainly useful for the ex-post economic understanding of budgetary adjustments, but which do not allow guiding economic policy in real time. The recurrent non-compliance with budgetary rules then leads to questions about their coherence, their legitimacy, and the credibility of coercive procedures.

Amongst the proposals that indeed exist on the subject, a few deserve our attention. Firstly, the rules should be based on multiannual rather than annual indicators, to encourage the investments necessary for growth and ecological transition. MARTIN ET AL. (2021) propose that countries should be subject to analyses and recommendations, to help them develop realistic public spending trajectories over several years. The relevance of this proposal lies in the fact that the generality of budgetary rules, which is necessary for their intelligibility, is not adapted to the economic heterogeneity of countries; but personalising the rules is also unimaginable, as it risks adding to the opacity of the system and to the general confusion – particularly amongst others in the financial markets - which could block investment decisions. There is a need for general budgetary rules and guidance which can be adapted to the diversity of situations. These analyses could come from national, European, and independent institutions, both publicly and privately funded, with diversity as the basis of their legitimacy. Lastly, while until now the reforms implemented have only tried tinkering to improve the framework, without ever seeking to transform it, adapting to the current framework may actually require a redesign of the fiscal framework in its entirety, i.e., both the rules and the institutional architecture of fiscal surveillance.

### **3. The Second Element: European Industrial and Trade Policy**

The Covid-19 crisis has given rise to a great deal of talk about industrial policy, whether national or European. The aim of the present analysis is to understand how it works currently, the challenges and limits, and the avenues for improvement.

#### **3.1 How Industrial Policy works at an EU Level**

At present, the EU is considered the second largest industrial power in the world; it is home to many major, globally-recognised companies - notably in the automobile, transport, defence, chemical/pharmaceutical, agri-food, mechanical engineering, mining, and steel sectors. The EU has undergone a gradual de-industrialisation over previous decades: The share of industry in total gross value added has declined from 22% in 2000 to 19% in 2016, the contribution of the manufacturing sector to European GDP has fallen from 18.5% in 2000 to 15% in 2012, while

the contribution of the services sector to European GDP has fallen from 25.4% in 2000 to 22.2% in 2019. The importance of the industrial sector varies strongly, however, from one member state to another: It represents more than 30% of GDP in Ireland and Czechia, compared to less than 20% of GDP in Belgium, the Netherlands and France.

An industrial policy is defined as a set of interventionist measures within a country’s government policy to develop domestic economic activities and promote structural change. It is a multisectoral policy.

**Figure 5: Industrial Activities**



Source: European Commission

As regards its industrial policy, the EU has limited room for manoeuvre, being constrained by competition policy and different national objectives. Following the logic of pure and perfect competition, the movement towards economic liberalisation and the lowering of external tariff barriers that occurred during the 1980s led to the restructuring and relocation of large parts of industry. In 2019, the European Competition Authority - whose function is to favour the development of a multitude of player on the market, by controlling and preventing cartels, the abuse of dominant positions, monopolies, mergers and state aid - blocked a proposed merger between two companies, Alstom and Siemens, because it risked leading to an abuse of a dominant position contrary to European law, thus putting an end to the intentions of these railway companies to merge in order to better compete with Asian or American giants. At present, the EU mainly adopts a horizontal approach when implementing its industrial policy, that aims to establish conditions favourable to the competitiveness of companies in the sector via the rules of competition.



The EU is limited in the design of its industrial policy by the fact that it falls only within its coordinating competences: Its role is to coordinate and complement the actions of the member states. It can be challenging to try to coordinate national industrial policies at the European level, when in the end it is the countries alone that decide on the implementation of their own respective industrial policies. Indeed, over the period 2014-2017, the largest share of industrial policy funding came from member states, whose average annual expenditure (0.75% of total GDP) was just over double that at EU level (0.35% of EU GDP).

European industrial policy is not the subject of a specific fund, which is explained by the fact that it cuts across a range of measures that can be specifically addressed in a more particular programme. The resources that the EU allocates to industrial policy are determined in the Multiannual Financial Framework (MFF), through different programmes: For the period 2014-2020, the main programmes were the European Union's Horizon 2020 Framework Programme for Research and Innovation, the European Fund for Strategic Investments (EFSI), the European Interconnection Facility (EIM), and the EU's COSME programme for the competitiveness of small and medium-sized enterprises; for the period 2021-2027, these will be covered by the Horizon 2020 successor framework programme, Horizon Europe, and the EIM. In addition to these programmes, for the period 2021-2027, there will be an allocation of 20% of the resources of the Next Generation EU recovery plan earmarked for the digital transformation.

Spending on industrial policy differs between the EU and national levels and between member states. 80% of EU spending on industrial policy is, via ESIF, earmarked for regional policy, thus delegating the choice of projects to member states and regions. 70% of the rest, i.e., what is within its remit, is spent on research and development and digital policy. By comparison, 50% of member countries' spending on industrial policy finances the ecological transition - this is however mainly due to Germany, whose public support for this transition averaged €33 billion over the period 2014-2020. For Eastern European countries, infrastructure accounts for the largest share of industrial policy spending. Industrial policy in European countries is mainly done at the regional level, without a common vision or cross-border coordination.

### **3.2 What is at Stake in European Industrial Policy?**

The importance of industrial policy lies in the fact that it is at the congruence of economic, environmental, social and sovereignty issues. It is a source of growth and job creation (industry generates almost 22% of jobs) and is a major lever for environmental policy. At the EU level, an industrial policy could also strengthen economic growth, promote European cohesion, and ensure the integration of all players in the wealth creation process. It is a strategy which, if well-coordinated, has advantages for the entire production chain, from large companies to SMEs. At the same time, since these objectives are sometimes in conflict with each other, it requires prior reflection on the types of measures to be put in place and how to go about achieving them.

### **3.2.1 The Challenge of Economic Growth, the Digital Transition and Competitiveness**

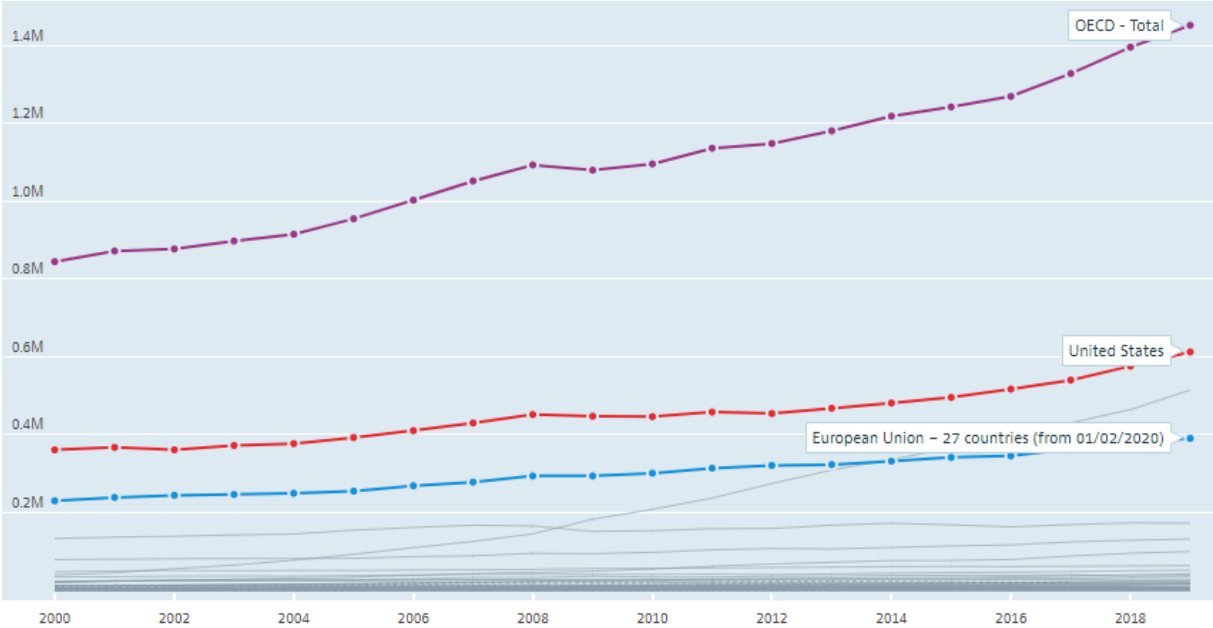
A European industrial policy could be the driving force behind the EU's recovery. The Covid-19 crisis, causing an economic slowdown or even bringing some sectors to a complete standstill, makes it unlikely that a rapid recovery can be achieved just by resorting to the usual methods, especially in growth sectors and those sectors most affected by pandemic containment measures. A European industrial policy could also enable industrial recovery, but more importantly ensure the long-term global competitiveness of European industries through a digital transition: AGHION ET AL. (2015) have argued that it can enhance productivity and productivity growth, although that depends on the type of measures implemented. In fact, the aim of setting up an industrial policy at EU level is not to support all European industries in the context of globalisation against all odds, but to make a reasoned choice in terms of the measures and sectors that one wishes to strengthen. Some sectors require certain measures or reforms, but generally function well within the competitive framework implemented by the EU's Internal Market - this is the case of the agricultural market, governed by the EU Common Agricultural Policy (CAP). This sector is quite content with the present horizontal industrial policy, whose measures apply to the entire industrial fabric. Other sectors, however, require large investments and a set of measures that cannot be met by a strictly horizontal industrial policy; their survival depends on direct government support - as is the case for the digital transition. This sector is also characterised by the fact that it depends on the creation of a European network to be competitive with the two global economic powers, namely the United States and China; it may not be efficient if strictly done at regional level.

The resilience of the industrial fabric necessarily depends, in one way or another, on technological and digital advances, which European industrial policy should thus support. The use of digital technologies creates new outlets (products and services), improves the functioning of industries, (inter)operability, and production processes: The cloud, the Internet of Things, blockchain, artificial intelligence, big data - are all tools that have had a crucial impact on the functioning of companies in the modern economy. However, Europe is lagging in this area: In contrast to traditional industry, Europe has no global player in the Internet sector and no alternatives are in sight that could compete with the American giants such as Google, Amazon, Facebook, Apple or Microsoft. The infrastructure needed for Industry 4.0 - the industry of the future, which is the convergence of the virtual world, digital design and management with real world products and objects - is lacking. Faced with an increasingly digitalised society (in 2020, 85% of the population used the internet at least once a week) and growing internet commerce (in 2020, internet sales reached €112 billion euros thanks to an estimated +32% increase in product sales on the internet (FEVAD, 2021), many companies were nevertheless lagging technologically in terms of accessing information and services. This lag, the consequences of which were felt during the Covid-19 crisis, particularly affects SMEs; only 17% of them use cloud computing services and just 17.5% sell products or services online in 2019, a very slight increase of 1.4 percentage points compared to 2016. The digital transition, which is therefore an essential tool for economic growth, requires investment in infrastructure and capital, as well as in workforce training. Sadly, in 2020, 42% of the EU's population still lacked at least basic

digital skills. This puts a strain on the production capacity of companies and increases inequalities between regions and countries and between social classes, as it is as a rule the poorer strata of societies that are less qualified.

To ensure the competitiveness of companies on a global scale, financial support for research and development (R&D) projects is an essential industrial policy measure, as it allows existing products or techniques to be improved or leads to new, breakthrough innovations. Innovation is a precursor to all growth according to Schumpeter, and the industrial fabric is in many ways one of the main sources of it. It is therefore surprising to note the level of gross domestic expenditure on R&D, which in 2019 was worth US\$390,520 million for the EU27 countries, far behind the United States, which alone spent US\$612,714 million.

**Figure 6: Gross Domestic Spending on R&D (in millions of US dollars), 2000-2020**



Source: OECD Data, Gross Domestic Spending on R&D, viewed on 04.08.2021

### 3.2.2 Climate Issues

Industry is a polluting sector: In the European Union, in 2018, energy use remains the main source of GHG emissions (77.2%), of which 28.9% are accounted for by the energy industry, particularly electricity production, and 22.0% by transport; followed by agriculture (10.5%) and industrial processes (9.1%) (FRENCH MINISTRY OF THE ECOLOGICAL TRANSITION, 2021). Industry is a responsible actor in terms of emissions and thus climate change and therefore naturally must make efforts to reduce said emissions. The sector has strong potential to ensure a fair and equitable transition, as it adapts by innovating in green technologies. And it is a sector that allows public authorities to easily meet the climate commitments made, as they only need to decide on regulation or leave it to market dynamics (see, e.g., the carbon emissions market).

Industrial policy is a pillar of environmental policy for two reasons: Industries are actors in the ecological transition through their consumption of resources and their production processes, and because they produce the technologies and resources that are necessary for it. Digital technology, which is also a pillar of industrial policy, makes it possible to support companies in their ecological transition but requires vigilance regarding the pollution it itself generates. The production of renewable energies, without which it is impossible to respond to the problems posed by the climate emergency, is a strategic industrial issue: The EU could help create a new competitive energy sector and ensure the functioning and independence of EU companies.

Firstly, industries can act on the ecological transition through their consumption of resources. The use of digital technology optimises energy use, contributes to a reduction of the carbon footprint by optimising consumption patterns and production processes, by rationalising usage and by responding to a need and utility in real time. This is the idea behind “smart” innovations, such as the smart grid: The latter is an electricity distribution network that promotes the circulation of information between suppliers and consumers to adjust the flow of electricity in real time and allow for more efficient management. At the same time, however, digital technology is energy intensive, consumes large amounts of non-renewable natural resources (rare metals are used in the production of many low-carbon technologies), and generates a lot of waste. Waste electrical and electronic equipment (WEEE) from the digital sector is estimated at 53 million tons in 2019 (COURBOULAY, 2020), contributing to so-called digital pollution. Data storage centres, whose energy requirements are increasing due to the exponential growth in the amount of data collected to be stored and processed, as well as software, which consumes a lot of energy, are the main contributors to this pollution. To mitigate the negative effects of digital use in the EU, it is up to member states to encourage the development of circular economies and to ensure the supply of renewable energy, and up to industries to reinvent their economic or business models. The industrial economy and the economy of functionality are two examples of economic models that can reorganise the industrial system in a way that makes it compatible with the biosphere and sustainable (FROSCH/GALLOPOULOS, 1989): The industrial economy replaces the linear production system with a circular economy and favours the closing of the product life cycle (see on the example of Kalundborg in Denmark, VAN NIEL (2014) and BOUTILLIER ET AL. (2014)), while the economy of functionality sells to companies, individuals, or territories the use of a certain good or service (for example, the Michelin company makes available tyres for trucks that are invoiced according to the number of kilometres travelled). The transformation of production chains requires thought to be given to the desired activities, the actors involved, and the origin, transport and recycling of the resources used; it requires heavy prior investment that can be optimised by several countries at the same time, if there is real planning between them. The interest of having an industrial policy at EU level is to ensure coherence and complementarity between industrial networks and to optimise territorial management.

Industries can also act on the ecological transition by producing renewable energies. Renewable energies present an opportunity to create a new industrial sector, and therefore to create jobs. Ensuring the ecological transition for each EU member state requires the establishment of a European network that introduces renewable production sources into the energy systems of all participating countries. The importance of the grid is that electricity suffers from losses due to energy transmission over long distances: Energy exchanges must be consolidated at a regional level, to avoid disruptions in electricity supply. This network, to accompany the ecological transition, must be resilient, efficient, and complete: The choice of energy mix, the

decentralisation of production, the interconnection of systems, the locations and capacities of storage are all aspects to be taken into consideration. It is a highly complex project that needs to be supervised within the framework of a pre-established, international plan. The scale of investment required puts it at risk if countries do not coordinate amongst themselves, if they invest in independent, isolated, autonomous national projects, given their political priorities and energy preferences - as Germany has done with the Nord Stream 2 pipeline. It is within the remit of the European Green Deal to propose a sustainable investment plan to support green innovation and to provide countries with the financial support required to train and retrain workers from the fossil fuel industry - which, fortunately, is beginning to happen -, but an industrial policy that takes on the same tasks as the European Green Deal would be of no use, since it could complicate procedures, replicate work and thus hamper the implementation of the plan. However, an industrial policy can provide support for renewable energy sectors through support for business start-ups and research efforts, appropriate training to meet the demand for skilled labour in industry, etc.

By guiding and redirecting investment towards greener technologies, adapting infrastructure and regulations to meet climate objectives, and supporting research through the development of innovation hubs, an industrial strategy can focus economic growth on a decidedly environmentally-sustainable approach. It is a support for the European Green Deal as long as it does not create unnecessary complexities.

### **3.2.3 Integration Issues**

A third challenge which a European industrial policy must consider is one of ensuring the integration of EU member states. Economic growth can be accompanied by the growth of inequality if the wealth created is not redistributed equitably amongst the members of society. The wave of relocation of companies to Eastern European countries due to the phenomenon of social dumping led to an increase in heterogeneity between countries, some of which are now dependent on the trade of others; these countries have a low proportion of skilled jobs and are competing on price with the rest of the world. European integration brings justice and political stability, the latter being necessary for economic growth: Indeed, political and economic freedoms protect property rights and develop market competition, which are prerequisites for promoting growth, while continuous protests and strikes can discourage the inflow of foreign direct investment, perpetuating the vicious circle.

Without proper education, inequalities between Western and Eastern/Southern European countries are likely to increase and threaten the stability of the system. It is essential to make quality education available to the middle, disadvantaged and rural classes to enable them to participate in modern production processes. There is currently a heterogeneity of digital performance between European countries, which is reflected in the Digital Economy and Society Index (DESI): while Ireland leads in all three e-business indicators<sup>1</sup>, Bulgaria, Greece,

---

<sup>1</sup> These indicators are: the rate of SMEs selling online, the turnover of e-commerce and the rate of cross-border online sales.

Luxembourg, and Romania rank among the lowest with scores below 25 points. Denmark and Sweden are the only EU countries where, according to the Digitalisation Intensity Index (DII), the percentage of highly digitalised companies (i.e., having at least 10 of the 12 digital technologies monitored) is very high: This index is above 10%.

To avoid widening inequalities, any implementation of plans at an EU level must consider the integration of all member states. The European Green Deal, for example, which provides for a European energy system, creates jobs on one hand – both skilled and unskilled - and destroys some jobs on the other. Central and Eastern European countries, where a significant part of the workforce is currently employed in the fossil fuel industries, would be the most affected: They fear both redundancies and higher electricity prices. If the EU forces member states to give up fossil fuels without allowing them to produce the renewable resources they need, the differences in development risk making some of them dependent on countries such as China or the United States, soon to be the global leaders in renewables. Indeed, in 2018, of the ten largest producers of photovoltaic modules, eight were Chinese, one Korean and one American. The same year, China produced 60% of the world’s photovoltaic cells and 71% of the world’s solar panels. In 2019, of all European countries, only Germany and France were ranked among the top five thermal renewable energy producers, and only Germany and Spain were ranked among the top five electrical renewable energy producers. In May 2017, the last major German photovoltaic manufacturer, Solarworld, announced its bankruptcy. This example alone shows how growth, ecological concerns and integration can come into conflict if no special efforts are made to combine them sensibly.

**Table 4: Top Five Countries by Thermal Renewable Energy Production, 2019**

Rank	Solar thermal	Geothermal (production)	Biodiesel (production)	Bioethanol (production)
1.	 <a href="#">China</a>	 <a href="#">China</a>	 <a href="#">Indonesia</a>	 United-States
2.	 United-States	 Turkey	 United-States	 Brazil
3.	 Turkey	 <a href="#">Island</a>	 Brazil	 <a href="#">China</a>
4.	 <a href="#">Germany</a>	 <a href="#">Japan</a>	 <a href="#">Germany</a>	 <a href="#">India</a>
5.	 Brazil	 <a href="#">New-Zealand</a>	 <a href="#">France</a>	 <a href="#">Canada</a>

Source: Wikipedia

**Table 5: Top Five Countries Producing Different Types of Renewable Electricity, 2019**

Rank	Hydro-electric (production)	Geothermal (capacity)	Wind (capacity)	Biomass (capacity)	Solar PV (capacity)	Thermo-dynamic solar (capacity)
1.	China	United-States	China	China	China	Spain
2.	Brazil	Indonesia	United-States	United-States	United-States	United-States
3.	Canada	Philippines	Germany	Brazil	Japan	Morocco
4.	United-States	Turkey	India	India	Germany	South of Africa
5.	Russia	New-Zealand	Spain	Germany	India	China

Source: Wikipedia

To ensure social growth, to enable all European countries to contribute and participate in long-term structural growth, the EU must act to overcome differences in development, enhance the natural resources of the different territories, and integrate all countries in reaping the full benefits of the different segments of its transition plans (digital, climate, etc.), which presupposes close cooperation between actors and a real common agenda with supervised political support. Investment is needed in institutions in Eastern European countries, in very high-capacity networks, both fixed and mobile, to improve connectivity, to set up innovative hubs, to promote the R&D work of all companies, research institutes, universities and public laboratories, and to facilitate information sharing and inter-connectivity.

### 3.2.4 Sovereignty Issues

The current context undermines Europe’s sovereignty. International trade is taking place in a new, profoundly uncertain framework, weakened by the deterioration of international institutions such as the appellate body of the World Trade Organization , the Covid-19 pandemic crisis, rising trade and geopolitical tensions between China and the United States, climate change pressures, oil price volatility, tensions relating to Brexit, and the rise of populist tendencies; the European Union’s economic, environmental, and social sovereignty and resilience, in this context, depend heavily on its industrial and commercial potential.

Firstly, the EU is impacted by the Sino-US trade war, both directly and indirectly. The imposition of additional tariffs on steel and aluminium imports by the US in March 2018, for example, had a direct impact on the EU, then the largest exporter of steel and the 5<sup>th</sup> largest exporter of aluminium. In addition, in a world where economies are linked by highly fragmented value chains, protectionist measures put in place by these countries against each other necessarily have knock-on effects on products and countries that are not directly targeted: These measures can create pressures on prices and commodity prices, and lead to a decline in

investment. The EU must be able to mitigate the consequences of this war, without taking sides, which is possible only if it secures industrial independence and asserts itself as a strategic trading partner for both powers. Trade treaties, while generally an opportunity to consolidate trade, have recently failed to be - as the German-brokered agreement between China and the EU the previous year showed.

Climate change, too, is creating new tensions. Renewable energy production is becoming a strategic issue, with the potential to establish European energy security, elevate the EU to an industrial power and ensure its global stability. By the end of 2019, almost all countries have set renewable energy targets; 166 countries have set targets for renewable electricity, 46 for transport and 49 for heating and cooling. Europe has set a target of having an energy mix with at least 32% renewable energy by 2030. These targets are changing the geopolitical landscape: On the one hand, renewables are contributing to greater economic and political independence from fossil fuel or uranium exporting countries, and on the other hand, they are creating new dependencies on renewable energy producing countries, which will compete for global market share, access to critical materials and technical know-how. Renewables represent industrial opportunities for politically independent countries in Europe, but they can also increase the dependence of those who are not involved in production and distribution.

The ecological transition may also cause unfair competition, as it subjects a certain set of actors to regulation without necessarily doing the same for the other actors. Some European companies are subject to environmental regulations or are part of the European Union Emissions Trading System (EU ETS). This European greenhouse gas emissions market, inaugurated in 2005, allows authorities to set a ceiling or cap on carbon emissions, puts a price on carbon and thus forces companies to include this cost in their production choices. This additional cost should then make investments in clean technologies more attractive, provided that the price of emission rights is high enough - which was not the case before 2017. However, the free rider phenomenon is also well established, and if foreign companies have free access to European market, an industrial policy will not be enough to prevent the competition that will be created by prices. Thus, there is an interest in setting up European standards and norms that force foreign companies to comply with the same constraints as European companies; hence the need to introduce a carbon-based border adjustment tax or equalization levy or to harmonise the carbon quota markets (several countries have followed Europe's example, the latest being China's first national carbon market, inaugurated on 16 August 2021 (following several years of pilot projects in Chinese cities and regions), which would make it possible to put a price on the externalities of European and foreign companies alike.

Finally, the Covid-19 health crisis was a reminder of the limits of European integration in world trade, demonstrating its dependence on certain countries, whether for masks, medicines, or semiconductor components. While electronic chips are indispensable in micro-technical applications and are used in the manufacture of a growing number of products, from bank cards to cars, Europe produces less than 10% of them worldwide, compared with 44% in 1990. Europe is therefore dependent on imports from the United States and Asian countries, which dominate this global market, estimated to be worth €439 billion in 2020. A delay in production and deliveries of chips caused the suspension of certain production lines at Stellantis, Volkswagen and Renault earlier this year. According to a recent report, the EU is dependent on foreign suppliers for 137 products from sensitive ecosystems out of a total of 5,200 products analysed, of which 34 products are presented as being more vulnerable (they have a low



potential for diversification and substitution by European production): these include various chemicals and raw materials used in energy-intensive industries and healthcare. The acknowledgement of the lagging behind of certain strategic sectors and their dependence on globalisation urges the EU to rebuild its production capacity in key sectors and diversify the source of its imports.

## **4. What Can be Done?**

At present, industrial policies in Europe are mainly implemented at the national level and follow a horizontal logic, which aims at respecting common European competition law. The horizontal approach is not always adequate, as some sectors require special efforts (e.g., artificial intelligence, the digital transition, etc.). Moreover, while implementation at a regional level is essential and cannot be done without real efforts from individual member states, it is also a shared competence that requires coordination at a European level, a common strategy that oversees efforts. Ideally, each member state would develop a national industrial policy, in accordance with a European implementation strategy and a multi-annual action plan - a coherent, efficient, and flexible institutional structure should be ensured to improve consistency between regional and national policies. The type of measures implemented (sectoral policies, policies that protect infant industries, etc.) should depend on the shared objectives.

To cope with the heterogeneity of countries and to ensure the competitiveness of European industries, it would be interesting to develop a “multi-speed EU” strategy, in which some EU members could pursue greater integration in specific areas while others could remain more loosely associated. The supervision and coordination of efforts, as well as the establishment of sectoral ‘alliances’, would allow for the improvement of industrial efficiency and competitiveness in certain areas - clean hydrogen, batteries, satellites, clouds, low-carbon industries, and raw materials, etc. This provision allows member countries more flexibility in terms of state aid for these sectors. However, care must be taken to ensure that the division of labour is truly beneficial to all countries, that it is based on a logic of comparative advantage, and that it does not lead to greater inter- and intra-country inequalities. This approach cannot concern all areas, as certain areas such as the ecological transition or the digital transition require the involvement of all countries.

In the current context, some countries risk severe marginalisation with social, political, economic and stability consequences for the EU. To facilitate the integration of all actors, from SMEs to large firms, and of each member state, exchange programmes, collaborations, the harmonisation and recognition of qualifications, and the exchange of information on best practices in structural adjustment programmes and policies should be promoted. Currently, the EU funding of R&D programmes operates on a competitive basis, therefore widening the development gap between countries due to differences in skills, quality, and number of structures; it would be appropriate to develop and supervise training programmes and R&D projects covering a wide range of areas directly in countries that are lagging. Integration also requires the continuous simplification of administrative formalities and bureaucracy for small and medium-sized enterprises (e.g. a Small Business Act), the definition of common rules on exports, and generally better access to the common Internal Market – it should indeed be remembered that the Internal Market accounts for more than 64% of trade between the EU

member states. Finally, training, whether initial or continuing, is a crucial issue which benefits the competitiveness and integration into international trade of all players, and permits further and future innovation.

Furthermore, it is generally advisable to undertake a set of measures that help foster structural growth and competitiveness - and these measures are common to several areas. For example, the institutional context and R&D benefit all industries, including small and medium-sized enterprises. For the sake of simplicity, a specific fund should be dedicated to one category of measures, rather than having different programmes with the same types of duplicated expenditure, as is currently the case – this would lead to a more efficient allocation and management of investments. Some issues are the subject of specific plans (e.g., the European Green Deal or the Common Agricultural Policy); there is no point in industrial policy replicating or replacing them, but it is not useless to involve them in industrial policy either, given the complementarity and interactions between industries: In this case, industrial policy can be limited to a horizontal approach.

Another dimension concerns the defence of the European Union against the unfair practices of its partners, which it ensures via anti-dumping or anti-subsidy instruments. While remaining attached to the principle of free trade and the multilateral system, the European Union must control foreign investments and subsidies that could distort competition within the Internal Market, and avoid the takeover of European flagship enterprises by foreign, especially public, companies. The same applies to the security of supply, by encouraging mechanisms for relocating strategic production chains. A reform of competition is also necessary to cope with an increasingly multipolar and fragmented, politicised, world (for instance, mergers of companies should be allowed if they lead to the strengthening of the EU's independence.). Similarly, it will be essential that any plan to decarbonise European industries is accompanied by a carbon tax at the borders that prevents 'carbon leakage'. Finally, negotiations of free trade agreements must consider the nature of changing international relations and the EU's environmental objectives.

Therefore, an industrial policy at a European level would make it possible to address all the issues mentioned above, by coordinating the efforts of member states, creating industrial alliances, targeting certain industries and certain countries, and ensuring that industries compete fairly with the rest of the world.

## **5. Conclusion**

In conclusion, due to the very particular context in which France will take over the Presidency of the Council of the European Union from January 2022, we can expect important changes in policy during the term of the trio of France, Czechia and Sweden. The fight against cybercrime, the regulation of products that pose a danger to human health or the environment, the preservation of freedoms, including that of the press, the issue of migration flows, etc. will continue to be at the heart of European concerns.

This paper highlighted the importance of two major policy projects: A reform of the European budgetary framework and the implementation of an industrial plan. The EU needs to modernise

the functioning of its institutions to be able to manage the internal and external challenges it is facing given the current uncertainty, trade and military wars, weak international institutions, Brexit, and the rise of populist tendencies that characterise the global framework. And it implies abandoning an outdated, inflexible, complicated, and systematically broken fiscal framework - the level of public debt in 2020, reflecting the Covid-19 crisis, is a poignant reminder. Ensuring Europe's strategic autonomy, European integration and the success of the European Green Deal demands abandoning an overly rigid vision of liberalism and the putting in place of a real industrial strategy common to all EU member states - a strategy that will need to be based on an in-depth discussion and dialogue with those member states and with industry, to coordinate national industrial policies so that they complement each other. The form and substance of policy measures may vary according to the current challenges, and across countries. They must nevertheless target sectors with a lasting growth potential, while respecting environmental and social justice constraints, and must ensure Europe's catching up with global leaders in the digital sector.

Both projects imply a significant reform of the functioning and role of the European institutions, which is justified by the fact that the world has changed a lot since the creation of the European Union. Impulses on the policy projects outlined herein can and should be initiated by France in its next presidency and carried forward by all member states of the European Union through common strategies.

## Literature

Aghion, P.; Cai, J.; Dewatripont, M.; Du, L.; Harrison, A.; Legros, P. (2015), Industrial policy and competition, *American Economic Journal: Macroeconomics*, 7(4), 1-32

Bellora C. (2019), Europe dans la guerre commerciale sino-américaine, CEPII, 30.09.2019

Ben Doudou, M.; Rahali F. (2019), Démocratie, stabilité politique et croissance économique : estimation à partir d'un modèle en panel dynamique, 15.11.2019

Boutillier, S.; Laperche, B., Picard, F., (2014), Le développement des systèmes produits-services dans les entreprises: une étape vers l'économie de la fonctionnalité?, *Economies et Sociétés, Série EGS*, 15(4), 551-578.

Claeys G. (2021), What Are the Effects of the ECB's Negative Interest Rate Policy?, PE 662.922 – 06.2021

Courbourlay, V. (2020), 53 millions de tonnes de déchets électroniques en 2019 [53 million tones of electronic waste in 2019], Institut du Numérique Responsable/Institute of Responsible Digitalisation, 3 July 2020 <https://institutnr.org/53-millions-de-tonnes-de-dechets-electroniques-en-2019>

Euler Hermes/Allianz Research (2021), Eurozone Government Debt: Quo Vadis From Here?, Allianz Research, 20 May 2021

European Commission (2020), In focus: Renewable energy in Europe, 18.03.2020

European Commission (2020), Un nouveau rapport de la Commission montre l'importance de la résilience numérique en temps de crise [transl. A new report of the European Commission shows the importance of digital resilience in times of crisis], 11.06.2020

European Commission (2021), Digital Economy and Society Index, DESI Report 2020

European Parliament (2020), A New Industrial Strategy for Europe, texts adopted, 25.11.2020

FEVAD (2021), Bilan du e-commerce en 2020 : les ventes sur internet atteignent 112 milliards d'euros grâce à la digitalisation accélérée du commerce de détail [E-commerce in 2020 : Internet sales reach 120 billion euros thanks to an accelerated digitalisation of commercial sector], 4 February 2021 <https://www.fevad.com/bilan-du-e-commerce-en-2020-les-ventes-sur-internet-atteignent-112-milliards-deuros-grace-a-la-digitalisation-acceleree-du-commerce-de-detail/>

French Ministry of the Ecological Transition (2021), Key Climate Figures: France, Europe, the World: Overview of Greenhouse Gases on Europe <https://www.statistiques.developpement-durable.gouv.fr/edition-numerique/chiffres-cles-du-climat/8-panorama-europeen-des-gaz-a#ancre1>

Frosch, R.A.; Gallopoulos, N.E. (1989), Strategies for Manufacturing. *Scientific American*, 261, 144-152 <https://doi.org/10.1038/scientificamerican0989-144>

- Geoffron, P. (2017), *Annales des Mines - Responsabilité et environnement, Comment transition numérique et transition écologique s'interconnectent-elles ?*, 2017
- Guerrero G. (2019), *Pollution numérique : quel impact environnemental*, Note BSI, 04.04.2019
- IGPDE (2020), *Vers une réforme des règles budgétaires de l'Union européenne en 2020 ?*, 17.09.2019
- Landesmann, M.; Stöllinger R. (2020), *The European Union's Industrial Policy: What are the Main Challenges?*, wiiw, 01.2020
- Lequeux, V. ; Gaillard B. (2021), *Politique industrielle : que fait l'Union européenne?* [transl. *Industrial Policy : What does the European Union do?*], touteurope.eu, 15.02.2021
- Martin, P.; Pisani-Ferry, J.; Ragot, X. (2021), *Reforming the European Fiscal Framework*, Les notes du conseil d'analyse économique, No 63. <https://www.cae-eco.fr/pour-une-refonte-du-cadre-budgetaire-europeen>
- Merlin-Brogniart, C. (2017), *Innovations, Nature et dynamique de l'innovation des nouveaux modèles de croissance : le cas de l'écologie industrielle et de l'économie de la fonctionnalité*
- N. Galland-Beaune (2021), *Le déficit public des Etats de l'Union européenne*, touteurope.eu, 03.02.2021
- REN21 (2020), *Renewables 2020 Global Status Report*, ISBN 978-3-948393-00-7, 2020
- Szczepański, M.; Dobрева, A. (2019), *European Parliament, Les politiques de l'Union – Au service des citoyens*, 06. 2019
- Van Niel, J. (2014), *L'économie de fonctionnalité: principes, éléments de terminologie et proposition de typologie*, *Développement Durable et Territoires*, 5(1), 1-21

## EIIW Diskussionsbeiträge

## EIIW Discussion Papers



ISSN 1430-5445:

Die Zusammenfassungen der Beiträge finden Sie im Internet unter:

The abstracts of the publications can be found in the internet under:

<https://eiiw.wiwi.uni-wuppertal.de/>

- No. 173 **Welfens P.J.J.; Perret K.J.:** Structural Change, Specialization and Growth in EU 25, January 2010
- No. 174 **Welfens P.J.J.; Perret K.J.; Erdem D.:** Global Economic Sustainability Indicator: Analysis and Policy Options for the Copenhagen Process, February 2010
- No. 175 **Welfens, P.J.J.:** Rating, Kapitalmarktsignale und Risikomanagement: Reformansätze nach der Transatlantischen Bankenkrise, Februar 2010
- No. 176 **Mahmutovic, Z.:** Patendatenbank: Implementierung und Nutzung, Juli 2010
- No. 177 **Welfens, P.J.J.:** Toward a New Concept of Universal Services: The Role of Digital Mobile Services and Network Neutrality, November 2010
- No. 178 **Perret J.K.:** A Core-Periphery Pattern in Russia – Twin Peaks or a Rat´s Tail, December 2010
- No. 179 **Welfens P.J.J.:** New Open Economy Policy Perspectives: Modified Golden Rule and Hybrid Welfare, December 2010
- No. 180 **Welfens P.J.J.:** European and Global Reform Requirements for Overcoming the Banking Crisis, December 2010
- No. 181 **Szanyi, M.:** Industrial Clusters: Concepts and Empirical Evidence from East-Central Europe, December 2010

- No. 182 **Szalavetz, A.:** The Hungarian automotive sector – a comparative CEE perspective with special emphasis on structural change, December 2010
- No. 183 **Welfens, P.J.J.; Perret, K.J.; Erdem, D.:** The Hungarian ICT sector – a comparative CEE perspective with special emphasis on structural change, December 2010
- No. 184 **Lengyel, B.:** Regional clustering tendencies of the Hungarian automotive and ICT industries in the first half of the 2000's, December 2010
- No. 185 **Schröder, C.:** Regionale und unternehmensspezifische Faktoren einer hohen Wachstumsdynamik von IKT Unternehmen in Deutschland; Dezember 2010
- No. 186 **Emons, O.:** Innovation and Specialization Dynamics in the European Automotive Sector: Comparative Analysis of Cooperation & Application Network, October 2010
- No. 187 **Welfens, P.J.J.:** The Twin Crisis: From the Transatlantic Banking Crisis to the Euro Crisis? January 2011
- No. 188 **Welfens, P.J.J.:** Green ICT Dynamics: Key Issues and Findings for Germany, March 2012
- No. 189 **Erdem, D.:** Foreign Direct Investments, Energy Efficiency and Innovation Dynamics, July 2011
- No. 190 **Welfens, P.J.J.:** Atomstromkosten und -risiken: Haftpflichtfragen und Optionen rationaler Wirtschaftspolitik, Mai 2011
- No. 191 **Welfens, P.J.J.:** Towards a Euro Fiscal Union: Reinforced Fiscal and Macroeconomic Coordination and Surveillance is Not Enough, January 2012
- No. 192 **Irawan, T.:** ICT and economic development: Conclusion from IO Analysis for Selected ASEAN Member States, November 2013
- No. 193 **Welfens, P.J.J.; Perret, J.:** Information & Communication Technology and True Real GDP: Economic Analysis and Findings for Selected Countries, February 2014
- No. 194 **Schröder, C.:** Dynamics of ICT Cooperation Networks in Selected German ICT Clusters, August 2013
- No. 195 **Welfens, P.J.J.; Jungmittag, A.:** Telecommunications Dynamics, Output and Employment, September 2013
- No. 196 **Feiguine, G.; Solojova, J.:** ICT Investment and Internationalization of the Russian Economy, September 2013
- No. 197 **Kubielas, S.; Olender-Skorek, M.:** ICT Modernization in Central and Eastern Europe, May 2014 Trade and Foreign Direct Investment New Theoretical Approach and Empirical Findings for US Exports & European Exports

- No. 198 **Feiguine, G.; Solovjova, J.:** Significance of Foreign Direct Investment for the Development of Russian ICT sector, May 2014
- No. 199 **Feiguine, G.; Solovjova, J.:** ICT Modernization and Globalization: Russian Perspectives, February 2012
- No. 200 **Syraya, O.:** Mobile Telecommunications and Digital Innovations, May 2014
- No. 201 **Tan, A.:** Harnessing the Power of ICT and Innovation Case Study Singapore, March 2014
- No. 202 **Udalov, V.:** Political-Economic Aspects of Renewable Energy: Voting on the Level of Renewable Energy Support, November 2014
- No. 203 **Welfens, P.J.J.:** Overcoming the EU Crisis and Prospects for a Political Union, March 2014
- No. 204 **Welfens, P.J.J.; Irawan, T.:** Trade and Foreign Direct Investment: New Theoretical Approach and Empirical Findings for US Exports and European Exports, November 2014
- No. 205 **Welfens, P.J.J.:** Competition in Telecommunications and Internet Services: Problems with Asymmetric Regulations, December 2014
- No. 206 **Welfens, P.J.J.:** Innovation, Inequality and a Golden Rule for Growth in an Economy with Cobb-Douglas Function and an R&D Sector
- No. 207 **Jens K. Perret.:** Comments on the Impact of Knowledge on Economic Growth across the Regions of the Russian Federation
- No. 208 **Welfens, P.J.J.; Irawan T.:** European Innovations Dynamics and US Economic Impact: Theory and Empirical Analysis, June 2015
- No. 209 **Welfens, P.J.J.:** Transatlantisches Freihandelsabkommen EU-USA: Befunde zu den TTIP-Vorteilen und Anmerkungen zur TTIP-Debatte, Juni 2015
- No. 210 **Welfens, P.J.J.:** Overcoming the Euro Crisis and Prospects for a Political Union, July 2015
- No. 211 **Welfens, P.J.J.:** Schumpeterian Macroeconomic Production Function for Open Economies: A New Endogenous Knowledge and Output Analysis, January 2016
- No. 212 **Jungmittag, A.; Welfens, P.J.J.:** Beyond EU-US Trade Dynamics: TTIP Effects Related to Foreign Direct Investment and Innovation, February 2016
- No. 213 **Welfens, P.J.J.:** Misleading TTIP analysis in the 6th/7th May 2016 issue of DER SPIEGEL, May 2016
- No. 214 **Welfens, P.J.J.:** TTIP-Fehlanalyse im SPIEGEL Heft 6. Mai 2016, Mai 2016
- No. 215 **Welfens, P.J.J.; Irawan, T.; Perret, J.K.:** True Investment-GDP Ratio in a World Economy with Investment in Information & Communication Technology, June 2016



- No. 216 **Welfens, P.J.J.:** EU-Osterweiterung: Anpassungsprozesse, Binnenmarktdynamik und Euro-Perspektiven, August 2016
- No. 217 **Perret, J.K.:** A Spatial Knowledge Production Function Approach for the Regions of the Russian Federation, June 2016
- No. 218 **Korus, A.:** Currency Overvaluation and R&D Spending, September 2016
- No. 219 **Welfens, P.J.J.:** Cameron's Information Disaster in the Referendum of 2016: An Exit from Brexit? September 2016
- No. 220 **Welfens, P.J.J.:** Qualitätswettbewerb, Produktinnovationen und Schumpetersche Prozesse in internationalen Märkten, October 2016
- No. 221 **Jungmittag, A.:** Techno-Globalisierung, October 2016
- No. 222 **Dachs, B.:** Techno-Globalisierung als Motor des Aufholprozesses im österreichischen Innovationssystem, October 2016
- No. 223 **Perret, J.K.:** Strukturwandel in der Europäischen Union am Beispiel ausgewählter Leitmärkte mit besonderem Bezug auf die Innovationstätigkeit der Mitgliedsländer, October 2016
- No. 224 **Irawan, T.; Welfens, P.J.J.:** ICT Dynamics and Regional Trade Bias in Asia: Theory and Empirical Aspects, October 2016
- No. 225 **Korus, A.:** Erneuerbare Energien und Leitmärkte in der EU und Deutschland, October 2016
- No. 226 **Dachs, B.; Budde, B.:** Fallstudie Nachhaltiges Bauen und Lead Markets in Österreich, October 2016
- No. 227 **Welfens, P.J.J.:** eHealth: Grundlagen der Digitalen Gesundheitswirtschaft und Leitmarktperspektiven, October 2016
- No. 228 **Korus, A.:** Innovationsorientierte öffentliche Beschaffung und Leitmärkte: Politische Initiativen in der EU, October 2016
- No. 230 **Nan, Yu:** Innovation of renewable energy generation technologies at a regional level in China: A study based on patent data analysis, December 2016
- No. 231 **Welfens, P.J.J.; Debes, C.:** Globale Nachhaltigkeit 2017: Ergebnisse zum EIIW-vita Nachhaltigkeitsindikator, März 2018
- No. 232 **Welfens, P.J.J.:** Negative Welfare Effects from Enhanced International M&As in the Post-BREXIT-Referendum UK, April 2017
- No. 233 **Udalov, V.; Welfens, P.J.J.:** Digital and Competing Information Sources: Impact on Environmental Concern und Prospects for Cooperation, April 2017

- No. 234 **Welfens, P.J.J.:** The True Cost of BREXIT for the UK: A Research Note, October 2017
- No. 235 **Welfens, P.J.J.; Hanrahan, D.:** BREXIT: Key Analytical Issues and Insights from Revised Economic Forecasts, January 2018
- No. 236 **Welfens, P.J.J.:** Techno-Globalisierung, Leitmärkte und Strukturwandel in wirtschaftspolitischer Sicht, August 2017
- No. 238 **Welfens, P.J.J.:** Foreign Financial Deregulation under Flexible and Fixed Exchange Rates, June 2017
- No. 239 **Welfens, P.J.J.; Kadiric, S.:** Neuere Finanzmarktaspekte von Bankenkrise, QE-Politik und EU-Bankenaufsicht, July 2017
- No. 240 **Welfens, P.J.J.; Hanrahan, D.:** The BREXIT Dynamics: British and EU27 Challenges after the EU Referendum, May 2017
- No. 241 **Welfens, P.J.J.; Baier, F.:** BREXIT and FDI: Key Issues and New Empirical Findings, January 2018
- No. 242 **Welfens, P.J.J.:** International Risk Management in BREXIT and Policy Options, March 2018
- No. 243 **Korus, A.; Celebi, K.:** The Impact of Brexit on the British Pound/Euro Exchange rate The Impact of Brexit on the British Pound/Euro Exchange rate, April 2018
- No. 244 **Welfens, P.J.J.; Yushkova, E.:** IKT-Sektor in China und Wirtschaftsbeziehungen zu Deutschland, April 2018
- No. 245 **Udalov, V.:** Analysis of Individual Renewable Energy Support: An Enhanced Model, June 2018
- No. 246 **Welfens, P.J.J.:** Lack of International Risk Management in BREXIT? July 18 2018
- No. 247 **Xiong, T.; Welfens, P.J.J.:** The Effects of Foreign Direct Investment on Regional Innovation Capacity in China, June 2018
- No. 248 **Welfens, P.J.J.:** New Marshall-Lerner Conditions for an Economy with Outward and Two-Way Foreign Direct Investment, July 2018, Updated February 2019
- No. 249 **Welfens, P.J.J.; Xiong, T.:** BREXIT Perspectives: Financial Market Dynamics, Welfare Aspects and Problems from Slower Growth, September 2018
- No. 250 **Welfens, P.J.J.; Udalov, V.:** International Inequality Dynamics: Issues and Evidence of a Redistribution Kuznets Curve, September 2018
- No. 251 **Kadiric, S.; Korus, A.:** The Effects of Brexit on Corporate Yield Spreads: Evidence from UK and Eurozone Corporate Bond Markets, September 2018

- No. 252 **Welfens, P.J.J.:** Import Tariffs, Foreign Direct Investment and Innovation: A New View on Growth and Protectionism, December 2018
- No. 253 **Welfens, P.J.J.:** Explaining Trumpism as a Structural US Problem: New Insights and Transatlantic Plus Global Economic Perspectives, October 2018
- No. 254 **Baier, F.J.; Welfens, P.J.J.:** The UK's Banking FDI Flows and Total British FDI: A Dynamic BREXIT Analysis, November 2018
- No. 255 **Welfens, P.J.J.; Yu, N.; Hanrahan, D.; Schmuelling, B; Fechtner, H.:** Electrical Bus Mobility in the EU and China: Technological, Ecological and Economic Policy Perspectives, December 2018
- No. 256 **Welfens, P.J.J.; Baier, F.; Kadiric, S.; Korus, A.; Xiong, T.:** EU28 Capital Market Perspectives of a Hard BREXIT: Theory, Empirical Findings and Policy Options, March 2019
- No. 257 **Welfens, P.J.J.:** Council of Economic Advisers: Biased Per Capita Consumption Comparison of the US with Europe, March 2019 (forthcoming)
- No. 258 **Welfens, P.J.J.:** Wirtschaftspolitik-Fehlorientierung des Westens nach 1989: Bankenkrise, Globalisierungs-Ordnungsdefizit und Desintegrationsdruck, April 2019
- No. 259 **Welfens, P.J.J.:** CO2-Steuer, Zertifikate-Handel und Innovationsförderung als Klimapolitik-Instrumente, June 2019
- No. 260 **Welfens, P.J.J.:** BREXIT- Wirtschaftsperspektiven für Deutschland und NRW: Mittel- und langfristige Effekte & Politikoptionen, June 2019
- No. 261 **Baier, F.J.:** Foreign Direct Investment and Tax: OECD Gravity Modelling in a World with International Financial Institutions, August 2019
- No. 262 **Welfens, P.J.J.:** Rationale Klimapolitik für das Erreichen des Ziels Klimaneutralität: NRW-Deutschland-EU-G20Plus, Oktober 2019
- No. 263 **Welfens, P.J.J.:** After Eastern German State Elections 2019: Germany Facing Serious Politico-Economic Problems, September 2019
- No. 264 **Jungmittag, A.; Welfens, Paul J.J.:** EU-US Trade Post-Trump Perspectives: TTIP Aspects Related to Foreign Direct Investment and Innovation, November 2019
- No. 265 **Welfens, P.J.J.:** Financial Markets and Oil Prices in a Schumpeterian Context of CO2-Allowance Markets, December 2019
- No. 266 **Welfens, P.J.J.; Xiong, T.:** US MNCs' Reinvested Earnings and Investment in EU Countries: New Thoughts on Feldstein-Horioka, December 2019, *forthcoming*

- No. 267 **Welfens, P.J.J.; Celebi, K.:** CO2 Allowance Price Dynamics and Stock Markets in EU Countries: Empirical Findings and Global CO2-Perspectives, January 2020
- No. 268 **Celebi, K.:** Quo Vadis, Britain? – Implications of the Brexit Process on the UK’s Real Economy, January 2020
- No. 269 **Welfens, P.J.J.:** The Optimum Import Tariff in the Presence of Outward Foreign Direct Investment, January 2020
- No. 270 **Welfens, P.J.J.:** Macroeconomic Aspects of the Coronavirus Epidemic: Eurozone, EU, US and Chinese Perspectives, March 2020
- No. 271 **Kadicic, S.:** The Determinants of Sovereign Risk Premiums in the UK and the European Government Bond Market: The Impact of Brexit, March 2020
- No. 272 **Welfens, P.J.J.:** Macroeconomic and Health Care Aspects of the Coronavirus Epidemic: EU, US and Global Perspectives, April 2020
- No. 273 **Welfens, P.J.J.:** Corona World Recession and Health System Crisis: Shocks Not Understood So Far, May 2020
- No. 274 **Bretschger, L.; Grieg, E.; Welfens, P.J.J.; Xiong, T.:** Corona Fatality Development, Medical Indicators and the Environment: Empirical Evidence for OECD Countries, June 2020
- No. 275 **Welfens, P.J.J.:** Doubts on the Role of Disturbance Variance in New Keynesian Models and Suggested Refinements, October 2020
- No. 277 **Bretschger, L.; Grieg, E.; Welfens, P.J.J.; Xiong, T.:** COVID-19 Infections and Fatalities Developments: Empirical Evidence for OECD Countries and Newly Industrialized Economies, September 2020
- No. 279 **Welfens, P.J.J.:** Product Innovations, Process Innovations and Foreign Direct Investment: New Theoretical Aspects and Empirical Findings, December 2020
- No. 280 **Zander, T.:** Does corruption matter for FDI flows in the OECD? A gravity analysis, October 2020
- No. 281 **Celebi, K.; Welfens, P.J.J.:** The Economic Impact of Trump: Conclusions from an Impact Evaluation Analysis, October 2020
- No. 283 **Welfens, P.J.J.:** Optimal Inward Foreign Direct Investment Share within an International M&A Setting, November 2020
- No. 285 **Hanrahan, D.:** Tax Challenges of the Digitalized Economy, December 14<sup>th</sup> 2020
- No. 286 **Welfens, P.J.J.:** Corona-Impfpolitik-Perspektiven: Grundlagen, Probleme und Strategieoptionen, December 19<sup>th</sup> 2020 (Vorabversion)

- No. 287 **Welfens, P.J.J.; Wilke, A.:** Urban Wind Energy Production Potential: New Opportunities, December 21<sup>st</sup> 2020
- No. 288 **Welfens, P.J.J.:** The Background of Trumpism and its Main Economic Effects, December 30<sup>th</sup> 2020
- No. 289 **Gries, T.; Welfens, P.J.J.:** Testing as an Approach to Control the Corona Epidemic Dynamics and Avoid Lockdowns, January 11<sup>th</sup> 2021
- No. 290 **Gries, T.; Welfens, P.J.J.:** Testen als Ansatz zur Kontrolle der Corona-Epidemie und zur Vermeidung von Lockdowns, January 11<sup>th</sup> 2021
- No. 291 **Celebi, K.; Welfens, P.J.J.:** The Stock Market, Labor-Income Risk and Unemployment in the US: Empirical Findings and Policy Implications, January 27<sup>th</sup> 2021
- No. 295 **Welfens, P.J.J.:** Nationale und globale Impfstoffbeschaffung in einer Pandemie-Situation: Rationale Patent-Ersatzoption, February 18<sup>th</sup> 2021
- No. 296 **Welfens, P.J.J.:** National and Global Vaccine Procurement in a Pandemic Situation: Rational Patent Replacement Option, April 7<sup>th</sup> 2021
- No. 297 **Welfens, P.J.J.:** Gesundheitsförderung und Klimapolitik: Neue Krankenversicherungs-Perspektiven zu Marktdynamik und Klimafortschritt, March 24<sup>th</sup> 2021
- No. 299 **Dauenhauer, C.; Perret J.K.:** Determinants of Purchasing Behavior – On the Interaction of Price Anchors and the Framing of Price Changes, April 9<sup>th</sup> 2021
- No. 300 **Roeger, W.; Welfens, P.J.J.:** Foreign Direct Investment and Innovations: Transmission Dynamics of Persistent Demand and Technology Shocks in a Macro Model, April 20<sup>th</sup> 2021
- No. 301 **Welfens, P.J.J.; Celebi, K.:** FDI Globalization and the New Phillips Curve: Role of Multinational Companies and Institutional Changes, April 12<sup>th</sup> 2021
- No. 302 **Welfens, P.J.J.:** Neue Ungleichheits- und Modernitätsanalyse: Ökonomische Perspektiven und Soziologie-Fehlsicht, July 9<sup>th</sup> 2021
- No. 303 **Welfens, P.J.J.:** New Inequality and Late Modernity Analysis: Economic Perspectives and Sociological Misperceptions, July 27<sup>th</sup> 2021
- No. 304 **Welfens, P.J.J.:** Nouvelle analyse de l'inégalité et de la modernité tardive : Perspectives économiques et perceptions sociologiques erronées, July 28<sup>th</sup> 2021
- No. 306 **Mueller, M.:** French Presidency of the Council of the European Union in 2022: What to Expect?, September 1<sup>st</sup> 2021

## **Weitere Beiträge von Interesse:**

### **Titels of related interest:**

- Paul J.J. Welfens** (2019), Klimaschutzpolitik - Das Ende der Komfortzone: Neue wirtschaftliche und internationale Perspektiven zur Klimadebatte, Springer Heidelberg
- Paul J.J. Welfens** (2019), The Global Trump - Structural US Populism and Economic Conflicts with Europe and Asia, Palgrave Macmillan London
- Paul J.J. Welfens** (2018), Brexit aus Versehen: Europäische Union zwischen Desintegration und neuer EU, 2.A., Springer Heidelberg
- Paul J.J. Welfens; Samir Kadiric** (2018), Bankenaufsicht, Unkonventionelle Geldpolitik und Bankenregulierung, DeGruyter Oldenbourg
- Paul J.J. Welfens** (2017), An Accidental BREXIT: New EU and Transatlantic Economic Perspectives, Palgrave Macmillan London
- Paul J.J. Welfens** (2017), Macro Innovation Dynamics and the Golden Age, New Insights into Schumpeterian Dynamics, Inequality and Economic Growth, Springer Heidelberg
- Paul J.J. Welfens** (Nov. 2016), Brexit aus Versehen: Europäische Union zwischen Desintegration und neuer EU, Springer Heidelberg
- Paul J.J. Welfens; Jens K. Perret; Tony Irawan; Evgeniya Yushkova** (2015), Towards Global Sustainability, Springer Berlin Heidelberg
- Paul J.J. Welfens; A. Korus; T. Irawan** (2014), Transatlantisches Handels- und Investitionsabkommen: Handels-, Wachstums- und industrielle Beschäftigungsdynamik in Deutschland, den USA und Europa, Lucius & Lucius Stuttgart
- Paul J.J. Welfens** (2013), Grundlagen der Wirtschaftspolitik, 5. Auflage, Springer Berlin Heidelberg
- Paul J.J. Welfens** (2013), Social Security and Economic Globalization, Springer Berlin Heidelberg
- Paul J.J. Welfens** (2012), Clusters in Automotive and Information & Communication Technology, Springer Berlin Heidelberg
- Paul J.J. Welfens** (2011), Innovations in Macroeconomics, 3<sup>rd</sup> revised and enlarged edition, Springer Berlin Heidelberg
- Paul J.J. Welfens** (2011), Zukunftsfähige Wirtschaftspolitik für Deutschland und Europa, Springer Berlin Heidelberg
- Paul J.J. Welfens; Cillian Ryan, eds.** (2011), Financial Market Integration and Growth, Springer Berlin Heidelberg
- Raimund Bleischwitz; Paul J.J. Welfens; Zhong Xiang Zhang** (2011), International Economics of Resource Efficiency, Physica-Verlag Heidelberg
- Paul J.J. Welfens; John T. Addison** (2009), Innovation, Employment and Growth Policy Issues in the EU and the US, Springer Berlin Heidelberg
- Paul J.J. Welfens; Suthiphand Chirathivat; Franz Knipping** (2009), EU – ASEAN, Springer Berlin Heidelberg

**Paul J.J. Welfens; Ellen Walther-Klaus** (2008), Digital Excellence, Springer Berlin Heidelberg

**Huub Meijers; Bernhard Dachs; Paul J.J. Welfens** (2008), Internationalisation of European ICT Activities, Springer Berlin Heidelberg

**Richard Tilly; Paul J.J. Welfens; Michael Heise** (2007), 50 Years of EU Economic Dynamics, Springer Berlin Heidelberg

**Paul J.J. Welfens; Mathias Weske** (2007), Digital Economic Dynamics, Springer Berlin Heidelberg

**Paul J.J. Welfens; Franz Knipping; Suthiphand Chirathivat** (2006), Integration in Asia and Europe, Springer Berlin Heidelberg

**Edward M. Graham; Nina Oding; Paul J.J. Welfens** (2005), Internationalization and Economic Policy Reforms in Transition Countries, Springer Berlin Heidelberg

**Paul J.J. Welfens; Anna Wziatek-Kubiak** (2005), Structural Change and Exchange Rate Dynamics, Springer Berlin Heidelberg

**Paul J.J. Welfens; Peter Zoche; Andre Jungmittag; Bernd Beckert; Martina Joisten** (2005), Internetwirtschaft 2010, Physica-Verlag Heidelberg

**Evgeny Gavrilenkov; Paul J.J. Welfens; Ralf Wiegert** (2004), Economic Opening Up and Growth in Russia, Springer Berlin Heidelberg

**John T. Addison; Paul J.J. Welfens** (2003), Labor Markets and Social Security, Springer Berlin Heidelberg

**Timothy Lane; Nina Oding; Paul J.J. Welfens** (2003), Real and Financial Economic Dynamics in Russia and Eastern Europe, Springer Berlin Heidelberg

**Claude E. Barfield; Günter S. Heiduk; Paul J.J. Welfens** (2003), Internet, Economic Growth and Globalization, Springer Berlin Heidelberg

**Thomas Gries; Andre Jungmittag; Paul J.J. Welfens** (2003), Neue Wachstums- und Innovationspolitik in Deutschland und Europa, Physica-Verlag Heidelberg

**Hermann-Josef Bunte; Paul J.J. Welfens** (2002), Wettbewerbsdynamik und Marktabgrenzung auf Telekommunikationsmärkten, Springer Berlin Heidelberg

**Paul J.J. Welfens; Ralf Wiegert** (2002), Transformationskrise und neue Wirtschaftsreformen in Russland, Physica-Verlag Heidelberg

**Paul J.J. Welfens; Andre Jungmittag** (2002), Internet, Telekomliberalisierung und Wirtschaftswachstum, Springer Berlin Heidelberg

**Paul J.J. Welfens** (2002), Interneteconomics.net, Springer Berlin Heidelberg

**David B. Audretsch; Paul J.J. Welfens** (2002), The New Economy and Economic Growth in Europe and the US, Springer Berlin Heidelberg

**Paul J.J. Welfens** (2001), European Monetary Union and Exchange Rate Dynamics, Springer Berlin Heidelberg

**Paul J.J. Welfens** (2001), Internationalization of the Economy and Environmental Policy Options, Springer Berlin Heidelberg

**Paul J.J. Welfens** (2001), *Stabilizing and Integrating the Balkans*, Springer Berlin Heidelberg

**Richard Tilly; Paul J.J. Welfens** (2000), *Economic Globalization, International Organizations and Crisis Management*, Springer Berlin Heidelberg

**Paul J.J. Welfens; Evgeny Gavrilencov** (2000), *Restructuring, Stabilizing and Modernizing the New Russia*, Springer Berlin Heidelberg

**Paul J.J. Welfens; Klaus Gloede; Hans Gerhard Strohe; Dieter Wagner** (1999), *Systemtransformation in Deutschland und Rußland*, Physica-Verlag Heidelberg

**Paul J.J. Welfens; Cornelius Graack** (1999), *Technologieorientierte Unternehmensgründungen und Mittelstandspolitik in Europa*, Physica-Verlag Heidelberg

**Paul J.J. Welfens; George Yarrow; Ruslan Grinberg; Cornelius Graack** (1999), *Towards Competition in Network Industries*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1999), *Globalization of the Economy, Unemployment and Innovation*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1999), *EU Eastern Enlargement and the Russian Transformation Crisis*, Springer Berlin Heidelberg

**Paul J.J. Welfens; S. Jungbluth; H. Meyer; John T. Addison; David B. Audretsch; Thomas Gries; Hariolf Grupp** (1999), *Globalization, Economic Growth and Innovation Dynamics*, Springer Berlin Heidelberg

**Paul J.J. Welfens; David B. Audretsch; John T. Addison; Hariolf Grupp** (1998), *Technological Competition, Employment and Innovation Policies in OECD Countries*, Springer Berlin Heidelberg

**John T. Addison; Paul J.J. Welfens** (1998), *Labor Markets and Social Security*, Springer Berlin Heidelberg

**Axel Börsch-Supan; Jürgen von Hagen; Paul J.J. Welfens** (1997), *Wirtschaftspolitik und Weltwirtschaft*, Springer Berlin Heidelberg

**Paul J.J. Welfens; George Yarrow** (1997), *Telecommunications and Energy in Systemic Transformation*, Springer Berlin Heidelberg

**Jürgen v. Hagen; Paul J.J. Welfens; Axel Börsch-Supan** (1997), *Springers Handbuch der Volkswirtschaftslehre 2*, Springer Berlin Heidelberg

**Paul J.J. Welfens; Holger C. Wolf** (1997), *Banking, International Capital Flows and Growth in Europe*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1997), *European Monetary Union*, Springer Berlin Heidelberg

**Richard Tilly; Paul J.J. Welfens** (1996), *European Economic Integration as a Challenge to Industry and Government*, Springer Berlin Heidelberg

**Jürgen v. Hagen; Axel Börsch-Supan; Paul J.J. Welfens** (1996), *Springers Handbuch der Volkswirtschaftslehre 1*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1996), *Economic Aspects of German Unification*, Springer Berlin Heidelberg

**Paul J.J. Welfens; Cornelius Graack** (1996), *Telekommunikationswirtschaft*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1996), *European Monetary Integration*, Springer Berlin Heidelberg



**Michael W. Klein; Paul J.J. Welfens** (1992), *Multinationals in the New Europe and Global Trade*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1992), *Economic Aspects of German Unification*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1992), *Market-oriented Systemic Transformations in Eastern Europe*, Springer Berlin Heidelberg

**Paul J.J. Welfens** (1990), *Internationalisierung von Wirtschaft und Wirtschaftspolitik*, Springer Berlin Heidelberg

**Paul J.J. Welfens; Leszek Balcerowicz** (1988), *Innovationsdynamik im Systemvergleich*, Physica-Verlag Heidelberg