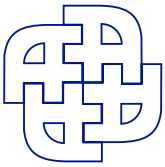
THE EURO IN 2022



IEAF | FEF
INSTITUTO ESPAÑOL DE ANALISTAS FINANCIEROS
FUNDACIÓN DE ESTUDIOS FINANCIEROS

fundación ICO

IEAF | FEF
INSTITUTO ESPAÑOL DE ANALISTAS FINANCIEROS
FUNDACIÓN DE ESTUDIOS FINANCIEROS

fundación ICO

GOOD POLICIES, A GAP YEAR ON REFORMS
A Yearbook on the Euro 2022

Edited by
Fernando Fernández Méndez de Andés
IE Business School

The Yearbook edition closed January 1st, 2022.
Chapter 2 was later updated to include a brief reference to the ECB meeting held on February 3rd, 2022.

ISBN: 978-84-09-37605-6
Legal Deposit: M-2763-2022
Published by: Fundación de Estudios Financieros and Fundación ICO.
Printed by: Reimpventa

CONTENTS

LIST OF CONTRIBUTORS

DIRECTOR

Fernando Fernández Méndez de Andés, PhD in Economics and Professor of Economics and Finance at IE Business School. Member of the Scientific Council of Bruegel. Previously he has served as Board Member of Bankia and Red Eléctrica, Chief Economist at Banco Santander and Senior Economist at the International Monetary Fund.

COLLABORATIONS

María Isabel Cambón, Deputy Director of Macroeconomic Analysis and Financial Stability, CNMV (the Spanish Securities and Exchange Commission). M.A. in Economics and Finance CEMFI-Bank of Spain. Former Senior economist at CNMV and Banco Santander. Publishes regularly in financial markets, instruments, and regulation in professional journals.

Antonio Carrascosa, Director of the EY Chair on Financial Stability, University of Navarra. Previously he has served as Board Member of the Single Resolution Board; and in Spain as Director General of the Banking Restructuring Fund (FROB); Director General of Economic Policy, Ministry of Economy; Director General of Financial Intermediaries of the Securities and Exchange Commission (CNMV).

Grégory Claeys, Senior fellow at Bruegel and an associate professor at the Conservatoire National des Arts et Métiers. Previously, he has been a visiting researcher at the Central Bank of Chile and an economist in the French bank Crédit Agricole. PhD in Economics from the European University Institute.

Alicia Coronil Jónsson, Chief Economist at Singular Bank, Member of the advisory board of Fundación Transforma España. Previously she served Macroeconomic Direc-

tor at Círculo de Empresarios, a leading business roundtable. Associate professor at ESIC university, she holds a Ph. D in R&D Policy, Universidad San Pablo CEU, Madrid.

Maria Demertzis, Deputy Director at Bruegel. PhD in economics the University of Strathclyde. Previously at the Dutch Central Bank, the European Commission and at the Harvard Kennedy School of Government. She is a regular commentator in national and international press, television and radio and has published extensively in international academic journals.

Santiago Fernández de Lis, Head of Regulation at BBVA. He was Head of the Monetary and Financial Division and Director of the International Department of the Banco de España. He was also a partner in Afi and worked in the Bank for International Settlements (BIS). He was Chairman of the Banking Stakeholders Group of the European Banking Authority (EBA).

Jordi Galimany, Research Department at Banco Sabadell, Master in Economics and Finance at Barcelona Graduate School of Economics and assistant lecturer at the University Pompeu Fabra. Economic and financial analysts for Sabadell's strategic and regulatory processes.

Pablo Hernández de Cos, Governor Banco de España and member ECB Governing Council. Chair of the BCBS and Advisory Technical Committee and member of the Steering Committee of the ESRB. Member of FSB, the BIS Group of Governors, the Advisory Board of the FSI and CEMLA. Vice-Chairman Spanish Macroprudential Authority Financial Stability Board (AMCESFI).

Cristina Herrero, President of the Independent Authority for Fiscal Responsibility (AIReF). Treasury Inspector, Previously, she served as Director of the AIReF's Budgetary Analysis Division, Deputy Director General for Budgetary Analysis and Executive Advisor in the General Intervention Board of the State Administration (IGAE).

Reiner Martin, Lead Economist at the Joint Vienna Institute in Vienna, Austria and provides . technical assistance for the Asian Development Bank, the IMF and the World Bank. Previously, he worked at the ECB and the Austrian Central Bank. Ph.D. in Economics, University of Hamburg and MsC in Economics, University of Sussex, and Political Science from Bristol (UK).

Piroska Nagy Mohácsi, Visiting Professor at the Firoz Lalji Global Hub & Institute for Africa (FLIA) at LSE and Partner of Macroeconomic Advisory Group (MAG), New York. Previously she was Interim Director of the LSE Institute for Global Affairs, Director for Policy at the EBRD, and held senior positions in the International Monetary Fund.

Elina Ribakova, Deputy Chief Economist at the Institute of International Finance, where she directs research on emerging markets. She is also Adjunct Senior Fellow at the Center for New American Security. Previously she has worked at Bruegel, Deutsche Bank, and Citigroup, and ythe IMF. She holds a MsC in Economics from the University of Warwick.

Sofía Rodríguez, Chief Economist and Assistant General Manager at Banco Sabadell. Master in Economics and Finance from CEMFI (Center for Monetary and Financial Studies), based in Madrid. Previously she worked at AB Consultants (Madrid) and Harvard Management Company (Boston). Associate Professor Barcelona Graduate School of Economics.

José I. Torreblanca, Political analyst and Senior policy fellow and Head of the Madrid Office at the European Council on Foreign Relations and Professor of Political Science, UNED University. Previously, Lecturer at the George Washington University and a researcher at the European University Institute in Florence.

Jonathan Fortun Vargas, Economist at the Institute of International Finance (IIF). Previously, Jonathan worked at the World Bank and IADB and was a lecturer at Johns Hopkins . He holds an M.A. in international economics and finance from Johns Hopkins University, and M.Sc. in economics/international relations from Kobe University (Japan).

Pawel Zerka, Policy fellow at the European Council on Foreign Relations. PhD in economics and MsC in international relations from the Warsaw School of Economics. Further studies at SciencesPo Bordeaux and Universidad de Buenos Aires.

FOREWORD

Fundación ICO and Fundación de Estudios Financieros jointly decided in 2012 to publish an annual review of the Euro, the Yearbook, with the aim of expanding knowledge and raising awareness of the single currency, and suggesting ideas and proposals for strengthening its acceptance and sustainability.

This partnership translates into the regular production of an annual publication to inform readers of the changes that have taken place in the monetary, banking, fiscal, economic, and political union, highlighting progress, limitations and possible shortcomings.

The report we are presenting now, the ninth in the collection, is titled *Good Policies, a Gap Year on Reforms. A Yearbook on the Euro 2022*. It contains ten chapters, split into three different parts after an introduction on the political landscape; (i) Issues in Monetary Policy; (ii) Issues in Fiscal Policy and (iii) Issues in Regulation.

The political introduction explains the concept of the Strategic Autonomy of the European Union. A new term that defines current policy in Europe because the pandemic has shown the limitations of domestic policies to confront global challenges and provide global public goods. It is, however, a controversial term, because it may be used to advance a federalist agenda and the centralization of policies.

The first section on monetary policy, explains in detail the rationale, content, and most significant changes in the revised ECB strategy that will proof itself in the new uncertain economic outlook. This section then deals with two of the most pressing market concerns: (i) is this time different with inflation? and (ii) does the Union need a Central Bank Digital Currency, a CBDC?

The second section is about fiscal policy and describes in detail anti-pandemic fiscal policy in the Union and the implications for member states. It then contributes to shed some light on the two prevailing fiscal dilemmas facing the Union: (i) should EMU change its fiscal rules? and if yes how (ii) should we still worry about debt sustainability in an era of very low interest rates?

The final section includes a diverse set of topics very relevant to financial markets that have a clear European regulatory dimension: (i) how to deal with non-performing

loans in the aftermath of the pandemic? (ii) what to expect in the regulatory treatment of climate risk and how would it impact required levels of capital and provisions? and (iii) how can capital markets help the consolidation of the euro as an international reserve currency of choice?

The report includes an executive summary that presents a critical analysis of the different contributions and once again postulates ten propositions, called the Ten European Lessons, for completing the Monetary Union. They constitute the main messages of this Euro Yearbook 2022.

We continue to believe that it is necessary to explain Monetary Union and to raise awareness about its implications. The Euro Project is too often taken for granted, but it still needs to be better understood and improved. This is the task assumed in detail throughout this report with the goal of ensuring its sustainability.

The review was led by Fernando Fernández Méndez de Andés, a Professor at IE Business School. He, in turn, has been assisted by a team of experts with close ties to academia, policy making and the financial community. We would like to express our gratitude to each of them and congratulate them on a job well-done.

Fundación de Estudios Financieros and Fundación ICO are confident that the Euro Yearbook 2022 makes an important contribution to the current debate regarding Monetary Union and European integration and will prove useful and interesting to all readers.

Fundación de Estudios Financieros — Fundación ICO

EXECUTIVE SUMMARY GOOD POLICIES. A GAP YEAR ON REFORMS

Fernando Fernández, IE University[1]

1. THE UNION PROVES ITSELF

At the time of preparing this 2022 Yearbook, the nineth edition, I had hoped to be able to report on a booming European economy that had long left Covid behind and was once again confronting the eternal policy dilemmas of completing a monetary union. In the words of one of the most influential and provocative economists of our time, I thought we would again be working "in building a country for the European Central Bank."[2] But despite the remarkable human, political and technological European success in medical research and vaccination, the health situation still conditions the economic outlook, and darkens the social and political climate. Economic recovery has been slower and less intense than anticipated, uncertainty about the consequences of new Covid variants remains pervasive, the damage on our productive capacity appears lasting and costly to repair. And inflation has proven more acute and persistent than purely transitory, and the predominant central banks' view is increasingly questioned. In short, the "new normal" is not here yet, and it looks more challenging than ever.

Nevertheless, there is clear motive for European satisfaction. Because the Union has not only resisted, but it has come out reinforced. It has proven useful. The European Union has evolved with this crisis to become a major political actor across many different policy areas: health, science and research, labor and social security, migration, industrial, competition, financial and prudential regulation, fiscal stabilization, and structural change. The pandemic has made the Union necessary and its policies more

[1] Fernando Fernández Méndez de Andés is professor of Economics and Finance at IE University and Business School, and editor of the Yearbook since the first edition and of the two previous thematic reports on the Euro.

[2] Using a quote from Larry Summers in his speech at the 2018 ECB Conference in Sintra, Portugal.

centralized. It has become obvious that European citizens would be in a much worse shape without it. And with the success comes the problem, the many problems. Every step towards the definition of one European policy in any area, reopens the debate between the federalist and the skeptics, between those politically motivated to create the European ethos and those who are simply driven by results and insist on subsidiarity as a founding block for a Union of sovereign States. Many argue that the Union needs a strategic reinforcement of its powers; others insist on the need to address its democratic deficit and its decision-making process, while a final group highlight its legal foundation as a union of sovereign States. But all three would agree the Union did better this time; this brutal external shock questioned its existence, but the Union lived up to the challenge. And certainly, its leadership, Merkel, Macron and Von der Leyden, passed the exam with honors. Which unfortunately does not mean anything for the future, since the first is gone, the second faces difficult elections in April and the third is waiting for the realignment of the French German consensus.

Unsurprisingly, as the covid crisis has brought about the centralization of policies, the European divide has become deeper and at times more confrontational. But it is a remarkable success that, despite many temptations and some unnecessary tugs of war between national, local, and European authorities, no European member State has fallen to the final populist and nationalistic dream of abandoning the Union or even risking to do so.[3] It may seem naïve to write this while the Union is confronting two member States over the rule of law, but no political analysts is expecting the clash to result in another exit. Because the pandemic has shown that only the bravest and the most resolute could adventure to cope on its own. The European Union has proven itself a collective insurance against the known dangers of nationalism, sectarism and war, and the unknown perils of a pandemic and other potential global black swans.

But the story of the European Monetary Union cannot be equally defined as an indisputable success. In our last Yearbook we commended the Union for its swift and determined policy response to the pandemic, encompassing fiscal, monetary, and regulatory measures. And we asked ourselves of "all policy changes induced by the pandemic, which ones will stick once the crisis abates? Of all emergency programs implemented by the European Union in the crisis year of 2020, which ones will become a lasting part of Union architecture?"[4] The truth is that, in December 2021 we are not any closer to answer these fundamental questions. We have not yet started to respond to the unwelcome consequences of the extraordinary expansionary policies adopted. We have not addressed the drastic increase in public and private debt,[5] and talking of fiscal conso-

[3] With the only exemption of the regional government of Cataluña in Spain, but this is a local matter of no European interest despite our inclination and predisposition to political suicide.

[4] The Euro in 2021, Executive summary, p.13. For a detailed account of the set of measures taken, see Part I *The European Response to the Pandemic*, with three articles on the political, monetary, and fiscal reaction.

[5] Global debt jumped from 227% of global GDP in 2019 to 256% in 2020. Borrowing by governments accounted for slightly more than half of the increase, as the global public debt ratio jumped to a record 99 percent of GDP. Private debt from non-financial corporations and households also reached new highs. The rise in debt in 2020 has already been higher than in 2007-9, during the Great Financial Crisis, and will rise

lidation is still considered premature by many governments,[6] while pressures mount to lengthen the regulatory forbearance that has allowed delinquency rates to remain dormant and zombie firms to survive. The highly expansionary policy stance continues basically unchallenged, despite increasing signs of exhaustion and rising inflationary pressures. And none of the well-known structural flaws in the institutional framework of the European Monetary Union has yet been addressed.

There has been no progress in completing monetary and banking union in any of the four key areas: (i) the European Deposit Insurance System to avoid the bank-sovereign risk doom loop, (ii) risk reduction by limiting the exposure of bank's balance sheets to their home sovereign, (iii) the elimination of the possibilities to evade the European Resolution Mechanism by applying national solvency rules in search of leniency to national creditors and protection for ailing national champions, (iv) or to facilitate cross border mergers and acquisitions in the financial industry. This short list of pending priorities summarizes the academic consensus. Many technical proposals to address these issues have been on the table of policy makers for years, including different nuances to satisfy wide ideological preferences. Many of us hoped last year that the Union would be finally forced to move ahead at least on some of them. But no progress has taken place this year.

The pandemic has understandably monopolized the political debate. And policy makers have been extraordinary creative in coming up with ad-hoc solutions, while ignoring structural and institutional changes. The ECB Pandemic Emergency Purchase Program is a perfect case in point; it has avoided the potential financial fragmentation of the Union with Covid, while leaving intact its long-term internal weakness as a result of the lack of a European wide safe asset. It has left European financial markets at the whim of the ECB. The European Union has been always built-in crises, this is at least the official mantra in Brussels. And this long and severe pandemic crisis may be a wasted opportunity in terms of building a more stable, and therefore more likely permanent, European Monetary Union. This "modus operandi" of emergency temporary programs may be efficient in the short run, but at the cost of increasing conflict, exposing European institutions to political risk and weakening their legitimacy and independence.

The same argument applies to Fiscal Union. After the suspension of State aid rules and of the Stability and Growth Pact's excessive deficit and debt procedures, fiscal policy in the Euro Area became an open bar of free government spending, while the ECB asset purchase programs made sure that sovereign spreads would not diverge. With great success I might add, as markets have become convinced that the Monetary Authority was determined to avoid a repetition of the credit crunch and sovereign debt crisis and would intervene as necessary to neutralize any asymmetric pandemic shock. An asymmetric shock because the diverse economic structures of member States, and because of the different starting points in their fiscal positions and sovereign credit wor-

still higher in 2021. See the IMF blog post by Vitor Gaspar, Paulo Medas, and Roberto Perrelli, (https://blogs.imf.org/2021/12/15/global-debt-reaches-a-record-226-trillion/).

[6] Despite increasingly louder calls from Central Banks for smart fiscal consolidation in the medium term.

thiness. This was the right policy for the Union in an exogenous emergency, more akin to a war than to the Great Financial Crisis of a decade earlier. But its duration is questionable, and more importantly for the Yearbook, it did not advance towards a fiscal union.

Yes, the EU has put in place a historic European fiscal program, the most celebrated Next Generation EU, to facilitate the European public goods of energy transition and digitalization while also addressing some national constraints to potential growth. But so far, it still is a one-time program to address an emergency, not the macro stabilization facility that any Monetary Union needs. And the debate on its nature and extension has just started, with many hopes placed in the position of the new German coalition government. Consequently, the Union still lacks a Euro Area fiscal stance and has not moved towards a new consensus on fiscal rules. Moreover, although NGEU implies issuing large volumes of European debt, it is questionable whether it constitutes the necessary euro-wide safe asset, if only because it may just be a one-off program. Politicians have commended the warm market welcome to this debt instrument. It was placed, and has since traded, at prices between the German and French sovereign bonds. This was to be expected, but the question is whether it will have the volume, liquidity, and range of maturities necessary to become the reference for European financial markets, the safe European asset, the measuring rod. And this cannot happen with a temporary debt program.

Liquidity and regularity of bond issuance are key to the success of a euro safe asset instrument. The need is there and the institutional European battle for being the issuer has started.[7] The European Commission plans to build a full benchmark yield curve by issuing different securities with maturities ranging from three months to thirty years. It has also set a primary dealer network of eligible banks to support those issuances. It plans to foster sustainable finances by issuing a third of its new debt as green bonds, thus building up its leadership in that market segment.[8] But once again this ambitious goal requires a permanent debt program, and not a one-time exemption to its balanced budget legal obligation. And a Treasury, not a task force.

One could therefore argue that while the economic policy response to the pandemic has been adequate and consistent, internationally coordinated, the European Monetary Union has not used the crisis to advance its structural agenda. 2021 has been structurally a gap year, a year when the significant new policies previously adopted were finally implemented, but a year when the Union seems to have focused exclusively in ensuring success in vaccination and economic recovery. An optimist would argue that the Union rightly prioritized cohesion and efficiency over completing the European agenda. And by doing so, it has gained legitimacy and political capital to confront the difficult issues in better economic times. But a pessimist would remind us that the real

[7] Issuers who could qualify for a euro safe asset future in terms of their credit ratings and their bond issuance volumes are the top-rated euro area sovereigns, and European supranational names such as the EIB, ESM, EFSF, and European Commission." *Time for euro safe asset futures?* ESM Blog by Jürgen Klaus, December 12, 2021. https://www.esm.europa.eu/blog/time-euro-safe-asset-futures.

[8] Christie, Claeys and Weil, *Next generation EU Borrowing: a first assessment.* Bruegel Policy Contribution Nº 22/2021, November 2021.

debates have been postponed, precisely because we have not moved any closer towards a new consensus and the two opposite visions of a monetary union remain well stablished in their respective corners, politically and geographically. That the crisis has been wasted for reform.

The 2022 Euro Yearbook reflects this ambiguity. On the one hand it celebrates the unprecedented policy changes introduced. In that sense, the Covid crisis has strengthened the Commission as a leading political agent in Europe and has led to the reassessment of the need for a central government. But on the other hand, the political impasse has continued, with EU policies always dependent on national elections and "the right" composition of member States' governments. Yes, we have seen new policy instruments, but no new institutions, no advances towards anything resembling a government of the Euro Area, nor a Minister of Finance nor an EU Debt secretariat. At the end of 2021 it is still true that the only real Euro Area institution is the ECB. Therefore, the central bank has continued to be at the center of the political debate and has been too often unduly invited to extend its traditional mandate to delivering new European public goods, given the absence of an alternative instrument.

If the work of a Central Bank has never been easy, and its necessary independence from government intervention is not always guaranteed, as the recent cases of Turkey and Mexico blatantly illustrate, the pandemic has only made it more difficult. The monetary transmission mechanism is still impaired by the legacies of the GFC in banks´ solvency and profitability and increasingly threatened by the digitalization of finances and the growing share of new technological providers of financial services. Moreover, the historical increase in the size of central banks' balance sheets after 10 years of quantitative easing and free provision of liquidity, has resulted, among other collateral damages, in the accumulation of a sovereign exposure that undermines its credibility and brings the risk of fiscal dominance to the core of the preoccupations of market participants. And finally, politicians pressed for immediate results have rediscovered "the beauty of money," the extraordinary short run capacity of central banks to deliver credit, and therefore time to weather any storm. But also, their usefulness in steering credit to the desired public goods, like the greening of the economy, the inclusion of the underprivileged or a certain distribution of income. Money has always been a powerful incentive, free money an irresistible temptation. And too many governments, and no less academics, have fallen prey to this modern Ulysses music. The specific institutional architecture of the European Monetary Union has made the ECB the inevitable target.

Most economists would consider the deployment of NGEU and the revision of the monetary strategy of the ECB, the two highlights of European economic policy decisions in 2021. The reader will find many other important policies and all the details in the different chapters of the Yearbook, but unequivocally these are the two defining moments of EMU last year. The Recovery and Resilience Facility (RRF), the cornerstone of NGEU, makes available grants and loans for €723.8 billion to finance plans proposed by member States. In closing 2021, 26 EU member States, all but the Netherlands, had submitted their plans to the Commission. The Council had adopted the recovery and resilience plans of 22. With the first funds disbursed to member States, the focus now

turns to the implementation phase.[9] Much has been written about the NGEU. From the Spanish perspective, it would appear that NGEU is like a miracle. It will provide fiscal stabilization and structural transformation at no cost. It is not a bail out and imposes no limitations, no restrictions to policy makers. Money will flow without conditions and will be put to use immediately, effectively, and productively.

As always, reality is always a bit sourer.[10] And, as time goes by, economic and political analysts start to voice out some concerns. While some question the long delays in disbursing the funds, barely a meagre portion of the initial allocation after more than a year the program was enacted and two since the pandemic hit Europe; others doubt the absorption capacity of member States, their struggle to absorb funds at such scale and speed, and to be able to put them to a productive use. The first group underlines the long lags of fiscal policy. A well-known but often neglected fact in the economic literature, that has limited the role of discretionary fiscal policy for stabilization and insisted on building automatic stabilizers. The second group emphasizes the complexity of the NGEU program design, the result of difficult European compromises, that has delivered arcane rules and procedures for the approval, disbursement and justification of funds, and the inherent legal risks. But also, the poor track record of many member States in spending the structural funds. Some go even further and argue that countries have simply substituted structural for NGEU funds and the net increase in external financing would be minimal. Thus, challenging the marginal additionality of NGEU, a key measure in any structural fund.

Therefore, notwithstanding the general satisfaction with NGEU, economists have begun to reconsider its impact and significance. In the traditional style of this Yearbook, let me summarize my own critical assessment in a few points: (i) NGEU funds come too late, when most European economies are already experiencing high growth, low unemployment, booming private consumption and high inflationary pressures. The Recovery and Resilience Fund (RRF) did not smooth the collapse of output in 2020, nor accelerated the recovery in 2021 when it was most needed. But it may contribute to reignite the very high inflation rates observed at the time the first disbursements are reaching MS, and thus to raise inflationary expectations. (ii) NGEU has proven not to be the macro stabilization facility EMU needs, a point not be minimized when discussing its extension and replacement. (iii) As a structural fund, the RRF lacks "ownership," since it does not necessarily address the main obstacles to potential growth which are specific to every member State. In other words, RRF is relatively unattractive to many net recipient countries as a substitute for the enlargement of existing structural funds.

[9] See COM (2021) 742, Commission Staff Working Document, Analysis of the euro area economy Accompanying the document Recommendation for a Council Recommendation on the economic policy of the euro area, November 24, 2021.

[10] For a good analysis of the risks and opportunities, read the collective report prepared by a group of leading Spanish economists in *Fedea,* unfortunately only in Spanish. *El Plan de Recuperación, Transformación y Resiliencia: un resumen anotado,* https://fedea.net/el-plan-de-recuperacion-transformacion-y-resiliencia-un-resumen-anotado/ Madrid, june 2021.

(iv) At the same time, the lack of explicit ex ante conditionality makes its continuation equally unattractive to many net donor countries. (v) Its large share of grants, highly appreciated in any stabilization facility, is not common in structural funds, which are typically set up as concessional lending facilities to alleviate financial frictions, but also requiring some "skin in the game" by recipients to ensure priorities, and to avoid waste and recurrent public expenditure. Finally (vi) there is a serious chance that the success of the NGEU program, and of the government receiving the funds, will be assessed by the amount of money spent, not by the long-term impact of the projects implemented. The political debate is already focused on the ability to spend fast, faster than any other member State, thus encouraging a ridiculous and counterproductive race to waste.

The macroeconomic impact of NGEU is being revised downwards and pushed back in time by the EU and most member States.[11] Contrary to the expectations of some, funds have rarely been available in 2021, only 7% has been allocated and practically none actually spent, and will be disbursed in 2022 and 2023, and spent mostly from 2023 onwards, since meaningful investment projects typically involve long delays from the time of authorization to execution. The macro impact will be dependent not only on the amounts invested but most crucially on the nature and quality of the investments, and these remain to be seen since the elaboration, governance and content of some national programs have raised many question marks.[12] At the same time, economist are rediscovering the hard facts of the fiscal multiplier of investment infrastructure: that the short term impact on GDP growth and employment is negligible and only becomes positive over the medium and long term.[13] Clearly, NGEU does not qualify as countercyclical stabilization program.

In sum, the European Recovery and Resilience Fund, together with the Sure Program to finance the explosion of unemployment benefits with the pandemic, the Pandemic Crisis Support Line of the European Stability Mechanism to fund the drastic increases in health and pharmaceutical expenditures, and the strengthening of the guarantees program by the European Investment Bank, are all examples of an extraordinary fiscal response of the Union to this pandemic. Extraordinary in speed, amount, cohesion, and unity. But they have been one-time programs, emergency lines for a humanitarian emergency. In closing 2021, It remains to be seen whether they will become structural fiscal policies, part and parcel of the European architecture. For that to happen, they will require many technical improvements and a lot of political will.

[11] See for example the last Press conference of the ECB President after the December meeting of the Board, "Economic activity has been moderating over the final quarter of the year and this slower growth is likely to extend into the early part of next year... Compared with our September staff projections, the outlook has been revised down for 2022 and up for 2023." https://www.ecb.europa.eu/press/pressconf/shared/pdf/ecb.ds211216.en.pdf

[12] See for instance in the Spanish case the *EY Insights Esade, NextGenEU Observatory,* an ongoing online surveillance of the European Recovery and Resilience Fund "to make sure that it becomes a true force for transformation." https://www.esade.edu/ecpol/en/key-topics/nextgeneu-spain-observatory/

[13] Valery A. Ramey NBER WP 27625, The Macroeconomic Consequences of Infrastructure Investment, http://www.nber.org/papers/w27625, July 2020.

In the context of the Covid crisis, many economists have praised the EU for its active fiscal policy. They have highlighted the difference from the austerity that dominated the reaction to the GFC. This is to me a surprising conceptual mistake. Fiscal policy cannot be the same in a humanitarian that in a financial crisis. A humanitarian crisis, like a war conflict, demands immediate expenditure to alleviate the hardship, and requires all policy instruments to be fully deployed. But confidence in the system is not in question. There are no runs on banks nor on sovereigns. And investors are not fleeing to safe heaven, since there are none, except hopefully medical research and massive vaccination. If in any circumstances traditional Keynesian policies are justified is in a humanitarian crisis: But not in a financial crisis when the quality and solvency of the balances sheets of commercial banks, governments and even central banks are at the core of the confidence crisis. Issuing debt to pay for previous debt has a limit, as any basic financial arithmetic would show. Issuing debt to alleviate the damage in a catastrophic event is the only sensible thing to do. To the limit of our credibility, to the combined credibility of the EU. This is what was done, rightly this time, by the European Union.

This clarification is to me an obvious and necessary point. But one that has been obscured by the more technical debate over the appropriate fiscal policy in an environment where the natural rate of interest is estimated to be around zero, in a structural stagnation. Yes, fiscal policy is more effective with negative or zero interest rates, and more necessary also because monetary policy becomes less effective the longer this situation remains. But even in this case, fiscal policy has a limit, the long-term credibility of public accounts. The structural fiscal balance and net position over time, and its sensitivity to different growth and interest rate scenarios, is what we commonly call the fiscal space. And the reason why member States are constantly reminded of the need to build fiscal space, to create cushions in the good times to be able to respond to the bad times on their own, without expecting European fiscal policy to come to the rescue. Because there is not yet a fiscal stabilization facility for the Euro Area, and if and when there is one, it would most certainly be subsidiary to domestic stabilization.

The European Central Bank approved unanimously its new monetary policy strategy in July 2021. The revision was justified in well-known structural trends, (globalization, digitalization, population ageing and climate change), in changes in the structure and functioning of financial systems (notably the rise of non-bank financial intermediaries and the rapid emergence of digital and decentralized finances), in the long period of very low levels of interest rates and the corresponding expansion of monetary instruments that can no longer be considered nonconventional after its continuous use for over 10 years. The new strategy includes two fundamental revisions: a symmetric inflation target of 2%, a de facto increase in the target, and a requirement for especially forceful monetary policy action when the economy is close to the lower bound. The ECB has explicitly enlarged its toolkit to encompass "forward guidance, asset purchases and longer-term refinancing operations, or any other instrument, as appropriate." And states that financial stability is a precondition for price stability. Finally, within its mandate, the ECB recognizes the need to fully incorporate climate considerations into its monetary policy framework.

The symmetric inflation target is the highlight of the revised strategy, in line but not coincident with the average inflation targeting adopted by the Federal Reserve in its review in 2020. It entails allowing for eventual periods of inflation overshooting, as the one we are currently experiencing in the Euro Area, and thus incorporates a more backward-looking view on inflation expectations. The danger of course being, that if and when the ECB finally decides to act to curb inflation, it would be forced to raise rates higher and for longer. But it is also true that intrinsic to the previous strategy was the symmetric problem of raising rates too soon thus damaging a nascent recovery. One cannot but wonder whether the ECB is not willing to err on the side of caution, overreacting to the harsh criticisms received for its actions in the last crisis. Because to me, the real danger of the new strategy is that the risks are not symmetric; the credibility costs to the ECB's inflation credentials are not equally distributed. Acting too soon would reinforce the ECB anti-inflation bias and would help the monetary authority in the future. Acting too late, the prevailing risk with the current strategy, would weaken the reputation and credibility of the central bank precisely at a time when it is of the essence, given the size of its balance sheet, the magnitude of its holdings of sovereign debt and the danger of fiscal dominance. Because the potential impact on public finances of a rate increase is already at the core of the economic debate in Europe. A common problem to any central bank after years of Quantitative Easing, but particularly relevant in the case of the ECB for the lack of a fiscal stabilization facility at the Euro level and of progress in the European Deposit Insurance System, for the real danger of financial fragmentation in the Euro Area.

The revised strategy responds to the new central preoccupation of monetary policy, the fear of entrenched deflation, precisely at a time when the inflationary consequences of the extraordinary monetary and fiscal expansion are becoming evident. In that sense, for instance, El-Erian, a prestigious analyst, relevant investor and former policy maker recently wrote, "the challenge now is to navigate a policy terrain in which communication and implementation have been rendered significantly more complex by a fundamental misreading of inflation as "transitory."[14] And some economists are going much further and questioning whether this new strategy is not fundamentally misguided. Rajan, former Chief economist at the IMF and president of the Central Bank of India, summarized, "Central bankers nowadays are reticent to see inflation as a problem… Clearly, the prolonged period of low inflation after the 2008 global financial crisis has had a lasting impression on central bankers' psyches. The obvious danger now is that they could be fighting the last war."[15] Which amounts to consider the new monetary strategy, common to the Fed and the ECB, not only untimely but wrong, for being backward looking, for falling structurally behind the curve. Ironically, the ECB may have changed its policy framework just as the economic regime itself was changing. An unfortunate parallel to NGEU.

In any case, the fact is that the ECB adopted a new strategy and a more diversified set of policy instruments in 2021. A new framework to confront an economic situation that

[14] Mohamed El-Erian, Project syndicate, December 2, 2021.

[15] Raghuram Rajan Project syndicate, November 21, 2021.

is becoming more complex. After the biggest injection of monetary stimulus in the history of Europe's single currency, the challenge for the ECB is now to confront a not so transitory inflationary surge to levels not seen in over 20 years, while economic activity is clearly decelerating amidst renewed health concerns raised by the highly transmissible Omicron variant and initiate the gradual winding down of asset purchases as announced after its December Governing Council meeting. In short, the ECB appears finally ready to proceed with the normalization of monetary policy, with new thinking and new tools, but in a much more difficult environment than anticipated.

Inflation has proven resilient and reminds us of Mark Twain's celebrated telegram to the New York Journal in 1897, "The report of my death was an exaggeration." The structural deflationary forces in play are showing signs of exhaustion while incoming trends are clearly inflationary: (i) considerable repressed demand due to containment and lockdown measures, (ii) drastic surges in energy and commodity prices, both metals and food, and persistent supply chains disruptions that show the difficulties in adjusting supply and rebuilding the economy after Covid, (iii) near shoring, strategic autonomy and other managed trade policies that limit competition and impair consumer surplus, (iv) the energy transition and the pricing of carbon emissions, including carbon border adjustments, (v) large increases in minimum wages in rigid labor markets that find bad equilibria at high unemployment rates, and (vi) political emphasis on distributional issues and relative wealth considerations. Some of the above trends may prove short-lived, although some others seem more structural. Some may be desirable and others inevitable, their attraction mixed and subject to personal political inclinations. But they tend to shape an inflationary environment where ECB policies will become technically more difficult to formulate, politically more controversial and clearly more crucial to the stability of the Euro Area. Particularly because the institutional and structural changes necessary to complete the European Monetary Union are still missing. The Union has lived through this pandemic under the illusion that with NGEU and the ECB asset purchases, stability and growth were guaranteed. This yearbook has been arguing for 10 years that good economic policy is an enabling condition but not a sufficient one for the permanence of the Union. And we need to argue it once again.

Last year I wrote that "while economic policies are still focused on maintaining or even amplifying the extraordinary fiscal impulse, and central banks insist on extending monetary accommodation for as long as it takes, the policy debate is timidly and gradually shifting towards the difficult questions of how to implement an orderly exit strategy before financial stability is imperiled and inflation moves beyond potential asset bubbles to the goods and services market."[16] It has taken another 12 months for the ECB to initiate a change of policy, the Union is still focused on disbursing NGEU. But it won´t last through 2022. Policymaking is about predicting the future and preventing unwelcome scenarios from materializing. The Union and member States should reassess its fiscal policies and priorities before markets start questioning them, in a very different interest rate and monetary policy scenario.

[16] See The Euro in 2021, Executive Summary, p.19.

2. UNFINISHED BUSINESS IN THE MONETARY UNION

As our readers know, this Yearbook is a collective effort. And I have been fortunate again this year to be able to assemble an impressive number of excellent colleagues, that from their diverse background, perspectives, and positions, give their reading of the state of the Monetary Union and offer their ideas and proposals to improve its functioning. My idea in preparing the Yearbook has always been to escape self-satisfaction, so common in the Union political posturing, and to try to anticipate the difficult debates ahead. To the benefit of the reader, who will then be equipped with a variety of very solid arguments not only to understand but hopefully to participate in that debate. To that effect, this 2022 Yearbook, after an initial chapter describing the political landscape in a Union in search of its place in a new world of more determined and unapologetic economic giants, is organized in the three traditional areas of policy relevant to our view of the Union (monetary, fiscal, and regulatory), but each one of them bringing hard new issues to the table.

Part I on monetary policy, explains in detail the rationale and content, of the revised ECB strategy, and then extends into two of the most pressing market concerns, is this time different with inflation? and does the Union need a Central Bank Digital Currency, a CBDC? The reader will also find in this section significant new topics like why should monetary policy worry about climate change? and what instruments are best suited to that effect? And a rigorous account of what is the Union strategy in response to the rise of digital currencies and assets, stable coins, and decentralized finances, should we regulate them and if yes, how? Part II, describes and assesses anti-pandemic fiscal policy in the Union and the implications for member States. Then it asks whether EMU should change its fiscal rules, and in what direction. A debate of the utmost importance to Spain, but to all other countries as well, because it will impact on the foreseeable trajectory of fiscal balances, and consequently on the medium-term outlook for disposable income, employment, and output. A final chapter discusses whether we should worry about debt levels and fiscal sustainability, which seemed mandatory after the explosion that has taken place with Covid. Finally, Part III includes a diverse set of regulatory topics with a European dimension. What is the Union doing, if anything, to guide member States and financial intermediaries in dealing with nonperforming loans in the aftermath of the pandemic? what to expect in the regulatory treatment of climate risk and how would it impact required levels of capital and provisions? and how can capital markets help the consolidation of the euro as an international reserve currency of choice?

I must confess that I find personally difficult to distinguish this term, and its extensive usage in European policies, from the old mercantilist view that permeates current policies; from the "America first" enunciated by Trump and continued with Biden to the Gaullist "L'Europe, toujours l'Europe" so dear to Macron. But then, I am one of those "most market-oriented and open to trade members that fear its economic protectionist tone." The authors are right in their conclusion, "ultimately, support for European sovereignty may depend on whether the public trusts the EU to make a positive

difference to their lives." And the political climate in Europe is so unstable that success can certainly not be taken for granted.

The term strategic autonomy is indeed defining current policy in Europe because the pandemic has shown the limitations of domestic policies to confront global challenges and provide global public goods, but also because it is very useful to advance a federalist agenda and the centralization of policies. The median reader of this Yearbook will be particularly interested in the economic and technological dimensions of that strategy. In the first case, the authors argue that the EU has a vested interest in sustaining an open and rules-based international trade system. But the concept of economic sovereignty would require balancing defensive tools (i.e., tariffs, competition policies or investment rules) with a positive agenda that would understand and foster its interdependencies with third countries, (i.e., industrial policies, trade diversification, FDI screening). Moreover, Europeans would need to prepare for emerging geo-economic threats (CDBC for example) that may rewrite the international rules.

In the technological arena, the challenge for the EU is twofold, (i) to create a market base and a meaningful industrial capacity, (one of the structural foundations of NGEU) necessary to be a global player, and (ii) to maintain its regulatory authority given the size of the internal market, the so called "Brussels effect." But the current discussion on a crucial issue for the future of the technology, i.e., data protection standards, is an example of the difficulties that lie ahead, not only because of the strength of old protectionist attitudes, but also of overconfidence. In any case, it seems difficult to envisage that without sufficient weight at the scientific, technological, and manufacturing frontier, the EU could aspire to remain the standard setter.

Incidentally, the same arguments apply to Europe's current leadership in the fight against climate change and its political priority to decarbonize the economy. Without due consideration for its implications on third countries, without global financial policies to support it, and without those policies being funded extensively by the EU, it is hard to imagine that the energy transition could become a source of enhanced Europe' soft power. And it may result in EU's increasing isolation, as the costs of sustained high energy and food prices extend economic hardships and social problems way out and beyond EU borders.

2.1. MONETARY POLICY, NEW STRATEGY AND OLD PROBLEMS WHILE BECOMING DIGITAL

Part one of the Yearbook includes a detailed analysis of the revised monetary strategy of the ECB, a discussion on inflation and a study of the state of play of the launching of the digital euro. In chapter 2, Pablo Hernández de Cos, governor of Banco de España, writes on *The European Central Bank's new monetary policy strategy*. The TFEU stablishes the ECB primary objective of maintaining price stability in the euro area but leaves to its discretion the exact definition of "price stability," the operational target,[17] and how

[17] Interesting to note that this chapter considers relevant to explain why a positive inflation target at

it is to be achieved, both of which define the "monetary policy strategy." Since 2003, the year the last strategy was approved, globalization, digitalization, ageing population, climate change and innovations in the financial system have posed new challenges for monetary policy. The governor starts reviewing them but focus specifically on two issues he finds particularly relevant, the fall in the equilibrium real interest rates[18] and, as a result, the limitations imposed by the lower bound on interest rates. The fall in the natural interest rate means that, to stabilize inflation, real interest rates and, therefore, nominal interest rates need to be lower now. This would not be problematic if there were no lower bound if nominal rates could be as negative as necessary without limit.[19] But they can't, and that introduces an asymmetry into the conduct of monetary policy.

To overcome this asymmetry, in 2014 the ECB, as most major central banks before, introduced a set of "non-standard monetary policy measures: negative deposit rates, the asset purchase program (APP), targeted longer-term refinancing operations (TLTROs) and forward guidance on the future path of interest rates. These instruments aim to minimize the lower bound problem by acting on the medium and long parts of the yield curve or, in the case of TLTROs, by directly incentivizing the supply of bank lending to the real economy. "These non-standard instruments have been effective in easing financing conditions and supporting euro area inflation, economic growth and employment. However, despite their expansionary effects, they have not prevented inflation from remaining persistently below the ECB's aim for most of the last decade." These instruments have become standard components of the monetary policy tool kit.

This chapter summarizes ECB's revised strategy in two fundamental innovations: (i) a new symmetric medium-term inflation target of 2%.[20] Symmetric in the sense that positive and negative deviations of inflation from the target are equally undesirable; (ii) a requirement for especially forceful or persistent monetary policy action when the economy is close to the lower bound, to avoid negative deviations from the inflation

all. And the author offers three separate reasons; (i) a positive target reduces the probability that nominal interest rates will become constrained by their lower bound as a result of a disinflationary shock; (ii) the HICP inflation may be subject to a positive bias when measuring the real increase in the cost of the consumption basket (e.g. owing to improvements in product quality), which implies that a zero HICP target would entail a de facto fall in prices; and (iii) it leaves room for possible differences between the inflation rates of the different countries.

[18] The "equilibrium interest rate, often called the natural rate, is defined as the real interest rate that maintains output at its potential level and inflation stable at its target level. This natural interest rate evolves dynamically depending on both the structural and cyclical situation of the economy. For a discussion on the assumption and implications of the use of this concept, see The Euro in 2021, Executive Summary.

[19] The level of this lower bound is not directly observable and varies over time according to the financial sector's situation. In any event, it represents a floor for central bank interest rate.

[20] The HICP, harmonized index of consumer prices, remains the most appropriate indicator to measure this inflation target. The index has proved to be timely, reliable (i.e., infrequent revisions), credible and comparable over time and across countries. However, the ECB recommends the incorporation of owner-occupied housing costs in the HICP. A process that could take years due to the need to separate the consumption and investment components in housing prices, where only the former is the relevant for monetary policy.

target becoming entrenched. This may imply a transitory period of overshooting, in which inflation is moderately above target. The new strategy also incorporates a revised forward guidance, "the Governing Council expects the key ECB interest rates to remain at their present or lower levels until we see inflation reaching 2% well ahead of the end of our projection horizon and durably for the rest of the projection horizon, and we judge that realised progress in underlying inflation is sufficiently advanced to be consistent with inflation stabilising at 2% over the medium term."

Thus, the new strategy opens a new era in monetary policy: (i) it is conceived to avoid deflation as if it were a structural phenomenon, and in that sense "it buys" the structural stagnation hypothesis, and (ii) it provides for a more adaptative and less proactive monetary policy, and in that sense, it has been criticized, as already noted, for being "backward looking." The recent surge of inflation and particularly its persistence, will be the litmus test of the new strategy, a reality check of its usefulness that comes much earlier than anticipated.

The new strategy reformulates the analytical framework of the ECB and abandons the famous two pillars (the shorter term economic, and the longer-term monetary analysis). The pervasive role of macro-financial linkages in current economic, monetary, and financial developments requires that monetary policy decisions be now taken based on an integrated framework that brings together the economic and the monetary and financial analysis, with the latter focusing on the information needed to assess the monetary policy transmission mechanism. The communication of monetary decisions plays an important role in the new strategy with a view to reach new and wider targets, beyond monetary policy experts and market practitioners.[21]

Climate change is an integral part of the new strategy. This chapter presents a detailed analysis of the rationale for the ECB embracing this territory, in anticipation of any other major central bank in the world. Specifically, Hernández de Cos argues that climate change may affect price stability through at least five channels. First, it might impair the transmission of central bank monetary policy measures to the financing conditions of households and firms. Second, it could further reduce the natural interest rate. Third, both climate change events and policies can have a direct impact on inflation dynamics. Fourth, climate risks may complicate the correct identification of the shocks relevant for the medium-term inflation outlook. And fifth, uncertainty about the magnitude of the effects of climate change and the horizon over which they will play out in the economy may compound the foregoing effects.

The ECB intends to move fast from theoretical analysis to climate polices in four fundamental areas: (i) monetary policy assessments and macroeconomic modelling, (ii) statistical framework, by developing new experimental indicators, covering exposures to climate-related risks, (iii) the introduction of disclosure requirements for private sector assets, either as a new eligibility criterion or as the basis for differenti-

[21] I cannot help but repeat the state of interest rates expectations at the end of 2021, "it remains unclear to what extent markets have internalised the condition that inflation must reach the target well ahead of the end of our projection horizon and durably for the rest of the projection horizon."

ated treatment for collateral purposes and asset purchases, and (iv) the assessment of the climate-related risks in the Eurosystem's balance sheet. In fact, climate stress tests of the Eurosystem balance sheet will be conducted from 2022 onwards based on the methodology of the ECB's ongoing economy-wide climate stress test. In addition, the ECB will incorporate climate-related criteria into its corporate sector purchase program.

Since each one of these actions is controversial, let me complement this official ECB view with some market perspective, so that the informed readers may arrive at their own conclusions. First, the ECB positions itself as the first and most aggressive central bank in adopting climate related monetary and regulatory policies. The impact of such a decision on the structure, profitability and eventually solvency of the European financial system may not be trivial. Second, the ambiguous rationale of adopting policy measures while at the same time still working, analytically and empirically, in designing methodologies, metrics and indicators. And the sequencing is at least counterintuitive if not directly wrong. Third, there is a potential for policy reversals as the distortions created in the relative prices of the different assets become untenable, especially if and when the climate targeting of asset purchase policies is also applied to sovereign bonds. Indeed, the fact that the ECB delays the implementation of climate policies to government paper is a clear example of the uncertainties of its potential impact. And fourth, the credibility and independence of the ECB could be damaged as the central bank becomes an instrument for economic and social policies.

This chapter concludes with an assessment of how the new strategic framework has responded to recent economic developments, and most notably to the rapid increase in inflation. The concrete monetary decision taken at the two last ECB meetings are described in the text and merit no further comment here but to try inferring some lessons for the monetary union. First, the Governing Council reckons that growth and inflation projections and subject to considerable uncertainties, but while growth risk are balanced inflation risks have recently tilted to the upside. Second, the program to maintain abundant liquidity in the financial sector, i.e., the special conditions applicable under the third series of TLTROs, is expected to end in June 2022, despite market anxiety about potential cliff edge effects. Perhaps a reflection that the era of unlimited free financing has come to an end. Third, governors see more than ever the need to maintain flexibility and optionality in the conduct of monetary policy. Flexibility with asset purchases beyond the phasing out of the PEPP means that future purchases under standard programmes could indeed overcome the "capital key" rule, if necessary to avoid financial fragmentation.[22] And fourth, optionality means that the Governing Council stands ready to adjust all of its instruments of monetary policy as appropriate to ensure that inflation stabilises at its 2% target over the medium term. And the Governor

[22] "According to this analysis, flexibility in PEPP purchases made it possible to significantly increase the programme's impact on sovereign yields in the euro area, especially in countries with higher risk premiums."

concludes, that the well-known ECB forward guidance "establishes a state-contingent plan that will determine when the ECB will start tightening its monetary policy."

In chapter 3, Sofía Rodríguez Rico, and Jordi Galimany Valldosera, from Banco Sabadell, write *Is this time different? Inflation and monetary policy in the new post-Covid environment.* They review traditional indicators of the price pressures during 2021, a rapid and intense phenomenon that clearly exceeded expectations and explain the possible contribution of the different factors. They conclude with an assessment of the implications for the conduct of monetary policy in the Euro Area and in the exit strategy for unwinding its overgrown balance sheet. Their description of inflation in the Euro Area is rather conventional, mostly explained by energy components and "no undesirable dynamics were observed in core inflation, inflation expectations nor salaries." Their account of the factors behind the surprising surge includes the usual suspects: base effects and measurement problems, pent-up demand and accumulated savings, labor shortages in specific sectors (some of them possibly caused by the fiscal stimulus implemented that has discouraged labor supply and created incentives for early retirements), the energy shock and the recurrent episodes of increased price volatility.

The article also offers an interesting analysis of other underlying trends having a significant but less unidirectional impact on future inflation. (i) The energy transition that will not only put upward pressures on the price of commodities, particularly in some metals (lithium, cobalt, nickel, and copper) and staples, where about 50% of the final price is energy related but underlines that carbon-pricing mechanism and border adjustment taxes are inflationary in nature. (ii) The digitalization process that impacts inflation through many different channels, the decrease in manufacturing prices of goods and the relative increase in the demand for goods versus services, the reinforced competition and price transparency but also the increase in pricing power of the "winner takes all" logic intrinsic to the digital business models, and the effect on labor productivity. (iii) The role of China and its economic, demographic and energy transition that is structurally transforming the country in an inflation exporter, particularly if it meets its decarbonization pledges. (iv) The reconfiguration of the global supply chains and the industrial relocation policies, that may be politically accelerated but so far have had minimum impact. And finally, (iv) demographics, where the authors concur with those economists that find that "a high dependency ratio is associated with greater inflationary pressures" and believe that the positive anti-inflationary shock experienced in the last 30 years may be starting to reverse upwards, especially if considering the negative impact on productivity.

Turning to the impact of the new inflationary environment on monetary policy, the chapter focus on the modified forward guidance adopted with the new monetary strategy of the ECB. It emphasizes the three conditions that an eventual rate increase must meet (see above). It then highlights the complementary nature of monetary and macroprudential policies, and enumerates a number of risks for the ECB consideration: (i) the global nature of financial stability which precludes acting unilaterally, (ii) the existing vulnerabilities in global markets (valuation problems in certain assets, liquidity and depth problems in certain markets, increased risk taking by nonbank financial sector, etc.), and (iii) the tightening shift experienced by global markets in

2021 when most emerging economies have already raised rates and some advanced ones are following suit, and the possibility of delinking the Euro Area from these global trends.

In terms of credit policy, the difficulty for the ECB lies in the timing of the withdrawal of the extraordinary liquidity measures for banks and the importance of avoiding cliff edge risks with TLTROs. And it emphasizes important macroprudential aspects that need to be considered to ensure that ECB deleveraging does not result in a repetition of the credit crunch, like the exact definition of the assets used to meet increasing regulatory liquidity ratios, the structural shortage of risk-free euro area assets and the wholesale financial markets dependance on collateral. A concern of the financial industry that was evident with the occasion of the 2013 Bernanke taper tantrum. And finally, the chapter argues the need to maintain the cooperation between fiscal and monetary policies in this changing growth and inflation environment and underplays the risk of fiscal dominance. It calls for a continuation of EU and national fiscal stimuli and for new counter cyclical fiscal rules that reinforce the stabilization nature of fiscal policies and give it a more prominent role. A consensus European view that somewhat contrasts with the one I discussed earlier in this summary.

The growth of digital money has been a key development in 2021. Although its volume has not yet reached systemic proportions, its growth rate is impressive and certainly, digital money has crossed the line to become an asset class of its own in need of regulation.[23] There are three competing and complementary narratives that explain this development and help account for its popularity. For some, digital money means freedom, freedom from the monopoly of governments and central banks. In that sense technology has made possible the old dream of competing private monies.[24] For others, digital money means stable prices, since the supply of money is technically, algorithmically, limited by design. In this sense digital money will be the realization of the pure monetarist dream, a return to the gold standard.[25] And finally, for the pragmatic investor it is simply the result of long for longer interest rates, a byproduct of speculation and the search for yield. In this sense, it has replaced junk bonds in investors' portfolio. In a scenario of increasing rates, its attractiveness, and price, will decline.[26]

[23] See IMF Blog December 9, 2021, Global Crypto Regulation Should be Comprehensive, Consistent, and Coordinated.

by Tobias Adrian, Dong He, and Aditya Narain, https://blogs.imf.org/2021/12/09/global-crypto-regulation-should-be-comprehensive-consistent-and-coordinated/

[24] Supporters of this argument tend to forget that private monies failed in the past, basically, because they could not provide neither price nor financial stability. See Gary B. Gorton and Jeffery Y. Zhang, *Taming Wildcat Stable coins*, September 30, 2021.

[25] Again, these advocates tend to forget that the gold standard was almost universally abandoned because it led to structural deflation. Not to mention that the technological faith in an unchangeable algorithm, absolutely and eternally free from manipulation, seems to me an illusion.

[26] The calls for caution about digital money by financial regulators is an indication of possible gross overvaluations, even a potential Ponzi scheme, a collateral damage of the excess liquidity, and risk for financial stability.

The digitalization of finance is a complex phenomenon that includes many different topics of interest; from the digitalization of banking and the emergence of new digital providers of financial services to the decentralization of finances and the challenges to the existence of centralized registers, exchanges, clearing houses and even central banks; from the blooming market of crypto assets after the "success" of bitcoin, to stable coins and central bank digital currencies. We do not pretend here to offer a comprehensive analysis of digital finances, but rather to limit our perspective to what is most relevant for monetary and financial policy in the Euro Area. And that is, undoubtedly, the possibility of the ECB issuing a digital euro in the near future. So, we asked Santiago Fernández de Lis, from BBVA, to write chapter 4 which has the provocative title of *Digital euro: a hammer in search of a nail?* The title, a proposition in itself,[27] summarizes the main message of the author, that he cautiously leaves unwritten, there are too many questions to be answered before the digital euro is a welcome reality.

The idea of central banks issuing some form of digital cash has only recently become a real possibility. The topic was discussed and abandoned years ago because of the problems related to anonymity and disruption of financial intermediation. Until the threat of a powerful BigTech (Facebook, now Metaverso) issuing a stable coin changed the debate. The Covid-19 crisis has accelerated the substitution of cash and convinced many central banks they should offer an electronic means of payment to avoid being entirely dependent on private monopolistic providers (Visa and Mastercard). Considerations about the strategic autonomy of Europe also carry some surprising weight in the debate within the Union. The case of China is very different and quite unique and has more to do with a payment system dominated by the big techs as fears mount about emerging risks in the "shadow" financial system.

The optimal design of a digital euro will be determined by the problem to be addressed. Because CBDCs have been simultaneously argued to cure too many problems: (i) the disappearance of cash, (ii) fostering financial inclusion, (iii) increasing the efficiency of retail payment systems, (iv) improving monetary policy, (v) protecting central bank money from private monies or foreign CBDCs, and (vi) finally, avoiding banking crisis. Thus, this chapter presents a comprehensive analysis of the consequences of each of these goals in the adequate design of the digital euro. I will not attempt to summarize it here, but rather present some of the main conclusions.

The Eurozone witnesses a decrease in the use of cash as a means of payment and an increase in its use as a store of value, with both trends probably accelerating during the pandemic. Exactly the opposite of what the ideal digital euro should accomplish and raises the worrisome possibility that "the digital euro tends to replace deposits rather than cash." Additionally, while the secular reduction in the number of bank branches may leave some vulnerable social groups unattended, it is unlikely that access to financial services could be enhanced with a digital euro in the Eurozone, where "digital exclusion may be a much more worrying problem than financial exclusion." Moreover,

[27] It evokes a speech by Christopher Waller, Governor of the Federal Reserve, called, *CBDC: A Solution in Search of a Problem?* delivered at the American Enterprise Institute, Washington DC, August 5, 2021.

inefficiencies in the retail payment system do not arise in domestic but cross-border payments. But CBDCs are not designed for cross-border use, where the potential distortions are pervasive: non-residents could use them as a store of value, as they do today with the US dollar or euro notes, weakening the control of money supply, creating unwelcome movements in the real exchange rate and negative externalities, especially in countries with a high degree of dollarization and weak institutions. In a certain sense, all CBDC jurisdictions could become highly volatile emerging economies at the whim of digital investors. True, CBDCs would help CB overcome the zero lower bound and thus facilitate monetary policy in a deflation, but highly negative rates in digital cash holdings may be considered a tax on money, a form of financial repression that would undermine the legitimacy and independence of CBs.

Finally, there is the defensive argument for CBDCs, since private digital monies create considerable problems depending on their characteristics. For instance, Bitcoin-type crypto assets' volatility is more likely to create financial stability problems but less frictions related to monetary policy or seigniorage income. Stable coins, on the contrary, are more likely to create monetary policy or seigniorage-related problems. And foreign CBDCs may create the three types of problems. This chapter argues strongly that the solution to these challenges lies more in an intelligent regulation of private digital monies than in issuing CBDCs. A conclusion shared by international regulators like the IMF or BIS.[28]

The publication of the digital euro report in October 2020 triggered a debate on the legal basis for its issuance, since article 128 of the TFEU only refers to banknotes and coins. A particularly complex topic in the Euro Area because of the political complications of any legislative change. As published, the digital euro would be designed to be a means of payment, and not a store of value. Several options are under consideration to reduce the substitutability between the digital euro and deposits, in particular caps and incentives in terms of remuneration. Caps are the most obvious mechanism, with holdings limited to normal transaction needs (€3,000 has been mentioned). As regards remuneration, the ECB seems inclined to a two-tier structure, in which an initial amount below a certain threshold may enjoy market remuneration and excess holdings would be penalized with a lower rate. Additionally, everything seems to indicate that the digital euro will be designed in a way that avoids anonymity, or more likely that strong privacy protection rules will be applied only below certain thresholds. At the same time, traceability will ensure that transactions could be investigated if legally called for.

In conclusion, arguments in favor of the digital euro have gained traction with the financial crisis, this pandemic and late developments in the digital ecosystem. But risks should not be minimized and depend crucially on the modalities of implementation. The ECB pragmatic position appears to limit these risks, to the extent that the digital euro is not aimed at replacing deposits or disrupting financial intermediation, but it will be based on a public-private partnership. Banks and other financial intermediaries will

[28] See the foreword by Cartens in BIS Quarterly Review, December 2021, and the article *DeFi risks and the decentralisation illusion,* by Sirio Aramonte, Wenqian Huang, and Andreas Schrimpf.

maintain the relation with customers and offer value-added services like onboarding and custody. Nevertheless, considerable risks remain and the ECB, "will need to reach a very delicate balance: designing a digital euro that is attractive enough to (partially) replace cash but not so much as to replace deposits. To address this problem, limits on digital euro holdings are preferable to a tiered structure of remuneration." Because the digital euro would stress the fact that central bank money is the only safe asset, undermining confidence in the safeness of deposits and potentially accelerating bank runs in crisis. Limits on holdings would act as a circuit breaker, but authorities would need to show great determination to resist political pressures to increase or eliminate such limits. CBDCs may also undermine central bank independence since the more functions a central bank has, the less clear its mission is, and the more complicated its accountability, thus undermining its independence.

2.2. RETHINKING THE ROLE OF FISCAL POLICY IN A MONETARY UNION

Part III of the Yearbook analyses the extraordinary fiscal effort set in motion by the EA in response to Covid, but also its costs in terms of increased debt and vulnerability to interest rates. We anticipate the debate on fiscal rules because it is time to look at the future of public finances. And we close the section with an analysis of the sustainability of public debt. In chapter 5, *Fiscal Policy in The EU After Covid: New Challenges and Opportunities,* Cristina Herrero, president of AIREF, the independent fiscal authority of Spain, describes the recovery plans implemented by the EU to cushion the economic and social consequences of the pandemic and assesses the extraordinary fiscal challenges facing the Euro Area. Namely, how to retire the emergency measures designing a more targeted response to support an inclusive recovery while ensuring sustainable public debt levels and rebuilding buffers to allow for macro stabilization policies.

This fiscal response illustrated the effectiveness of fiscal policies to mitigate severe shocks. But the effort has been extraordinary. The EA deficit is expected to reach 7,1% in 2021 and government debt has risen to unprecedented levels, close to 100% of GDP in 2021. And heterogeneity across countries widened, renewing the fiscal divide. It is true that this time debt reduction faces three favorable tailwinds: growth has resumed rapidly despite remaining uncertainties, interest rates would remain very low, even allowing for some modest increase over the planning horizon, and NGEU investments and reforms provide an extraordinary opportunity to tackle pending structural bottlenecks. Nevertheless, challenges ahead are significant, and using Spain as an example, the persistence of a positive differential of real growth over interest rates will not by itself bring the debt ratio down. Indeed, debt levels will remain at high levels, close to 115% in the coming decades if additional consolidation measures are not adopted, 190% GDP in 2050 accounting for population ageing.[29]

[29] If the structural primary deficit were to remain at the level projected for 2024 - 2.5% of GDP in the case of Spain - and assuming average nominal growth of 3.3% and implicit interest rates even lower

National fiscal policy responses to the pandemic reveal a high degree of heterogeneity across countries, that can be explained by differences in (i) the economic impact of the pandemic, (ii) the size of automatic multipliers, and (iii) the national composition of the measures. Some countries responded with direct tax and public expenditure measures (with a direct impact on budget deficits) while others used extra-budgetary mechanisms, such as public guarantees or recapitalisations, which would only have a long-term impact on deficits if and when they materialize. Using their own indicator of the fiscal impulse[30] the article underlines the importance of ex ante fiscal space. Countries with better fiscal track record and credibility were able to inject money directly. Countries with historically poor fiscal balances could only afford guarantees. The consequence, in my own words, is very significative. Countries lacking fiscal credibility are more vulnerable to the uncertainties affecting future growth and interest rates. And are dependent on the EU willingness to maintain their implicit bailout, should the guarantees needed to be activated. A fact that may explain the intense debate over fiscal rules and the macro stabilization facility.

In the aftermath of Covid, fiscal consolidation is thus a must and will take place in a more pressing macro scenario than anticipated. Successful consolidation episodes have been infrequent in recent economic history. In Europe the recent cases of Ireland and Belgium stand out. But they teach some clear lessons. First, economic growth is a necessary condition. Second, measures should be implemented both on expenditure and income. On the former, an in-depth review of the quality of public spending to maintain the most productive spending, not to be confused with preserving all spending accounted as investment. On the latter, a comprehensive tax review with potential growth as the overriding concern, including a thorough evaluation of tax expenditures and adopting less-distorting taxes. And third, consolidation can be much less costly if accompanied by appropriate productivity-boosting and potential growth-enhancing policies (i.e., pension and labour market reforms). NGEU offers a historic opportunity not to be wasted for a successful stabilization, but it will need to be carefully monitored and evaluated.

The reform of European fiscal framework is a necessary element to ensure sustainability. Its problems are well known: (i) unnecessary complexity of rules and procedures; (ii) inability to prevent procyclical fiscal policies; (iii) excessive short-term focus of fiscal guidance and surveillance; and (iv) lack of political ownership. The Commission relaunched the public debate on the review of EU economic governance in October 2021. Given the different positions among member States, a profound legislative change

than the minimum recorded in 2021, the positive contribution of the interest- growth differential to the reduction in the debt ratio (58 cumulative points in 2050) would not be sufficient to offset the structural primary deficit (80 cumulative points in 2050). Pension expenditure associated with the demographic transition could increase the debt ratio by 54 points over the next 30 years if no measures are taken to address it, which would bring debt levels close to 190% of GDP.

[30] The ratio of the change of primary budget balances to the change in GDP-growth observed from 2019 to 2020.

seems unlikely, but significant reform may still be viable. Although its content remains controversial, and no consensus has been reached. This chapter shows a preference for a simpler framework in the form of (i) a commitment to a medium-term debt anchor, (ii) an expenditure rule as the intermediate instrument and (iii) a single escape clause. The debt target could be established with a common methodology at national level, with country specific factors determining both the target and the pace of adjustment. Expenditure multi-year commitments for the legislature could be the operational rule since they can be observed and monitored directly. This strategy needs to be based on more robust Medium Term Budgetary Framework (MTBF), assessed, and informed by independent fiscal institutions.

The reform of the fiscal framework is the specific purpose of chapter 6 written by Grégory Claeys and Maria Demertzis, at Bruegel, with the title, *A return to what fiscal rules?* They argue the need to rebuild the fiscal consensus after the suspension of the rules during the pandemic and advocate for a more active fiscal policy, one that would include an additional objective, "to influence the composition of fiscal policies in EU countries." A very strong statement which they justify in the large investments needed for the green and digital transitions, but also in the recent academic debate about "good debt" and the renewed attractiveness of the old "golden rule."

Their position in favour of a much more active fiscal policy can be summarized in three main arguments. First, deflation and the structurally low natural rate of interest makes monetary policy less effective but strengthens the impact of fiscal stimuli and requires both policies to coordinate, contrary to traditional theories stressing their offsetting nature. Second, the strong procyclicality observed by fiscal policy in the Eurozone is due not only to the existing rules but also to real politics. And third, the insufficient levels of investments in the EA, very low compared to other developed economies, especially after the GFC. Typically, fiscal consolidation results in contractions in public investment, a contraction that is much larger than the fall in public consumption. An unequivocal fact but I might argue that it is related more to financial restrictions and politics than to fiscal rules, since it is common to any adjustment program in the world and not just in the EU. And it can be described very differently, governments opt for protecting the safety net in a crisis at the cost of some deterioration in the productive capacity. In any case, it is difficult to understand why fiscal rules should decree on this matter. And the EU would be wrong to assume that historically expansionary monetary policies will be indefinite, and therefore incorporated in the fiscal rule. It would amount to assume that money is not a scarce resource anymore, and liquidity no longer impacts on prices.

The authors argue different ways for the European fiscal framework to influence the composition of member States fiscal policies. In particular, how to adjust the framework to induce member States to invest massively in the ecological transition. And they favour a green golden rule that excludes net green investment from the EU fiscal deficit indicators. Mindful of the opportunities for manipulation and accounting creativity, the authors put forward some ad hoc limitations to a green rule (i) a maximum amount of green investment exempted per country, related to the

"green investment gap" determined each year as part of the European Semester; (ii) clear accounting rules following the EU taxonomy for sustainable finance approved in July 2020. It is easy to see how these potential constraints would only create conflict and discretion. Finally, the authors propose to make NGEU a permanent structural investment-focused fund, financed by debt, which will make it irrelevant as a macro stabilization facility.

Having EMU fiscal rules deciding the composition of national fiscal policies, mandating, prohibiting, or incentivizing certain expenditures for member States, is a regime change. Not only a very controversial point, but a step too far towards an unnecessary centralized fiscal union. And clearly questionable under the current legal framework. I am also a bit puzzled about their insistence in fiscal rules ensuring there is enough money for the provision of certain "higher quality" public goods. My objections are manifold: (i) rules are designed for ordinary times; extraordinary circumstances require exemptions to the rule, escape clauses for black swans. Exactly what the EU rightly did during the Covid pandemic when it suspended fiscal rules and the ECB implemented PEPP; (ii) digitalization and decarbonization are welcome, but I can think of many other public goods as pressing and desired (i.e., the end of poverty, the reduction of income disparities by country, gender, etc. the north-south per capita income gap) that do not have financing guaranteed, as they should not. Rules should not advance concrete policies, but simply ensure that the politically defined priorities do not compromise fiscal sustainability, (iii) prioritizing certain types of expenditures in fiscal rules will only lead to lack of transparency, political conflict, accounting discretion and ad hoc definitions (of "green investment," "social needs," "growth enhancing reforms," etc). This fact led to the abandonment of the golden rule. And finally (iv) a practical objection, most balance of payments and debt crisis start with the best of intentions, as fiscal soundness is abandoned to finance dire social needs. The GFC should have taught us that the European Area is not immune to this "emerging markets sin."

This chapter concludes with a list of guiding principles for the reform of the fiscal framework. The new rules should: (i) be simple, easy to understand and monitor by all stakeholders; (ii) move away from unobservable variables, in particular the structural deficit or the output gap; (iii) focus on large, sustained, potentially dangerous deviations; (iv) remain country-specific as relates to the medium-term targets, while the long-term target, the 60% of GDP limit for the public debt ratio, could remain universal as it is stipulated by the TFEU; (v) take a medium-term perspective, (vi) make escape clauses automatic under pre-agreed circumstances: (vii) take the monetary policy situation into consideration; and finally (viii) not be symmetric nor designed to prevent fiscal surpluses. This list is similar to the presented in the previous chapter except for the interplay between fiscal and monetary policy and is a good summary of the existing technical consensus on the principles to guide the reform. The problems arise, as always, when agreeing on the specific implementation of these principles.

The fiscal part ends with Alicia Coronil Jónsson, from Singular Bank, writing *Sovereign debt in EMU, should we worry?* Chapter 7 presents relevant quantitative information

on the effects of the crisis. In sum, since March 2020, governments have adopted fiscal stimuli worth 16 trillion dollars (approximately 19% of world GDP in 2020) and the main central banks have recorded an aggregate increase of US$7.5 trillion in their balance sheets. This extraordinary fiscal response has led to a serious deterioration of fiscal positions and debt sustainability, starting from already very high levels after the financial crisis. According to the latest data from the Institute of International Finance, at the end of the second quarter of 2021, total global debt amounted to 353% of world GDP, approximately 34% higher than its pre-COVID-19 level.

This unprecedented fiscal expansion would not have been possible without the decisive action of the ECB. Namely, the approval of the Pandemic Emergency Purchase Program (PEPP) in March 2020, which would amount to €1.85 trillion by the time of its withdrawal in 2022. The ECB has been vital in keeping financing costs for sovereigns at very low levels and to avoid credit tensions in the weakest member States. ECB's bond purchases between 2020 and 2021 have practically covered in full the net issuance of government debt.[31]

The mounting inflationary pressures in the world economy in 2021 have impacted sovereign debt markets in Europe and the United States, which have experienced high returns in profitability since the beginning of the year, especially for longer maturities. The rise in inflation expectations in the latter months of the year and the shift to less accommodative policies by major central banks, have raised yields again. The transition away from very low interest rates poses new questions for the budgetary outlook and fiscal consolidation of Euro Area member States. The enormous heterogeneity among EU member States may add new elements of discrepancy to the debate on the reform of the rules for budgetary discipline.

This chapter reinforces the idea that the sustainability of the fiscal and debt positions is strongly contingent on growth and interest rates scenarios and demographic trends, all of them mutually inter-related. An OECD analysis indicates that the current design of pension systems could increase fiscal pressures by nearly 8% of GDP on average between 2021 and 2060. At the same time, a permanent 1% increase in global interest rates would add between 1% to 1.5% of GDP to fiscal pressure in countries with the highest net debt position. The author considers that the pandemic could be a catalyst to rethink the design of the Welfare State and adapt it to the new circumstances and summarizes, with Spain in mind, the necessary changes in the following priorities: (i) from an employment point of view, it would be necessary to add greater elements of flexibility to the labor market, improve the effectiveness of active employment policies and focus in the quality of the educational system; and (ii) pensions must adapt to the new demographic reality through the extension of working life beyond current retirement ages and a new financing model that includes private capitalization.

[31] For instance, the monetary authority has acquired 100% of the net debt issued by Belgium in 2021, 99% by France, 93% by Spain, and 86% by Italy.

2.3. ISSUES IN REGULATION, FROM LEGACIES OF THE CRISIS TO NEW CHALLENGES

Part III of the Yearbook look specifically at new developments in the regulation of financial markets, in which the Union acts as a catalyst and a standard setter. But European regulation must be assessed in an international context. This section stars with a chapter on the legacies of the GFC on bank's balance sheets and brings forward the lessons learnt to manage their potential deterioration once the extraordinary regulatory forbearance is lifted. Next is a chapter on the regulatory implications of fighting climate change, what can banks expect from regulators in the field of climate risk? And ends with a chapter asking if there is anything monetary authorities can do to increase the attractiveness of the euro as reserve currency of choice.

In chapter 8, Reiner Martin, Piroska Nagy-Mohacsi, Elina Ribakova and Jonathan M. Fortun Vargas from the International Institute of Finance and LSE, write on *Non-Performing Loans: from "Tsunami" to Optimism and then "Wave?" - Dealing with NPLs in COVID times*. With Covid, fears of rapidly worsening bank asset quality were widespread in board rooms and central banks. But the "NPL tsunami" has not materialized; the unstoppable wave of nonperforming loans in corporates and households most exposed to confinement measures and voluntary demand restrain, and the subsequent credit crunch, did not happen. Thanks to expeditious monetary and fiscal policies, focused on sustaining incomes and preserving jobs and companies. But they would not have been enough without complementary regulatory action. A distinctive element of anti-cyclical policies this time was the effective inclusion of financial macro and micro prudential policies. Policies explicitly geared towards easing bank capacity to lend and protecting bank asset quality. With the banking and sovereign debt crisis still fresh on policymakers and investors, the well-functioning of the banking system was rightly considered crucial.

By the time of the pandemic, the EA had advanced in resolving legacy problems from the GFC. The overall NPL ratio that peaked in 2014 at over 8% had declined to 3.6% in 2019, although in some EA countries NPL ratios remained substantially higher. Differences were also large in the duration and structure of NPLs among member States, in the split between households, mortgages and to less extent consumption, and corporates. Already in 2013, European authorities, started their efforts in harmonization, with a view to guide banks in their approach to NPLs and to avoid unwelcome national advantages. These efforts culminated into the "EU Council Action Plan on NPLs" (July 2017), covering a wide range of policy recommendations on supervisory tools, macroprudential approaches, secondary NPL markets and targeted structural reforms. By late 2019, the implementation of the EU Action Plan was well advanced, except for actions related to benchmarking and improving insolvency frameworks.

As soon as the pandemic was identified, the authorities took rapid measures to ensure that the banking sector would not be hit by a wave of NPLs. Macroprudential authorities focused on measures to support banks' capital and liquidity, ensure adequate provisioning, as well as changes to implementation schedules and reporting requirements. A unique feature of fiscal support in the EU has been the heavy reliance on government

guarantees, often aimed at small and medium-size enterprises (SMEs), including micro businesses and the self-employed. In addition, member States used debt moratoria on loan repayments to provide financial relief to borrowers. Use of guarantees and moratoria, and eligibility criteria for both, varied greatly among countries. As a result of these measures, and in a sharp distinction with the previous GFC, European economies have witnessed a continued decline in overall NPL levels. And banks already in 2021 begun to release NPL provisions made at the onset of the pandemic, to the concern of supervisory authorities. Meanwhile, total Stage 2 loans, underperforming loans with increased credit risk relative to origination but not yet "non-performing," have increased.

As support policies begin to be withdrawn, considerable damages in the real economy are likely to emerge, and creditors will show difficulties in meeting their payment obligations. The authors discuss several signs of the incomimg deterioration in NPLs: (i) the level of "Stage 2" loans has actually increased during the pandemic, and appears to be stabilizing at a level almost 2 pp higher than at the beginning of 2020, (ii) NPL stocks are expected to increase as insolvency moratoria, employment protection schemes, overall fiscal stimulus and central bank liquidity support unwind, (iii) more than half of European banks' credit exposure is to sectors that were particularly hard-hit by the pandemic, and finally (iv) initial conditions matter. Countries with worse starting levels of debt and NPLs, higher economic reliance on sectors most affected by COVID, and higher government guarantees will face particular challenges. Furthermore, the authors see other risk for bank's balance sheets that need to be managed appropriately: (i) Soaring asset prices, including housing prices, which can put pressure on prices of collaterals. (ii) Increased private sector indebtedness,[32] (iii) and increased risk of "zombification" of firms. (iv) the protracted supply side constraints which may result in sustained inflationary pressures, and (v) premature stimulus withdrawal.

The adequate approach to NPL resolution is the final topic of this chapter. The use of large-scale public support during the acute phase of the crisis raises the question whether the resolution of future NPLs is also likely to benefit from enhanced public support. This question is particularly relevant for two well-established resolution approaches for distressed assets, namely securitization and Asset Management Companies (AMCs), often referred to as "bad banks." The restrictive European approach towards public assistance of NPL resolution, limited by strict state aid rules, stands in contrast to practices in other parts of the world, notably Asia, where public AMCs operate in many countries on a permanent basis.

Publicly supported and appropriately structured securitization schemes for NPLs can change the risk-return profile on secondary NPL markets and increase the confidence of potential investors. The scheme does not require any upfront investment by the government, although the public guarantee is a contingent fiscal liability, a fiscal risk. Notwithstanding the progress made with the Italian and Greek NPL securitization programs, the European Commission still requests such schemes to be designed in a

[32] Since the start of the crisis, household debt in OECD countries has jumped by about 4 percentage points of GDP, and corporate debt by 7 percentage points of GDP.

way that they are free of state aid. A provision that "has a limiting impact on the usability of NPL securitization schemes."

Turning to systemic (banking-sector wide) AMCs, experience suggests that successful AMCs focus on particular asset classes, that the transfer price is based on realistic asset valuations, that their governance structure is well-designed and that they operate in a sound macroeconomic and financial environment. In the EU, government-sponsored, systemic AMCs operate within the EU legal framework governing state aid to the financial sector, and no such vehicle has been set up since 2013. This is partly due to the downward trend in NPLs until Covid, but it also shows that state aid requirements remain a substantial hurdle. The EBA first launched the idea of a pan-European AMC in 2017, but it was abandoned for operational and political concerns. The authors argue that the prospect of a sizeable, Covid-induced increase in NPLs could lead to the reconsideration of that decision.

This chapter concludes with a list of recommendations to manage the expected increase in NPLS in the EU. (i) Policy makers must recognize that asset deterioration will be predominantly the result of exogenous shocks to the financial sector; (ii) At this point, it appears that the probability of NPLs becoming a major systemic risk in the near future is not too high. However, this is policy dependent. There are non-negligible risks of policy mistakes; (iii) Speed is of the essence. In case of a rapid emergence of NPLs, any call on already existing government guarantees should be accepted and honored through a fast-track process; (iv) Facilitating secondary NPL markets is of paramount importance, (v) The EU regulatory framework, an in particular state aid restrictions should be revised with a view of making AMCs again a feasible option for high-NPL EU countries. And the idea of funding such vehicles at the European level should be revisited.

In chapter 9 Antonio Carrascosa, ex member of the European Resolution Board currently at Universidad de Navarra, writes on *Financial tools to tackle the climate transition*. The effects of climate-related risks on the financial system are subject to wide uncertainty, but nevertheless conventional wisdom call for urgent action;[33] the risks of inaction appear to be, by definition, far greater. The Task Force on Climate-related Financial Disclosures, TCFD (2017), defined two large categories of climate-related risks: transition and physical. The former includes policy, legal, technology, market, and reputational risks. The latter, acute risks (event-driven) and chronic risks. TCFD 2015, already assessed the different elements involved in the disclosure of climate risks: governance, strategy, risk management, metrics, and targets. Two key issues demand an international agreement: the granular data requirements for banks and counterparts, and the specific risk metrics to be used in the assessment.

In March 2018 the Commission launched the Action Plan on Sustainable Finance with three main goals: (i) redirect capital flows to sustainable investments; (ii) manage climate and social risks; and (iii) promote transparency in green finance. In practice, the Plan aimed at developing an EU taxonomy on green finances, an EU Green Bond

[33] "The short-term costs of adapting to green policies are far lower than the possibly much higher costs arising from natural disasters in the medium and long term" best describes the new political consensus.

Standard, methodologies for EU climate benchmarks, and guidance for corporate disclosure of climate-related information.

The EU Taxonomy Regulation includes definitions of environmental objectives: (mitigation, adaptation, sustainable use of water and marine resources, circular economy, pollution prevention and management; and biodiversity). An activity is defined as "environmentally sustainable" if it makes "a substantial contribution to one or more of the mentioned environmental objectives, without significantly harming any of the other." But once again, passing general criteria in Europe is much less controversial than its implementation, as the ongoing dispute over the classification of gas and nuclear energy demonstrates. Moreover, the EU taxonomy does not address verification, leaving room for discretionality and green marketing. The taxonomy is binary, activities are either taxonomy compliant or not, which could deter polluting firms from investing to improve performance, a necessary realistic component of fighting climate change. Nevertheless, EU Technical Expert Group on Sustainable Finance (2020) insisted that "incremental improvements can be positive and may be captured in other sustainability reporting requirements, but they are not considered aligned for the taxonomy."

The EU is a global leader in the growing market of green bonds, with 51% of global issuance in 2020 from EU companies and public institutions, and 49% of global green bonds denominated in euros. Nevertheless, it is a very small market, and green bond issuance in the EU still only represents 2.6% of total EU bond issuance. Perhaps because of the lack of internationally agreed standards for labelling green. The Commission proposed on July 2021 a Regulation to create a voluntary standard, based on the EU taxonomy. European green bonds would be checked by an external reviewer, registered with ESMA, and follow market best practices on transparency. But the EU Standard does not aim at regulating relevant financial details of these bonds: (i) green bonds are usually backed by the issuer's entire balance sheet, so that the returns do not depend on intended green investments, but on the overall performance of the issuer; (ii) not meeting the stated green objectives will not constitute an event of default that could trigger early repayment. Commitment to investing in green assets would thus remain a matter of good faith, not a contractual obligation, just a reputational issue that may impact future green issuances.

But perhaps the most controversial aspect in financial green policies has to do with its expected use in prudential banking regulation. This chapter argues that the regulators appear to have taken a prudent path, including: (i) Pillar 3 (transparency), asking banks to explain their risks and policies; (ii) Pillar 2, banks assessing themselves on the risk guidance issued by the SSM and the supervisor later deciding whether to apply surcharges; and (iii) possible changes to Pillar 1 requirements, only after the work being carried out by supervisors and regulators is completed. But on October 2021, the Commission proposed a review of EU banking rules including (i) clear requirements to identify, measure, manage and monitor sustainability risks in the general risk management framework; (ii) widening the scope of climate disclosures to all institutions, not only large banks, (iii) empowering supervisory authorities to incorporate these risks in

the Supervisory Review and Evaluation Process and in stress testing; and (iv) requiring institutions to have robust governance arrangements at senior management levels.

European financial institutions are concerned that: (i) being publicly assessed at the same time the supervisor acknowledges it is only learning to define and measure climate risk, may add to market confusion, unfairness and substantial compliance costs to rapidly changing criteria; (ii) providing untested climate related information to the market will only lead to green washing, unfair marketing competition and possible national forbearance, and (iii) taking unilateral action by EU supervisors and regulators will undermine the competitiveness of the European banking industry, already damaged by negative interest rates, over regulated compensation policies and the proliferation of public or other non- for-profit banks not subject to market discipline.

In any case, this chapter discusses some climate-related prudential regulatory possibilities. First, to penalize "brown" credit exposures to reduce their supply of credit and resulting in an increase in the cost of provisions and the weighted average cost of capital for banks. But it does not guarantee the reduction of brown activities.[34] Second, the introduction of a supporting factor for green activities (lower risk weighting). But this lower cost of financing would not be automatically transferred to the green borrower, nor the desired increase in green activities is guaranteed. Third, other green regulatory measures under consideration include the establishment of metrics to monitor "sustainable bank activities," i.e., the ratio of green assets, or public guidance on executive compensation linked to sustainability. And finally, climate stress tests that assess the resilience of banks to different climate scenarios, but they also consider the impact of expected policies, such as carbon taxes or border adjustment mechanism. The ECB's stress test in 2022 will assess banks' own exposure to these risks and their willingness to take action. And banks are rightly concerned that these exercises, although theoretically only a learning process, if made public they will likely have immediate market consequences and may eventually lead to additional regulatory requirements based on uncertain future states.

A discussion on the greening of monetary policies by the ECB closes this chapter. After arguing that this objective is compatible with the ECB current mandate, it reckons that it can nevertheless pose a direct threat to ECB´s balance sheet. Particularly if "neutrality" is defined, as interpreted by some members of the Governing Council, to favor green issuers in the ECB's purchase of securities. A similar debate is open with the collateral acceptance policy. And, as argued before, the reluctance to extend these active green purchase policies to sovereign issuers is the best example of their potential consequences. But the debate continues at the ECB, and it can only gain traction with the new German government.

Chapter 10, and last, deals with capital markets and the euro. Mª Isabel Cambón, from the CNMV, the Spanish securities regulator, writes *The International Role of The*

[34] Although it could also be argued that if these exposures are not penalized, banks would be exposed to more environmental risks in the long run. The ECB has estimated that losses related to the most polluting companies could reach 10% of bank balance sheets in the event of a credit rating downgrade associated with a higher carbon price resulting from compliance with the Paris agreements.

Euro: A Financial Markets Perspective. The chapter stars reviewing the literature about the conditions to become a reserve currency. The economic and monetary jurisdiction should be relatively large, with solid and stable institutions, deep and liquid financial markets, including the existence of a safe asset, a solid banking system and, finally, the backing of a strong central bank. This chapter focuses on weaknesses related to the European financial markets that make them less deep and liquid than other reference markets, and therefore currently preventing a bigger role for the euro.

The euro appeared to be consolidating a relevant international role in the years following its launching, but the GFC and the European sovereign debt crisis interrupted this trend. And the euro remained a distant second. As a safe store of value, around a fifth of all foreign-exchange reserves owned by central banks is denominated in euros and a similar proportion of cross-border loans and bonds. The dollar share is about 60%. The relevance of the euro as a means of payments, it use in transactions, is much closer to that of the dollar (near 40%). This reflects the fact that the European Union is the biggest trader of goods and services, although most commodities are traded in dollars. The volume of Euro Area sovereign debt combined is still smaller than that of the US market.

This chapter offers information on the structure and evolution of financial markets in the Euro area. I will not attempt to summarize it. Suffice to know that the EA still lags well behind other advanced economies, in terms of size but also depth and liquidity, of financial markets, partially reflecting the fact that bank-based finance is still more relevant in the EU than market-based finance. European stock market stays at about 50% of national GDP whereas in the US it is 2.5 times GDP. There are also significant differences in debt markets. The outstanding amount of public debt was 98% of GDP in 2020 in the EA, while the US Treasury market was 134% of GDP. Given the sovereign credit risk heterogeneity across the EA, the quantity of safe assets is much lower (above 30% considering supranational issuance). Corporate debt markets represents less than 15% of GDP in the euro area and near 35% of GDP in the US. The case of green finance, as we have just described, is the exception, with a leading role for the euro area.

The European economy has historically been defined by the high level of "bankarization," a predominance of banks to the detriment of other sources of financing in most continental European economies. In recent years, a much more balanced composition of the financial system has been taking shape. Perhaps, because the stabilizing nature of financing markets has been very relevant in the worst moments of the banking credit crunch between 2012 and 2014. The relatively small size of European companies partially explains the predominance of banking finance. But the necessary increase in size is hindered by certain regulatory thresholds and the service specialization of many member States´ economies. The scarcity of safe assets in the Europe is the other main element restraining the international role of the euro. However, this may be changing with SURE and NGEU, which could expand the pool of highly rated bonds to about 40% of GDP and favor the process to establish a common European safe asset and foster the international role of the euro. They will significantly increase the supply of

low-risk euro denominated assets, but these programs are also designed to increase the resilience of the EA to global shocks, enhancing the attractiveness of the euro for international investors. But the volumes of these programs are still relatively small, and so far, temporary.

In December 2018 the European Commission published the communication Towards a stronger international role of the euro, that focused on completing the Banking Union and the Capital Markets Union. But it also called for additional measures in finance, like: (i) the clearing obligation of derivative contracts, (ii) reliable interest rate benchmarks, (iii) an integrated instant payment system in the EU, and (iv) to the possibility of an enhanced role of the euro in foreign exchange markets. In January 2021, the EC presented a new strategy for sustainable growth. One of the three pillars of this strategy aims to promote a stronger international role of the euro, and the Capital Markets Union (CMU) is a key element of the strategy. To that effect, the EC committed to 16 new actions. Of those actions, the author considers two that are key in the process. The first is related to the need of diminishing the costs and/or impediments for cross-border capital flows. Costs that explain, for instance, the difficulties to achieve a fully effective EU passport in the asset management sector, despite ESMA continued efforts. The second is the need to simplify and lower the costs to participate in financial markets for companies, and related with it, the need to increase companies' size.

To foster the attractiveness of the Euro financial Area it is equally important to achieve a greater homogeneity of requirements and of supervisory approaches. Some alternative markets recently developed are good examples of successful mechanisms, suitable for companies and attractive for investors. Other alternatives to traditional capital markets should be enhanced; in particular, venture capital companies and crowdfunding platforms. However, the possibility of some institutional investors, such as pension funds, investing in venture capital is limited by regulation. In the case of crowdfunding, the EU market is underdeveloped because the lack of common rules and diverging licensing requirements. As a result, platforms have been small and operating on local markets. Additionally, the potential introduction of the digital euro could favor its international role, only if it is used in cross borders payments. But fostering the euro as reserve currency "should not be the motivation for issuing a digital euro," especially given the questions raised in chapter 4 for cross border CBDCs.

Finally, this chapter mentions two more qualitative elements in the consolidation of an international reserve currency that policy makers should not ignore nor minimize. One, the need to develop a more explicit and permanent risk sharing mechanism that would reinforce confidence in the euro and help mitigate asymmetric shocks. The second, not quantifiable elements related to the difficulties to change historical inertias and to the perception of the euro and of the European Union. Any credible policy for the consolidation of the euro thus, must be persistent and sustained, and accompanied by decisive measures to complete the monetary, banking, and fiscal union.

3. THE TEN EUROPEAN LESSONS FOR 2022

As it is customary, the Yearbook concludes drawing ten lessons for the European Monetary Union. Glancing through the conclusions of the previous editions would leave the reader with a very European sense of mixed satisfaction and disappointment. Satisfaction for the many achievements that have undoubtedly made the Union more robust and resilient to economic cycles, namely the advances in banking union. But disappointment for the many structural flaws remaining in the institutional architecture, namely in fiscal union; flaws that make Monetary Union still dependent on market benevolence. 2021 was a year when the Union got its policy mix about right in the most severe crisis imaginable, a remarkable accomplishment in very difficult circumstances, but also a year when the Union failed to move forward a better institutional design, a gap year in structural reform. With this mixed feeling, let me conclude with my personal ten lessons of the year.

First, the Union has once again shown its extraordinary flexibility to respond to new situations with new programs, initiatives, and policies. This yearbook has typically been critical of policy makers, a healthy skepticism, but I feel the need this time to pay tribute to one departing leader, Chancellor Merkel. She has shown a remarkable European commitment and has moved Germany to understand its role and assume its responsibilities as the leader of the Union. Unfortunately, the capacity to adopt the right policies has come *pari passu* with its structural inability to confront institutional changes. Nine years later, the Monetary Union is nowhere nearer a Treaty change that this Yearbook has consistently argued for.

Second, "the times they are a-changin," but this time is not different. Inflation is not dead, and the Union should not act as if it were. As if for some magical mystery, call it structural stagnation or new monetary theory, fiscal and monetary expansion can be indefinite and have no impact on prices of goods and assets. Nor assume that debt may not be repaid. The euro will not be a stable and attractive currency if markets have the perception that the Union lives in a different world, a world where globalization and digitalization are so powerful forces that will always offset any inflationary pressures. A world where the pursuit of "high quality" public goods makes the independence of central banks questionable and fiscal dominance a plausible scenario.

Third, the new monetary strategy of the European Central Bank is a welcome initiative to increase its toolkit with "new instruments" like negative interest rates, quantitative easing, and forward guidance. And to upgrade the relevance of financial stability considerations in the reaction function of the ECB, to include full allotment of liquidity and other macroprudential tools. But the long-term consequences are unchartered territory and there is a non-trivial risk of consolidating a backward-looking bias into monetary policy. A jump into the unknown that requires careful and accountable surveillance and monitoring in its implementation. Policy makers should not use the new monetary strategy as an excuse for not advancing in completing banking union with the European Deposit Insurance System, solving well known problems with the Resolution Mechanism, and removing obstacles to pan European retail banks.

Fourth, the digitalization of money is a reality, and the European Monetary Union cannot afford to lag behind. But the Union should not fall prey to technological infatuation and believe that the new digital world will free money and banking from its fundamentals. Private monies and the gold standard have existed before and were abandoned for good reasons; the role of the banking system as provider of liquidity and credit is a major development that needs to be preserved if and when the ECB decides to introduce a CBDC. Financial innovation in the payment system (money) and in ways to store value (assets) should be fostered by promoting a fair and equal playing field among the different providers of the same service, traditional financial institutions, and new technological competitors.

Fifth, NGEU has been an adequate economic response to Covid. But its tardy implementation is a very good example of the lack of a necessary fiscal policy for the Euro Area. And NGEU is not the necessary macro stabilization facility EMU needs. Not only because it is a one-off program, but the whole instrument was conceived more akin to a structural fund. While the issuance of NGEU debt is a welcome addition to the pool of European assets, it is not the euro safe asset needed. A macro stabilization facility must be centralized, quick in design and disbursement and linked to asymmetric shocks to member States' economies, to GDP and employment shocks. Thus, it requires a new institutional setting, a Ministry of Finance for the Euro Area with Treasury functions, a fundamental rethinking of the fiscal architecture of the Union.

Sixth, a fiscal stabilization facility needs to be accompanied with clear fiscal rules to prevent the free riding problem and build trust among member States of the Union. The rules need to be simple, transparent, applicable without room for political discretion and enforceable by European authorities. The rules should encourage the creation of buffers to allow for macro stabilization over the cycle. Fiscal rules require some necessary transfer of sovereignty to European authorities, to the Council for democratic legitimacy and accountability. There is wide technical agreement that a simple nominal expenditure rule versus GDP growth and weighted in its application by public debt to GDP ratios is the preferred option.

Seventh, this pandemic has left significant lasting scars in the economic and social fabric of the Union. Public indebtedness has increased about 20 percentage points of GDP, up from an already very high level after the euro debt crisis. There is an urgent need to adopt smart medium term consolidation plans, particularly in member States with higher debt ratios. Failure to do so will lead to additional vulnerabilities as the ECB starts its exit strategy and phases out its asset purchase programs. And it could lead to new episodes of lack of confidence in some member States and additional financial fragmentation in the EA. Monetization of the debt through higher inflation or selective restructuring mechanisms will only lead to reduce confidence in the euro and the European project.

Eighth, extraordinary regulatory and prudential policies of postponements and forbearance have been instrumental in avoiding a new credit crunch and authorities should be commended for them. But these measures cannot be extended endlessly. And they

do not make the risks disappear nor prevent the losses from ultimately emerge. Dormant fragilities in the balance sheets of financial intermediaries will need to be accounted for and managed. They could be large in some sectors, countries, and individual institutions although they do not appear to be systemic under current circumstances. But they will require decisive action to ensure they do not become entrenched and create a new sense of crisis. Some policies have proven useful in dealing with previous episodes of rising nonperforming loans, namely dedicated stress debt funds, securitization, and asset management companies. The authorities will need to abandon populism and embrace them promptly and decisively. These measures will most likely require public money and Europe may have a problem with the current state aid rules.

Nineth, green finances are still at an infant stage, but European authorities seem determined to advance them rapidly and forcefully. A word of caution is thus necessary because the risk of repeating market anxiety and turmoil is not trivial, as Europe has experienced with energy markets this year. A global threat requires global solutions; otherwise, policies create competitive disadvantages for local players. The implementation of green monetary and regulatory policies should pause until we have a much better understanding and transparency of the different definitions, methodologies, and implications of alternative scenarios. Financial institutions cannot be expected to cover a taxpayer's cost. The independence of the European Central Bank should not be compromised.

And tenth, the international role of the euro was pushed back by the Great Financial Crisis that evidenced internal fractures. The process has been slowly reverting to normal speed in late years. It is consistent with promoting the strategic autonomy of the European Union and could be enhanced with adequate public financial policies. Most of these policies have to do with completing the banking and capital markets union and harmonizing regulator's approaches and methodologies. Some others, rooted in history and politics, are beyond the scope of our analysis. The digitalization of European finances could help the international role of the euro, but the link is not sufficiently powerful nor free of risks to expedite issuing CBDC. Their proponents should search for a better narrative.

Madrid, December 2021

REFERENCES

Tobias Adrian, Dong He, and Aditya Narain, IMF Blog December 9, 2021, Global Crypto Regulation Should be Comprehensive, Consistent, and Coordinated,
https://blogs.imf.org/2021/12/09/global-crypto-regulation-should-be-comprehensive-consistent-and-coordinated/

Sirio Aramonte, Wenqian Huang, and Andreas Schrimpf, DeFi risks and the decentralisation illusion, BIS Quarterly Review, December 2021
https://www.bis.org/publ/qtrpdf/r_qt2112b.htm

Agustin Carstens, Foreword, Non-bank financial sector: systemic regulation needed, BIS Quarterly Review, December 2021,
https://www.bis.org/publ/qtrpdf/r_qt2112_foreword.htm

Christie, Claeys and Weil, Next generation EU Borrowing: a first assessment. Bruegel Policy Contribution Nº 22/2021, November 2021

COM (2021) 742, Commission Staff Working Document, Analysis of the euro area economy Accompanying the document Recommendation for a Council Recommendation on the economic policy of the euro area, November 24, 2021.

Mohamed El-Erian, Project syndicate, December 2, 2021
https://www.project-syndicate.org/commentary/us-federal-reserve-transitory-inflation-trap-by-mohamed-a-el-erian-2021-12?barrier=accesspaylog

EY Insights Esade, NextGenEU Observatory, Madrid 2021
https://www.esade.edu/ecpol/en/key-topics/nextgeneu-spain-observatory/

Fedea, El Plan de Recuperación, Transformación y Resiliencia: un resumen anotado, 2021, https://fedea.net/el-plan-de-recuperacion-transformacion-y-resiliencia-un-resumen-anotado/

Fernando Fernández Méndez de Andés, The Euro in 2021, Moving Forward, Monetary Union after Covid19, A Yearbook on the Euro 2021, Fundación de Estudios Financieros, Fundación ICO, Madrid 2021.
https://www.ieaf.es/images/Publicaciones-FEF/Anuarioeuro2021/2_ANUARIO_EURO_2021_EN.pdf

Vitor Gaspar, Paulo Medas, and Roberto Perrelli IMF blog post,
https://blogs.imf.org/2021/12/15/global-debt-reaches-a-record-226-trillion/

Gorton, Gary B. and Zhang, Jeffery, Taming Wildcat Stable coins (September 30, 2021). SSRN: https://ssrn.com/abstract=3888752 or http://dx.doi.org/10.2139/ssrn.3888752

Jürgen Klaus, ESM Blog, Time for euro safe asset futures? December 12, 2021. https://www.esm.europa.eu/blog/time-euro-safe-asset-futures.

Christine Lagarde, ECB President Press conference, December 15, 2021.
https://www.ecb.europa.eu/press/pressconf/shared/pdf/ecb.ds211216.en.pdf

Raghuram Rajan Project syndicate, November 21, 2021
https://www.project-syndicate.org/commentary/fed-inflation-policy-framework-has-become-a-trap-by-raghuram-rajan-2021-11?barrier=accesspaylog

Valery A. Ramey NBER WP 27625, The Macroeconomic Consequences of Infrastructure Investment, July 2020

http://www.nber.org/papers/w27625

Larry Summers, speech at the 2018 ECB Conference in Sintra, Portugal, https://www.youtube.com/watch?v=k8j6dqkYMkg

Christopher Waller, Governor of the Federal Reserve, CBDC: A Solution in Search of a Problem? delivered at the American Enterprise Institute, Washington DC, August 5, 2021

https://www.bis.org/review/r210806a.pdf

INTRODUCTION
THE POLITICAL LANDSCAPE

1. THE EU QUEST FOR STRATEGIC AUTONOMY: PROBLEMS AND OPPORTUNITIES

José I. Torreblanca & Pawel Zerka
European Council on Foreign Relations

1.1. INTRODUCTION: WHAT IS STRATEGIC AUTONOMY AND WHY SHOULD WE CARE?

Strategic autonomy has become the buzzword of every EU speech, statement, or analysis about the EU's position in the world. The President of the European Commission, Ursula von der Leyen, made strategic autonomy a central element of her mandate in an inauguration speech in which she promised a "geopolitical Commission."[1] The President of the European Council, Charles Michel, has said "European strategic autonomy is goal number one for our generation." [2]

As one commentator has ironically pointed out, strategic autonomy has become "Europe's obscure object of desire."[3] Yet, despite its overwhelming presence in the public debate, defining strategic autonomy is not an easy task. Some use it indistinguishably from "Strategic Sovereignty" or, even, as Emmanuel Macron did in his 2017 Sorbonne speech, as "European sovereignty."[4] The most market-oriented and open to trade members fear its economic protectionist tone and prefer to speak of "open strategic au-

[1] U. Von der Leyen, Speech by President-elect von der Leyen in the European Parliament Plenary on the occasion of the presentation of her College of Commissioners and their programme, 27 November 2019.

[2] C. Michel, Strategic Autonomy for Europe – the aim of our generation – speech by President Charles Michel, Bruegel, 28 September 2020.

[3] F. Mauro, Europe's Strategic Autonomy: that obscure object of desire, IRIS, Analysis #13, October 2021.

[4] E. Macron, Initiative for Europe, Sorbonne Speech, 26 september 2017.

tonomy."[5] Similarly, some of the more Atlanticist member states, while they think the concept is useful in the economic domain, fear it would lead to the weakening of NATO and the dissolution of the transatlantic alliance.

The concept of Europe's strategic autonomy was first used in the discussions on how to boost EU defence industry, back in 2013-2015. At that time, the goal was to strengthen he EU's ability of becoming a better military partner (to NATO and the US) through the development of the EU Common Security and Defence Policy (CSDP). From there, it jumped to the EU's Global Strategy drafted by Federica Mogherini, at the time High Representative and Vice-President of the Commission for Foreign and Security Policy (HRVP), which expressed the need for the EU to enjoy the "an appropriate level of strategic autonomy" but without further defining the term. The official definition came about in the November 2016 European Council meeting conclusions referring to "the capacity to act autonomously when and where necessary and with partners wherever possible."[6]

With Trump in the White House and his openly anti-EU and NATO policies, strategic autonomy became even more salient as the capacity of the EU to act independently, not just at the side, from the US. This led to initiatives such as the Permanent Structured Cooperation in Defence (PESCO) and the European Defence Fund (EDF). More recently, the US controversial Afghan withdrawal has also witnessed more calls for Europe to be able to act on its own. As the President of the Commission, von der Leyen, said, it is time to move from a European defence ecosystem to a proper "Defence Union."[7] Yet, this goal has proven and will prove elusive, as EU member states do not seem to be ready to make the choices (and accept their consequences) of shifting from an economic into a geopolitical power able to project military power in a consistent and credible way.

From the defence field where it was born, strategic autonomy has been widened in the last years to include new areas and fields, such as economy and finance, technology, health, and migration. This has had much to do with impact of the COVID-19 pandemic and the launching of the EU Next Generation programme, but also with the increased geopolitical tensions between the US and China in the field of technology and the increasing weaponization of migration flows against the EU and its member states.[8]

Inevitably, however, the widening of its content has made the concept even more tenuous and difficult to grasp and, at the same time, more prone to criticisms by those who suspect that it could be used for the EU to erect barriers vis-á-vis the rest of the world and/or open the way to a more tightly regulated European economy with a larger role for the state and state intervention.

Still, the ever-growing trees of strategic autonomy should not let us lose sight of its

[5] European Commission, Trade Policy Review, 18 February 2021; as well as: Spain-Netherlands Non-paper on strategic autonomy while preserving an open economy, 24 March 2021.

[6] Council of the European Union, Council conclusions on implementing the EU global strategy in the area of security and defence, 14, November 2016.

[7] U. Von der Leyen, State of the Union, Address 2021, 15 September 2021.

[8] J. Borrell, Why European Strategic Autonomy Matters, A Window in the World, December 2020.

woods. The main driver behind the current discussions about European sovereignty and strategic autonomy is the realisation that globalisation has not reduced the level of conflict in the world. To the contrary, increased connectivity has allowed conflicts to move to new domains.[9] As Josep Borrell, the High Representative and Vice-President of the Commission for Foreign and Security Policy (HRVP), has said, the EU and the member states need "to learn to speak the language of power" and adjust our "mental maps to deal with the world as it is, not as we hoped it would be."[10]

We are currently living in a period of weaponised interdependence and increased geopolitical rivalries, for which Europeans seem to be poorly equipped. It is thus worth to depart, for a while, from the never-ending disputes about the difference between strategic economy and European sovereignty – as well as the ones about the relationship between the national and European sovereignty – by focusing instead on the real problem: the weaponization of interdependencies in the world Europeans are living in and the erosion of the rules-based international economic order on which Europe has prospered. From this perspective, sovereignty could be re-defined as an ability to devise and follow one's choice of foreign policy and to achieve one's objectives without having to fear the weaponization of interdependences by other actors. This holds for all the different areas: whether we speak about economy, tech, health, climate, migration, or defence. Europeans will be sovereign if they can manage their interdependencies vis-à-vis the rest of the world in a way which increases or, at least, not narrows, their capacity to decide on key foreign and security policy matters.

Such a conceptualisation has a clear advantage of enlarging the scope of the debate, which goes well beyond the narrow area of defence and security policy. But it also has a less obvious benefit of offering a practical way out of Europe's current state of vulnerability. In every domain, the strategy could consist of a mix of three approaches.[11] First, Europeans can try to reduce asymmetric dependence on strategic rivals when this is possible and justified. Secondly, Europeans can identify and develop their own strengths that can serve as asymmetric dependencies working in their own favour – thus countering or neutralising the advantage that others might have over us. And finally, Europeans can develop institutional solutions at the national, European, bilateral and multilateral level that diminish the room for a weaponised interdependence more broadly.

Yet, this reduction of Europe's dependencies and vulnerabilities, while much wanted, confronts key policy dilemmas on the right mix of instruments, incentives, and actors to be used to attain this goal. Some advocate for a return to industrial policy, intensive and sizeable public investment, and the support of national champions to deliver key technologies and goods, with the ensuing change of competition and state-aid rules. But the more liberal-oriented point out at the need for the EU to better regulate market, competition, innovation, and investment conditions if the EU is to catch

[9] M. Leonard, The Age of Unpeace: How Connectivity Causes Conflict, September 2021.

[10] J. Borrell, Europe's Hard and Soft power, European Foreign Policy in Times of Covid-19, 2021.

[11] H. Farrell, A. Newman, Weaponised Interdependence, International Security, 2019.

up with the next generation of technological innovations. As the EU moves into 2022 and seeks to transform its economy along the twin tracks of digital and green transitions with the aid of the NextGeneration funds, the extent to which this transformation achieves its goals will ultimately dictate how much real strategic autonomy the EU might be able to generate and at what cost may be reached.

What follows is a short overview of what European sovereignty means in different domains, what the political initiatives are to strengthen it, and what else could be done. We then look at the public opinion asking if citizens should be expected to be in favour or against the push for European sovereignty, and how this may differ from one domain to another.

1.2. THE MANY DIMENSIONS OF STRATEGIC AUTONOMY

1.2.1. THE ECONOMIC DIMENSION

If there's a gradation to economic sovereignty, Europe may perhaps – as of today – be in a glass-half-full situation.

On the one hand, it can flourish thanks to a large, sophisticated, and well-integrated single market, a wide network of trade partners, the region's innovativeness and industrial prowess, and an economic soft power. The EU27 is currently one of the two main players in the international trade in goods: it ranks alongside China and is ahead of the US. It is the world's largest exporter and importer of services, with key roles played by Germany, France, and the Netherlands. Taking goods and services together, the EU27 is the world's leading exporter and importer. Several EU member states regularly lead international competitiveness rankings. And the "Brussels effect" has been observed in several areas showing the EU's ability to promote its standards globally.[12]

The EU has thus a vested interested in sustaining an open and rules-based international trade system. On the other hand, however, Europe is clearly not economically sovereign: if judged by the facility with which others, in pursuit of their economic and non-economic objectives, weaponize its asymmetric dependencies. This is what happened when China, earlier this year, stopped rail freight and curbed Lithuanian imports into the Chinese market in reaction to Vilnius's announcement that Taiwan would open a representative office in the country. Similarly, Russia threatened to ban Czech beer imports when the Czech government linked Russian intelligence to the 2014 Czech warehouse explosions. For sure, Europe has experienced economic coercion from its transatlantic ally too: for example, when Washington imposed restrictions on companies involved in the construction of the Nord Stream 2 pipeline, or when it used secondary sanctions to stop Europeans from trading with Iran, and, earlier on, by using the Helms-Burton Act to sanction Spanish firms operating hotels in Cuba.

[12] A. Bradford, Brussels effect: How the European Union rules the world, 2020.

The economic links between nations will be a central arena, perhaps the central arena, of that new form of geopolitical competition, centred on the US-China rivalry. Trade, investment, and financial links will increasingly be instrumentalized in the service of geopolitical competition, be it through creating dependencies, seizing strategic industries of the future, or through pure economic coercion. Across Europe, there's a growing realization that the bloc cannot afford to remain vulnerable. But Europeans struggle to agree on the right way to go.

Currently, one of the hottest debates in Brussels concerns a new tool (the so-called "anti-coercion instrument") that would allow the bloc to deter economic coercion – or respond to it – using countermeasures. This is a promising initiative. If designed well,[13] this new trade instrument could significantly strengthen European capacity to deter and deal with economic coercion.

One of the key questions that will need to be resolved when designing it is about the scope: whether it should concern violation of state sovereignty only, or also other forms of coercion (such as those directed at individual companies or using informal pressure). In the former case, the business would still need some form of support from the EU to deal with economic coercion – possibly with an important role to be played by a re-vamped EU's Blocking Statute, an idea that is currently seriously considered. But one could also imagine a framework in which the anti-coercion tool protects both countries and the business, thus also fulfilling the many expectations that the EU's Blocking Statute currently struggles to satisfy.

Still, making Europe economically sovereign should not stop there.

First, the EU needs to balance defensive tools with a positive agenda. This matters for the effectiveness of its endeavours: for defensive instruments to work, Europe first needs to be economically strong. But such a mix might also be necessary for a political buy-in for new defensive tools among member states. Thus, more concretely, completing the single market should, in the new geopolitical context, return to the top of the EU's agenda. Europe also needs to better understand its dependencies on third countries, and consider the available approaches (e.g., industrial policies, trade diversification, FDI screening) that would help it reduce these or create some asymmetries in its own favour. At the same time, this must be complemented by a commitment to openness and a more strategic approach towards foreign economic policy: including trade, standards, economic diplomacy, and multilateral institutions.

Secondly, Europeans might need to invest in their capacity to understand their economic interdependencies, and to coordinate all the existing toolkit in a comprehensive way – against the current tendency towards compartmentalisation between, for example, trade, sanctions, and competition policy. This is where an EU Resilience Office could be of tremendous help.[14]

[13] J. Hackenbroich, P. Zerka, Measured response: How to design a European instrument against economic coercion, ECFR Policy Brief, 23 June 2021.

[14] J. Hackenbroich et al., Defending Europe's Economic Sovereignty: new ways to resist economic coercion, ECFR Policy Brief, October 2020.

And finally, Europeans need to prepare for other geo-economic threats that are only emerging on the horizon.

For example, central bank digital currencies (CBDC) look set to rewrite many of the rules of international trade and finance. More than four-fifths of the world's central banks are engaged in pilots or other central bank CBDC activities, including the European Central Bank. The digital renminbi could provide China with vast insights into transactions, and potentially even the opportunity to threaten exclusion from the system as a tool of economic coercion. It would also make it difficult or impossible for US or European regulators to enforce financial sanctions and money laundering laws, which are based on the traditional banking system.

Another example concerns protection of critical infrastructure. The problem is not just that the current FDI screening system in the EU is full of loopholes and lacks coherence across member state. It is also that Europeans should become better prepared for new tactics with which other powers could try to undermine the continent's critical infrastructure. These could come in the form of disruptive cyberattacks or investments in key technologies or new infrastructures like 5G.

1.2.2. THE TECHNOLOGICAL DIMENSION

Covid19 has brought the existential component of technology to the forefront. This has led to a wealth of EU initiatives, most particularly, the so-called EU's Digital Decade approved in March 2021 promoting digital skills, secure and sustainable digital infrastructures (5G, data clouds, edge computing, semiconductors, and quantum), the digital transformation of business, and the digitalisation of public services. The investments required to reach these goals will be supported by the funds earmarked for digital in the "NextGenerationEU" spending programme approved by the EU to boost the EU economy after the pandemic, which according to Ursula von der Leyden are likely to raise above the 20% spending target initially agreed.[15]

Europe's digitalization was already a priority before the Covid19 hit the continent. The dominant concern was Europe's lack of capacity to compete with US and Chinese firms in the deployment of key technologies such as AI, 5G or data and cloud services. Europe's was also lagging in research and innovation, and too often its firms, even if successful (such as Nokia or Ericsson), lacked industrial policy support to become global champions or suffered from rigid competition rules or lack of venture-risk capital allowing them to become global players. Still, the dominant view in Brussels and in the capitals was that this was mostly an economic issue on which Europe had to find the right combination of market incentives, regulations, and industrial policy investments. But while Europe slept, both US and Chinese firms expanded globally and created their own technological spheres of influence which the EU will have a hard time competing with.

As it happened in other key fields, the combination of Covid19, the rise of US-Chi-

[15] European Commission, 2030 Digital Compass: the European way for the Digital Decade, COM(2021)188, 9 March 2021.

nese tensions, the strains on global supply chains, and the increasing weaponization of critical technologies and its components have led the EU and the member states to think of technology flows and investments in terms of security. The widespread use of the concept of "technological sovereignty" (defined by Commissioner Thierry Breton as having three pillars: computing power, control over our data, and secure connectivity), reflects the view that new technologies are not only a major opportunity to create growth and jobs but a major redistributor of power among states and, too, a major gateway to two types of vulnerabilities: new dependencies and openness to foreign interference.[16]

That might explain why the EU has recently set its eyes on working closer with the US to face the Chinese technological challenge. The US-EU Trade and Technology Council (TTC), created in June 2021 and which had its first meeting in Pittsburg in September this year, reflects this attempt by Washington and Brussels to coordinate their strategies vis-à-vis China on issues such as investment screening, dual-use technology export controls, semiconductors and, more generally, global technology standards. Also, to the extent to which both the US and EU have been frequent targets of Russian-led cyberattacks, election interfering and disinformation operations, the two blocs are seeking to cooperate further in protecting their democracies and like-minded countries from authoritarian governments, which draw on new surveillance technologies to increase to suppress dissent and tighten their grip on power.

The EU is thus leaving behind its narrow regulatory approach to technology, based on the belief that all the Commission had to do is to ensure that the right market conditions and incentives are around and begin to strategically think and invest in the field with a view to reduce strategic dependencies in key, high-end technology areas, value and supply chains, and critical infrastructures. Owing to this new vision, the Commission has recently announced a European Chips Act aiming to reduce dependencies on semiconductors, whose production is mostly concentrated in Taiwan. This Act comes on the top of several legislative initiatives recently launched by the European Commission which cover all aspects of regulation related with digital markets and services, as well as AI, cybersecurity, and data storage and flows.

The challenge for the EU is double. First, if it wants to be a global player rather than a playground of the US and China, it needs a market base and a meaningful industrial capacity, which it currently lacks. However, for the EU it will be quite a challenge to imitate the successful technological investments of either the US or China: it lacks either the market and private capital capacity of the first and the strategic planning capacity of the latter. In 2019, US technological companies alone invested $109 bn in research and development, a quantity equivalent to the overall funds, both private and public, Germany dedicates to research. The EU might thus want to have its own technological solutions: the question is whether it can put together the resources needed to replace US investments and whether they will work. Here too, concerns about EU strategies

[16] U. Franke and J.I.Torreblanca, Geo-tech politics: Why technology shapes European power, ECFR Policy Brief 15 July 2021.

seeking technological sovereignty leading to protectionism have been voiced by EU member states, which have warned that European technological advances should not create "unnecessary burden or barriers."[17]

Second, what so far has made the EU relevant abroad on tech issues has been regulation, such as on the GDPR, rather than technology. Because the size of the internal market and the relevance of US tech firms in the continent, the EU has been able to export its data protection standards, a process which has been called the "Brussels effect" and has led observers to talk of the EU as a regulatory superpower. However, the current deadlock on transatlantic data flows, owed to the decisions of the EU Court of Justice on the so-called Privacy Shield (Schrems II) is a good example of the difficulties the EU faces when trying to turn its domestic standards in global ones. Here too, as technology becomes more and more geopolitical and the US and China step up their confrontation, the EU will likely experience more difficulties in being able to set global tech standards.

1.2.3. THE HEALTH DIMENSION

The Covid19 pandemic – and, most notably, the experience of temporary supply shortages of some of the most needed medical and protective products, including vaccines, – has given a new momentum to the debates about Europe's economic sovereignty. After all, what Europe would want to avoid is being in a position where others can weaponize the dependence that we have on them: such as when China used its "mask diplomacy," in the early phase of the pandemic, to nurture closer relations with only some EU members, to the detriment of the European unity. Also, the vaccine shortages and lower speed vaccination rates experienced at the early stages by the EU in comparison to the US and the UK have raised questions about the European Commission capacity to coordinate its member states health efforts.

At the same time, however, Covid19 has forced Europeans to think more specifically about health sovereignty. Political leaders realised that the bloc should become better prepared for the eventuality of another pandemic: most of all, in terms of the availability of supplies and equipment.[18] They also had to recognise that the ability to nurture and protect an effective health system is, ultimately, a question of security.[19]

In response to Covid19, the EU and its member states have made enormous strides in a relatively short time to increase their capacity to protect their health sovereignty.[20] The EU has used its regulatory power to improve its readiness to deal with health

[17] D9+ Declaration, Leading the Way to Europe's Digital Decade, Helsinki, 27 January 2021.

[18] Summary of European Commission's coronavirus response is available here https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/public-health/ensuring-availability-supplies-and-equipment_en

[19] M. Leonard, J. Shapiro, Sovereign Europe, dangerous world: Five agendas to protect Europe's capacity to act, ECFR Policy Brief, December 2020.

[20] J. Hackenbroich, J. Shapiro, T. Varma, Health sovereignty: How to build a resilient European response to pandemics, ECFR Policy Brief, June 2020.

crises and diversify supply chains for critical medical products and protective gear. It has also created the stockpiling of strategic reserves of some medicines or protective gear.

But beyond the Covid19 crisis, some suggest that the EU should consider a more institutionalised form of health sovereignty – which could then be based on six essential pillars.[21]

First, it needs to protect the single market against the restrictions associated with shocks such as the pandemic. For this, the EU needs a complete picture of healthcare infrastructure and dependencies across the union, common strategic stocks of health materiel, a strengthened and expanded civil protection mechanism that can coordinate aid to member states, and increased efforts in scenario planning and forecasting for the next such crisis.

Secondly, the EU should promote healthcare standards across the union. This time, because of healthcare inequality, EU states have experienced very different Covid19 crises.

Thirdly, the EU may consider extending investment protection to the health sector. The core effort should be to demonstrate the consequences of geopolitically motivated takeovers to potential global investors.

Fourth, the EU may need to protect healthcare supply chains. This does not mean that production must necessarily be brought back home. In many ways, Europe's diversified trade relations have made it resilient during the pandemic.[22] Therefore, the EU should not prescribe re-shoring but rather work closely with the industry to identify dependencies and vulnerabilities – while at the same time accepting that these can be reduced by way of diversification, as much as through re-shoring or nearshoring.

Fifth, the EU and its member states need to devote more money to medical research and development – and consider a mechanism that could quickly mobilise investment funds in emergencies.

Finally, Europeans should coordinate a global health agenda across multilateral institutions – because the less prepared the rest of the world is for the next pandemic, the more risks does it generate for the old continent itself.

1.2.4. THE CLIMATE DIMENSION

The EU is vulnerable to the impact of the climate crisis. But climate change is a global problem, and the EU depends on others to support its green agenda.

Across Europe, there's a growing realisation that it will be very hard to inspire large emitters – such as the US, China, and India – to sign on to the necessary emissions reduction commitments unless Europeans are prepared to exercise leverage and deploy other instruments of European power, such as the Carbon Border Adjustment Mecha-

[21] M. Leonard, J. Shapiro, Sovereign Europe...

[22] O. Guinea, F. Forsthuber, Globalization Comes to the Rescue: How Dependency Makes Us More Resilient, ECIPE Policy Brief, September 2020.

nisms (CBAM), which many countries outside the EU fear as opening the way for unilateral measures by the Brussels' institutions in order to force other countries to comply with EU goals or, more simply, to protect its industries . However, if the EU wants to use its leverage, it should be prepared that others might resist it. After all, this time Europe might be seen as weaponizing its links with the rest of the world to achieve its objectives – even if the EU's goal of fighting the climate change should be in their interest too. European efforts will likely provoke a geopolitical response from their international partners: ranging from cooperation in implementing complementary climate policies, to competitive efforts to redirect trade and investment flows, to downright hostile efforts to counter the effects of the European Green Deal.

From this perspective, climate sovereignty could be understood as Europe's capacity to carry out its preferred climate policy, and to achieve its goals, within the context of the weaponised interdependence. There are two key dimensions to that challenge.

First, the EU needs to remember that its green agenda requires secure access to appropriate resources and technologies. While Europeans will become less dependent on imports of oil and gas, their green transition can create new energy security risks, most notably from the import of the minerals and metals needed for the manufacturing of solar panels, wind turbines, lithium-ion batteries, fuel cells, and electric vehicles. These minerals and metals have special properties and few to no substitutes.[23] For instance, the EU produces only around 3 per cent of the overall raw materials required in lithium-ion batteries and fuel cells. Thus, the EU should improve the supply security of critical raw materials and limit its dependence on other countries – primarily from China – for these materials. Sometimes (as with raw materials necessary to produce wind turbines) room for diversification is limited – but improved recycling is still an option. And in some sectors (such as solar cells) Europeans would greatly reduce their vulnerability by simply strengthening their domestic manufacturing capacity.[24]

Secondly, when it deals with carbon leakage through the carbon border adjustment mechanism (CBAM), as is Brussels's current intention, it should be prepared that this could lead to major geopolitical tensions – and should try to manage these. For example, it could work with the US and other partners to establish a 'climate club' whose members would apply similar carbon border adjustment measures. At the same time, it should help neighbouring oil- and gas-exporting countries (such as Russia and Algeria) manage the repercussions of the European Green Deal. It could support their diversification and investments in renewable energy and green hydrogen (that they could, in future, export to Europe), for instance through a stronger and more coherent approach to climate finance.

[23] M. Leonard, J. Pisani-Ferry, J. Shapiro, S. Tagliapietra, G. Wolff, The geopolitics of the European Green Deal, ECFR & Bruegel Policy Brief, February 2021.

[24] Bobba, S., Carrara, S., Huisman, J. (co-lead), Mathieux, F., Pavel, C. (co-lead), Critical Raw Materials for Strategic Technologies and Sectors in the EU. A Foresight Study, European Commission Joint Research Centre, June 2021.

1.2.5. THE DEFENCE DIMENSION

As said, the idea of EU strategic autonomy was born, almost one decade ago, out of the need to strengthen the EU security and defence dimension. However, one can hardly say that the idea the EU should do more in defence is new. It goes back to the failed European Defence Community (EDC) in 1954 and the subsequent amendment of the 1948 Brussels Treaty to give way to the Western European Union (WEU). These early attempts at defence cooperation, including some relevant bilateral efforts from Germany and France following the Elysée Treaty of 1963, were the precursors of the Common Foreign and Security Policy (CFSP), launched by the 1991 Maastricht Treaty and the Common Security and Defence Policy (CSDP) set in motion by the 2009 Lisbon Treaty.

Be it in relation to the Cold War, the fall of the Berlin Wall, the Yugoslav War, 9/11 or the Iraq, Syrian, Libyan of Afghan Wars, all these efforts reflect the wish of the EU to adapt to changing security circumstances exposing its weaknesses and vulnerabilities when not its sheer impotence. However, despite all these initiatives, EU defence efforts have always had two major obstacles.

The first one has been political. Still today, member states have not agreed on how much European defence cooperation is compatible with NATO and the transatlantic alliance: some posit this is a positive-sum relationship in which the more European does the stronger the alliance will be, whereas some other fear that EU's strategic autonomy will provide the basis and the temptation for strategic independence, which they do not want at all. So, even after Trump's hostility towards the EU and NATO and Biden's controversial Afghan withdrawal and polemic deal with Australia and Britain (AUKUS), many Europeans, including Germany, are still keen on preserving the binds and bonds with the US and are suspicious of EU strategic autonomy.

This explains why Europeans, despite of all their promises and statements, have failed to field joint operational forces deployable outside Europe except in minor quantities and in scenarios of relatively minor importance. As seen recently in relation to the US Afghan withdrawal, time and again, with every new security crisis, Europeans go back to the drawer and rescue their old promises of being able to count with joint operation forces. But whether the EU rhetoric is constantly upgraded (from the Helsinki Headline Goal to the Battle Groups, the Permanent Structured Cooperation, or the most recently Expeditionary Force and European Defence Union laid out by Ursula von der Leyen),[25] the realities on the ground remain much unaltered, with the EU lacking the capacity that it could deploy abroad, and still heavily relying on the US and NATO support.[26]

Second, parallel to these crippling disagreement among member states, the other true obstacle to European strategic autonomy in the defence field is industrial. Great

[25] D. Boffey, Von der Leyen: EU must acquire 'political will' to build own military, The Guardian, 15 September 2021.

[26] C. Major and C. Mölling, The EU's Military Legacy: Over-institutionalized, under-equipped and strategically divided, in D. Fiott, The EU's legacy and ambition in security and defence, EUISS, 2020.

powers do not only field large armies and sizeable military budgets but engage in and benefit from heavy strategic and long-term industrial investments. The EU member states together do spend enough in defence (€200 billion, four times more than Russia and double than China), but so far lack a common strategic culture and a common defence industrial policy. This is why the Von der Leyen Commission has created a new Directorate for Defence Industry and Space and, together the with the HRVP, Josep Borrell and the Defence Ministries, has launched the so-called "Strategic Compass," aiming at evaluating EU member states joint operational visions and material needs. These moves have their origin in the 2004 creation of the European Defence Agency (EDA) seeking to coordinate military investment programmes and the more recent setting of a European Defence Fund (EDF) aimed at countering the problems of fragmentation, duplication and protectionism in the European Defence Market and creating an integrated defence market with free movement of goods and services and open public procurement.[27]

Where the European Army rhetoric reflects the top-down, high politics, and often unsuccessful EU way of doing things, industrial defence represents the alternative bottom-up cooperation in the economic field where the EU Commission uses its policy and budgetary instruments to create synergies among industries and positive spill over effects benefitting EU member states. Still, these efforts are often thwarted by EU member states insistence on taking advantage of EU regulations exempting defence industry investments from EU competition and state-aid rules to boost local industries and sustain jobs . Also, and more crucially, to maintain their own narrow version of strategic autonomy vis-a-vis other member states, leading to the continuation of duplications and inefficiencies. As a result, the EDF budget is still small (the EU's Multiannual Financial Framework only envisaged €13 billion for the 2021-2027 budget) and its added value unclear. Still, of the trinity of elements making for a true defence policy (cash, capabilities and commitments), what the EU needs is not so much cash but the capabilities and commitments which will ensure that its strategic autonomy was effective both in cases where it would need or want to stand alone given NATO or EU's reluctance or acquiescence, or in situations in which European security would require not only a strong US and NATO commitment but European back up.[28]

1.3. STRATEGIC AUTONOMY: DO EUROPEANS WANT IT?

As we have seen, European politicians, policymakers and experts are increasingly aware of the need to boost the bloc's sovereignty in different areas – which translates into concrete policy initiatives and political debates on the risks and benefits of specific solutions. A separate question is whether European citizens share the perspective of political elites.

[27] S. Besch, The European Commission in EU Defence Industrial Policy, Carnegie Europe, October 2019.

[28] N. Witney, Building European's capacity to defend themselves, ECFR Policy Brief, June 2019.

Some may argue that it does not matter. After all, citizens should not always be expected to have an opinion about rather complex initiatives that are needed to strengthen European sovereignty. We need political leadership and not submissiveness to public moods. However, for several reasons, voter opinion plays an increasingly important role in today's politics.[29] Thus, neither national nor European politicians can afford to underestimate it. This is particularly the case when such an emotionally charged concept as "sovereignty" is at play.

So, is there a popular support for European sovereignty? A response to this question needs to be analysed at two levels.

First, we could explore where Europeans place sovereignty and if they see any clash between the EU and their country on that matter. This is particularly important in the context of the current controversies around the primacy of EU law over national constitutions. At this general level, we can gauge the potential support for European sovereignty by checking whether people feel attached to the EU, and whether they sense a broader need for more rather than less European action.

On this, the available data is rather promising. According to the latest Eurobarometer,[30] across 27 member states, 72% say they feel citizens of the EU – while only 27% say they don't. In no country are those feeling citizens of the EU in a minority: even if in Greece they constitute merely 51% of the population. Similarly, across EU27, 57% feel attached to the EU while 42% do not. However, there are six countries – Czechia, Finland, Greece, Italy, Netherlands, and Sweden – where those who feel attached to the EU are in a minority. Finally, across the bloc, 59% agree that more decisions should be taken at the EU level, while only 34% disagree. Again, however, there are seven countries – Austria, Czechia, Denmark, Finland, Ireland, Slovakia, and Sweden – where more people disagree with this statement compared to those who agree.

In a separate Eurobarometer study,[31] 42% in EU27 would want more decisions taken at the EU level in ten years from now while only 20% would prefer the EU to have less say. But this is only the EU average – whereas in 11 countries a dominating perspective is that the current divide of competencies between the EU and member states is just right, while in two countries (Czechia and Slovakia) a prevailing view is that the EU should have less of a say. Thus, while a general support for European sovereignty seems to be there, an important caveat needs to be made that people in some member states are more opposed to it than elsewhere.

Secondly, we might focus on specific sectors, trying to gauge popular support for different European sovereignty initiatives: such as closer defence cooperation, greater health integration, or stronger defences against economic coercion. This should allow us to see whether, in some areas, there is perhaps more reticence to consider them as part of European sovereignty than in others; and whether a general support for

[29] P. Zerka, Une clef de la politique étrangère : l'opinion publique, Le Grand Continent, 16 April 2021.

[30] European Commission, Public Opinion in the European Union. Standard Eurobarometer 95, Spring 2021.

[31] European Commission, Future of Europe. Special Eurobarometer 500, 2021.

strengthening European sovereignty translates into an endorsement of specific policy initiatives. The problem here is that European citizens might lack an opinion, or even knowledge, about many of these initiatives – a normal feature of a representative democracy. Therefore, we often need to analyse the public sentiment using simplified questions as proxies. Still, these can provide us at least with an approximation of what is acceptable to the public and what is not.

For example, Europeans do not seem to have any major issue with European health sovereignty. According to Eurobarometer, across EU27 72% are in favour of a common EU health policy while only 22% oppose it. Denmark is the only country where opponents of this proposition prevail over its supporters.

Similarly, there is a widespread support for the EU's action on climate change: with 90% across EU27 agreeing that greenhouse gas emissions should be reduced to make the EU economy climate-neutral by 2050; and 87% agreeing it's important that the EU provides support for improving energy efficiency by 2030.[32] Still, it is unclear yet whether the current rise in energy prices will not significantly reduce the popular support for the EU's climate policy. In 2019, ECFR's research showed that there was a widespread support across Europe for protecting the environment, even at the risk of curbing economic growth; however, at that moment that question was largely theoretical – whereas, for many people, its significance is much more tangible today.

Support for boosting Europe's economic sovereignty seems to be relatively weaker than on climate or health – but this may be because the sense of urgency is correspondingly harder to grasp. According to the latest Eurobarometer, most Europeans (71%) believe that the EU has sufficient power and tools to defend the economic interest of Europe in the global economy while only 23% disagree. To some extent, support may be read as an expression of confidence in the EU. But, at least for some of those who disagree, this could reflect their belief that the EU needs more power and tools to be economically sovereign. From that perspective, it is worth noting that only seven countries – Belgium, Czechia, Estonia, Finland, France, Luxembourg, and Netherland – stand out in having at least 30% of the population who disagree with the above-mentioned statement. However, in no country are they in a majority; and the absence of Germany among the seven is noticeable.

Surprisingly, Europeans do not currently seem to be opposed to the idea of cooperating more on migration. This may partly be because, in the public imaginary, migration is no longer the main global challenge for the future of Europe – it has been displaced by climate change and risks related to health.[33] Thus, according to the latest Eurobarometer, most Europeans (71%) say there should be a common European policy on migration. Only a minority (22%) disagrees, and only in two countries – Czechia and Slovakia – opponents constitute a majority. Similarly, across EU27, 68% are in favour of a common European asylum system while only 23% oppose it. Again, Czechia and Slovakia are the only two countries where opponents of this proposition prevail over its supporters. However,

[32] European Commission, Climate Change. Special Eurobarometer 513, 2021.

[33] European Commission, Future of Europe. Special Eurobarometer 500, 2021.

most Europeans (50%) believe that migration and refugees should be dealt with equally at the EU and the national level; only in one country (the Netherlands) is there a majority saying that it should be tackled only or mainly at the EU level.

The devil is often in the detail, as is particularly clear on security and defence. According to Eurobarometer, there is a vast support (78%), and only minimal resistance (16%), to a common security and defence policy among the EU members. However, what this survey does not ask is, for example, whether Europeans would prefer to invest in the EU's or NATO's defence capabilities. Meanwhile, we do know from other surveys – such as ECFR's[34] – that there's a major divide on that point among Europeans: most notably, with the French being strongly in favour of the EU framework and the Poles demonstrating a clear preference for NATO. Thus, efforts to strengthen European sovereignty on defence will need to thread very carefully if they are to rely on a public support across the entire bloc.

Ultimately – and independently from an area that we look at – support for European sovereignty may depend on whether the public trusts the EU cooperation, more broadly, to make a positive difference to their lives. And here comes the major challenge. Since its start in early 2020, the Covid19 crisis has been a major test to the EU's unity and solidarity. On the positive side, member states have reached a historical deal on the NextGeneration EU funds for the most affected members, paving the way for some mutualisation of debt in the bloc. The EU has also coordinated the purchasing of Covid19 vaccines, preventing member states from competing with one another for a privileged access. And it has succeeded in rolling out the European Covid19 passport that currently allows cross-European travels to recover. On the flip side, early challenges in purchasing vaccines at sufficient scale and speed bruised the EU's image in the eyes of the citizens. And now, as the recovery fund has started to be rolled out, old and new divides are resurfacing (e.g., on rule of law, climate, migration, the use of the EU funds), further testing the European sentiment.

To the extent that the public opinion matters, this leaves us with a Catch-22 situation. Many Europeans might expose scepticism to the necessity of doing more at the European level, unless they are sure that this could change things for the better. At the same time, it may be difficult to prove that added value until EU member states and institutions start doing things together. Perhaps sequencing is the solution: showing the usefulness of pursuing European sovereignty in one domain (such as health or climate) could make it easier for the public to accept a closer cooperation on also more delicate matters (like defence or migration). In any case, this is exactly where a political leadership is needed to solve the apparent paradox.

1.4. CONCLUSIONS

As the EU moves into 2022, it witness a key change in its leadership with the depart of Chancellor Merkel. Gone with her will be the central reference of the European

[34] S. Dennison, Give the people what they want: Popular demand for a strong European foreign policy, ECFR Policy Brief, September 2019.

centre right for one and half decade. While the new German government is consistently pro-European and has included in its coalition contract promises of a more relaxed attitude to fiscal rules and public deficits in order to finance key strategic investments, it's not entirely clear to which extent this three partner traffic light coalitions made of Liberals, Social-democrats and Greens will be able to boost the German economy and the European integration process. At the same time, the challenge faced by Emmanuel Macron in the presidential elections to be held in France coinciding with the French Presidency of the EU in the first semester of 2022, add further uncertainties to the future of the eurozone as Mario Draghi struggles to keep together the coalition sustaining him and Spain faces many difficulties before reaching its pre-Covid economic status.

Outside the EU, neither global nor regional affairs are conducive to a stable environment in which the EU might feel safe enough to enjoy the benefits of economic recovery. President Biden's weaknesses and very small window of opportunity, coupled with the persistence of the protectionist trends launched by Trump (now verbalized in the "foreign policy for the middle class" policy) and the strength of the home challenge to democracy after the Capitol assault in January 2021, raise doubts as to how long can the EU count on a US conducive to its economic and security interests. Meanwhile, the security challenge posed by Russia in Ukraine and Belarus, together with the pressures exerted by Turkey's Erdogan and the tensions in the Mediterranean (of special interest to Spain given the rise of Moroccan-Algerian tensions), add further uncertainty and weakness to the capacity of the EU to stand for itself, its values and interests. In this context of global uncertainty and internal differences within the EU, the achievement of EU's strategic autonomy becomes more of a need every day. However, neither the process nor the means to deliver it seems to be arriving in time to make it effective.

PART I
ISSUES IN MONETARY POLICY

2. THE EUROPEAN CENTRAL BANK'S NEW MONETARY POLICY STRATEGY

Pablo Hernández de Cos[1]
Governor of the Banco de España

2.1. INTRODUCTION

Since the previous strategy review of the European Central Bank (ECB) back in 2003, the euro area and the global economy have undergone fundamental structural changes. Interest rates have reached historical lows and the set of monetary policy instruments has expanded significantly. In parallel, developments such as globalisation, digitalisation, an ageing population, climate change and innovations in the financial system have posed new challenges for the conduct of monetary policy. These issues prompted the ECB to launch a review of its monetary policy strategy in early 2020.

The new monetary policy strategy was unanimously approved by the Governing Council of the ECB and announced on 8 July 2021. Its main objective is to improve the ECB's capacity to fulfil its price stability mandate in the years to come by being as effective as possible in this challenging and changing environment – both today and in the future. The current review has drawn on an immense collective effort by staff at the ECB and the Eurosystem national central banks (NCBs) over the past 18 months, organised across thirteen work streams.[2] During this process we have listened to opinions from across Europe, including those from citizens, academics, members of the European Parliament and civil society organisations.

In this article I analyse the main aspects of the ECB's strategy review. It is structured as follows. Section 2.2 contextualises the previous strategic framework and explains the major structural changes the euro area has undergone in recent decades, leading the

[1] The views expressed in this article are those of the author and do not necessarily represent the views of the European Central Bank and the Eurosystem.

[2] See https://www.ecb.europa.eu/home/search/review/html/workstreams.en.html.

ECB to update its monetary policy strategy. More specifically, this section addresses two particularly significant issues for the conduct of monetary policy: the fall in the equilibrium real interest rates and, as a result, the limitations imposed by the lower bound on interest rates. Section 2.3 describes the main aspects of the strategy review and explains how they can help address the challenges which motivated it. Section 2.4 discusses the implications of climate change risks for the conduct of monetary policy in the euro area and how this has been reflected in the strategy. Section 2.5 analyses the recent change in our forward guidance on interest rates in order to adapt it to the new strategy. Section 2.6 summarises the ECB's monetary response to recent economic and inflationary developments under the new strategy framework. Section 2.7 contains my conclusions.

2.2. MOTIVATION

2.2.1. THE PREVIOUS STRATEGIC FRAMEWORK AND ITS RESULTS

The monetary policy strategy of the ECB is guided and bound by the mandate conferred by the Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU). Article 127(1) of the latter confers on the European System of Central Banks (ESCB) and, in particular, on the ECB the primary objective of maintaining price stability in the euro area.[3] The TFEU leaves to the discretion of the ECB the exact definition of "price stability" and how it is to be achieved, which is what is known as "monetary policy strategy."

The initial ECB monetary policy strategy was set out in 1998, the year the ECB was created. The ECB then defined price stability as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%. After an evaluation of this strategy, in 2003, the Governing Council of the ECB clarified that, in the pursuit of price stability, its objective was to maintain inflation rates below, but close to, 2% over the medium term.

The ECB set a positive inflation target, rather than zero, mainly for three reasons.[4] First, because maintaining a positive inflation rate reduces the probability that nominal interest rates will become constrained by their lower bound as a result of a disinflationary shock. This is a crucial issue that will be dealt with extensively in the following sections. For the moment, it suffices to point out that, back in 2003, it was considered that an inflation rate below, but close to, 2% provided a safety margin wide enough for interest rates not to hit their lower bound.

[3] Without prejudice to this objective, Article 127 of the TFEU also establishes that the Eurosystem shall support the general economic policies in the European Union (EU) with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 of the TEU. These objectives include balanced economic growth, a highly competitive social market economy aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment.

[4] See https://www.ecb.europa.eu/mopo/strategy/pricestab/html/index.en.html

A second reason for having a positive inflation target is that HICP inflation may be subject to a positive bias when measuring the real increase in the cost of the consumption basket (e.g. owing to improvements in product quality). This implies that zero inflation in the HICP would entail a de facto fall in prices.

Third, a positive inflation rate in the euro area as a whole leaves room for possible differences between the inflation rates of the different countries. If the euro area's inflation target was zero, this would imply that, in order to offset positive inflation in certain countries, the rest would face negative inflation rates, i.e. deflation. Since, in environments with downward price and wage rigidities, deflation tends to have negative effects on economic activity and employment, maintaining positive inflation in the euro area reduces the risk of observing those negative effects in some parts of it.

The strategy review in 2003 also stated that price stability had to be maintained over the medium term. It is impossible, and often not even desirable, for any central bank to either keep inflation on target at all times or to bring it back to a desired level within a very short period of time. This is due to the existence of short-term volatility resulting from non-monetary shocks that might affect the price level. Consequently, the conduct of monetary policy needs to have a forward-looking, medium-term orientation. The horizon should be short enough to be verifiable and credible, but long enough to be consistent with inflation controllability. The standard transmission lag of monetary policy (i.e. the time it normally takes for a monetary policy impulse to exert its maximum impact on the economy and inflation) determines the minimum interval of time that quantifies the "medium term."

Moreover, the medium-term orientation allows the ECB to adapt its monetary policy responses to the nature and size of the shocks affecting the economy. Demand shocks, for instance, such as an increase in government spending, cause inflation and output to increase (or decrease) jointly. Nonetheless, supply shocks push inflation and output in opposite directions. As a result, supply shocks usually require a smoother and more protracted policy response to avoid excessive volatility of output and employment.[5]

The 2003 strategy review also analysed the instruments that the ECB should employ to achieve its target. Its main instruments were the ECB's key interest rates: (i) the deposit facility rate (DFR), i.e. the interest earned by euro area banks on their overnight deposits at the ECB; (ii) the rate of the marginal lending facility, through which the ECB provides overnight credit to banks; and (iii) the rate on the main refinancing operations, through which the ECB provides one-week credit to banks. Changes in these policy interest rates affect money market rates and these, in turn, are ultimately passed through to the interest rates paid by agents in the real economy (firms, households and governments), whether through debt markets or bank lending.

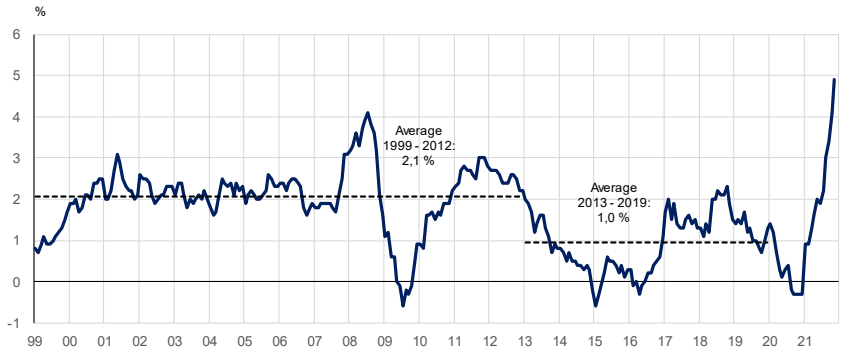
The performance of the ECB before the Great Financial Crisis (GFC) of 2008-2009 was quite positive. During the first decade of the euro, against a backdrop of mainly

[5] For further details, see ECB (2021a).

inflationary shocks, inflation remained close to target levels. This helped keep economic agents' inflation expectations well-anchored and, therefore, established the ECB's credibility for fulfilling its price stability mandate.

The onset of the GFC in 2008, however, led to a second phase dominated by disinflationary pressures which, over time, generated a downward trend in inflation. During this phase, the ECB maintained a low interest rate policy in an attempt to boost the economy and inflation. However, the existence of a lower bound on interest rates restricted the ECB's ability to continue reducing its key interest rates. This limitation, together with the persistent fall in inflation and incipient signs of deanchoring of long-term inflation expectations, led the ECB to implement, from 2014, non-standard monetary policy measures such as large-scale asset purchases or longer-term refinancing operations. Despite the implementation of all these measures, inflation has remained persistently below target since 2013[6] (see Chart 1).

Chart 1: Euro area HICP (1999-2021).



Source: Eurostat. Last observation: November 2021.

2.2.2. THE DECLINE IN NATURAL INTEREST RATES AND THE PROBLEM OF THE LOWER BOUND

Why have the historically low interest rates of the last decade not been sufficient to keep inflation around its target? To answer this question, we need to understand the concepts of "natural interest rate" and "lower bound."

First, it is important to remember that, in order to achieve price stability, the central bank influences the level of interest rates on the financing received by the various economic agents. Although the central bank controls the nominal interest rate, it is the "real" interest rate – i.e. the nominal rate less expected inflation – that is relevant for households' and firms' spending decisions. For instance, a nominal interest rate of 2%

[6] For further details, see Rostagno et al. (2019).

when expected inflation is 4% is much more expansionary than a nominal interest rate of 1% in a non-inflationary setting.

Given that goods and services prices are partly rigid, the central bank may influence the real interest rate by adjusting nominal rates. The central bankers' playbook prescribes that if the economy is overheating and prices and wages are under upward pressure, the central bank should raise nominal interest rates above inflation expectations, thus tightening real rates and cooling down the economy. And vice versa, in a downturn, with falling prices and rising unemployment, the central bank should cut nominal interest rates, thus reducing real rates and stimulating aggregate demand.

The standard "New Keynesian" monetary policy model establishes that, to achieve the inflation target, the central bank must maintain real interest rates at a level known as the "natural interest rate," defined as the real interest rate that maintains output at its potential level and inflation stable at its target level.[7] This natural interest rate evolves dynamically depending on both the structural and cyclical situation of the economy. A central bank with a price stability mandate will attempt to adjust nominal interest rates, over time, in line with the changes in the natural interest rate.

In practice, the natural rate of interest cannot be observed directly and can only be estimated, with some degree of uncertainty, using econometric techniques.[8] Despite this caveat, there is a general consensus that in advanced economies the natural rate of interest has been in progressive decline over recent decades (see Chart 2). This drop is mainly attributable to structural factors that have shifted the balance between the supply of savings and investment demand. These factors include demographic developments (such as increased life expectancy, which gives workers an incentive to save more for retirement),[9] the decline in trend productivity growth (which reduces demand for credit to finance investment projects)[10] and growing inequality (as higher income groups usually have a greater propensity to save).[11] Given that these are, in principle, long-term trends, they are unlikely to reverse in the short and medium term. Accordingly, the natural rate of interest can be expected to stay at low levels in the years ahead.

The decline in the natural interest rate means that, in order to stabilise inflation, real interest rates and, therefore, nominal interest rates need to be lower now than two or three decades ago. Indeed, in economies such as the euro area several estimates place the natural rate of interest at negative levels.[12]

[7] The concept, determinants and implications for monetary policy of the natural interest rate are discussed in Galesi et al. (2017). The natural rate of interest is sometimes also called the "equilibrium interest rate."

[8] For example, Holston et al. (2017) estimate that in 2016 the natural rate in the United States was positive but very close to zero.

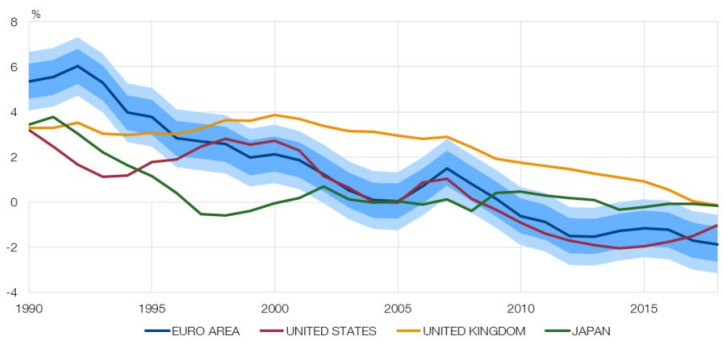
[9] See, for instance, Gagnon et al. (2016) and Eggertsson et al. (2019).

[10] For studies that relate the natural interest rate to productivity growth and risk factors, see Gordon (2015) and Fahri and Gourio (2018).

[11] Mian et al. (2021) estimates suggest that rising income inequality is the more important factor explaining the decline in the natural rate in the United States.

[12] See, for example, Fiorentini et al. (2018).

Chart 2: Change in natural rate of interest in main advanced economies.



Source: 2018 Annual Report, Banco de España, drawing on the model of Fiorentini, Galesi, Pérez-Quirós and Sentana. (2018). Note: The euro area bands denote 68% and 90% confidence levels.

The decline in natural rates of interest would not be problematic if nominal rates could fall as much as necessary; for instance, with an expected inflation rate of 1%, in order to achieve a real interest rate of, for example, -2%, the nominal rate would have to be as low as -1%. The problem is that nominal interest rates cannot drop as far into negative territory as would be necessary. As the central bank lowers rates into negative territory, commercial banks endure negative returns on a growing portion of their assets. Each individual bank would then face the dilemma of either passing on these negative returns to deposits, with the risk of depositors transferring their savings to other banks or withdrawing them as cash, or else seeing their profitability undermined by the negative spread between the return on their assets and liabilities. In either case, very negative interest rates would adversely affect the financial sector's intermediation capacity, with the ensuing detrimental impact on the supply of credit, economic activity and inflation.

There is therefore a lower bound to nominal interest rates. Should central banks lower interest rates below this bound, the effect on the economy may even be contractionary rather than expansionary, owing to the adverse effects on the financial system as a whole.[13] The level of this lower bound is not directly observable and varies over time according to the financial sector's situation. In any event, it represents a floor for central bank interest rates.[14]

The lower bound introduces an asymmetry into the conduct of monetary policy. As mentioned before, if inflation rises above its target, central banks can raise interest rates as much as necessary to cool the economy and bring inflation down. However, should deflationary shocks drive inflation below the target and prompt the central bank to cut

[13] See, for example, Brunnermeier and Koby (2018) for a discussion of the effect of interest rates on banks' profitability and their ability to lend.

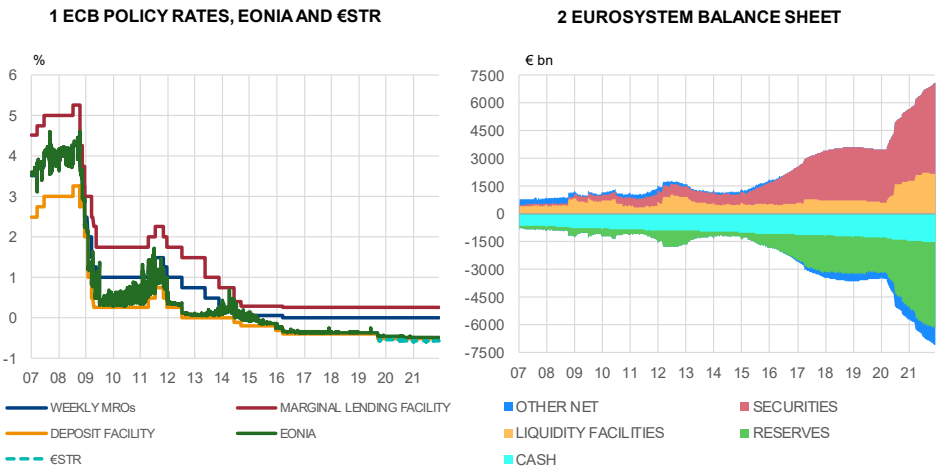
[14] Arce et al. (2018) estimate that the current level of negative rates does not necessarily restrict the supply of credit by European banks, in particular by Spanish ones.

its interest rates, these may ultimately hit their lower bound. This asymmetry means monetary policy is potentially highly effective in combating high inflation, but less so in combating deflation or even persistently low inflation.[15]

A dangerous vicious circle may develop as a result. Against a backdrop where central banks' hands may frequently be tied by the lower bound, economic agents will expect any inflation overshooting to be corrected swiftly, but may expect an undershooting to last much longer. Therefore, expected future average inflation will tend to run below target, reflecting the asymmetric distribution of inflation expectations. Given that in the long run the nominal interest rate is the real equilibrium interest rate plus expected inflation, a fall in the latter entails lower average nominal rates, causing them to hit their lower bound more often. This means less room is available for monetary policy to provide stimulus in downturns, driving inflation expectations even lower, and so on. This vicious circle must be avoided, since the economy could ultimately become stuck in a trap of low interest rates, low inflation and low growth.

To stave off such a vicious circle, and in view of the scant space to cut interest rates further, in 2014 the ECB decided to introduce a set of "non-standard monetary policy measures." These measures included (mildly) negative deposit facility rates, the asset purchase programme (APP), targeted longer-term refinancing operations (TLTROs) and forward guidance on the future path of interest rates. These instruments aim to minimise the lower bound problem by acting on the medium and long parts of the yield curve or, in the case of TLTROs, by directly incentivising the supply of bank lending to the real economy (see Chart 3).

Chart 3: ECB policy rates and EONIA, and Eurosystem Balance Sheet.



Sources: Thomson Reuters Datastream and ECB.

[15] See Banco de España (2019) for a detailed discussion.

A brief overview of each of these non-standard measures is in order. One of them was the adoption of moderately negative interest rates, specifically for the deposit facility. Following subsequent small cuts since 2014, the DFR currently stands at -0.5%. The evidence so far suggests that this negative interest rate policy has been effective in stimulating the economy.[16] Notwithstanding, the existence of the lower bound implies that the space for further cuts is limited.

A second measure was the purchase by the Eurosystem of different financial instruments, including public and corporate sector bonds, covered bonds and asset-backed securities (ABS). Asset purchases support inflation in three ways: (i) through the market stabilisation channel, by which asset purchases provide liquidity when there are deep dislocations in financial markets; (ii) through the portfolio rebalancing channel, by which they reduce the aggregate duration and credit risk to be held by price-sensitive investors, inducing a shift into other, riskier assets in the economy and thereby supporting their value; and, (iii) through the signalling channel, by which they signal the intention of central banks to keep policy rates low for longer.[17]

Through these channels, asset purchases drive up demand for public and private-sector bonds, raising their price and, therefore, lowering their yield. Thus, although short-term interest rates are restricted by the lower bound, the ECB can reduce medium and long-term interest rates, which are often more relevant when it comes to determining the financing conditions of economic agents and, consequently, their spending decisions.[18]

A third measure were longer-term refinancing operations. Under the current TLTRO framework, the Eurosystem extends long-term financing to euro area banks at lower rates than the standard policy rates, on the condition that banks increase or maintain their supply of credit to the real economy. This lowers the cost of bank loans to firms and households, thus stimulating aggregate demand and inflation.[19]

Lastly, the central bank uses forward guidance to signal to investors and other economic agents the expected path[20] of interest rates and the factors determining that path. For example, for a number of years the ECB has linked the eventual lift-off in its

[16] Arce et al (2018) estimate that the adverse effects of the negative interest rates on European banks' intermediation capacity only show up after a protracted period of ultra-low rates.

[17] See Costain et al. (2021) for a discussion of the effects of public bond purchases on interest rates. For an analysis of how the corporate sector purchase programme affects the financing of non-financial corporations, see Arce et al. (2017).

[18] For governments and corporate issuers, this is a direct channel since they mainly raise financing on bond markets using medium and long-term bonds. For households and firms relying on bank lending, this channel is less direct: medium and long-term market rates are used as a benchmark for setting the cost of most loans.

[19] Andreeva and García-Posada (2019) estimate the impact of TLTROs on banks' lending policies in the euro area. More recently, Barbiero et al. (2021) estimates suggest that TLTRO-III have allowed banks to accommodate the large-scale increase in credit demand triggered by the pandemic.

[20] For an analysis of the macroeconomic effectiveness of forward guidance on interest rates and on future developments in the central bank's asset portfolio, see Arce et al. (2019).

key interest rates to the evolution of the outlook for euro area inflation. The ECB thus establishes the conditions, in terms of the convergence of inflation to its target, that must be in place in order to begin raising interest rates. This allows the ECB to steer market expectations on the future path of its policy interest rates, which affects the yield curve and, again, financing conditions for economic agents.

All in all, there is a broad consensus that these non-standard instruments have been effective in easing financing conditions and supporting euro area inflation, economic growth and employment.[21] However, despite their expansionary effects, they have not prevented inflation from remaining persistently below the ECB's aim for much of the previous decade.

It should also be emphasised that the inflation target as defined under the previous strategy amplified the problems associated with the lower bound. The previous inflation aim ("below, but close, to 2%") risked being interpreted as asymmetric, in the sense that the monetary policy response to an inflation overshoot would be more forceful than to an undershoot. This possible perception of asymmetry, together with the ambiguity over the exact numerical target, arguably did not help anchor inflation expectations at levels genuinely close to 2% once interest rates ran close to the lower bound. There was therefore a case for establishing a clearer and more symmetric inflation target, one that would not be interpreted mechanically as an inflation ceiling.

In January 2020, this consideration, together with the challenges associated with declining natural rates of interest and other structural changes in recent decades (such as globalisation, digitalisation and climate change), prompted the ECB to launch an exhaustive review of its monetary policy strategy.[22] On 8 July 2021, the President, Christine Lagarde, presented the outcome of that review, which will be addressed in more depth in the next section.

2.3. THE MAIN ELEMENTS OF THE NEW STRATEGY

The ECB's revised strategy includes two fundamental innovations.

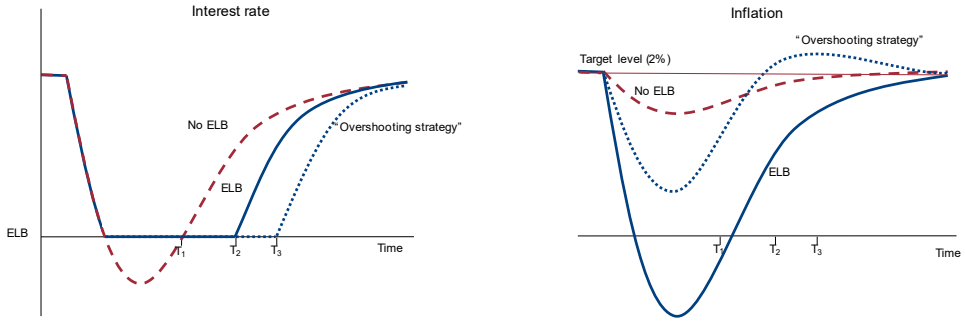
First, a new medium-term inflation target of 2% has been adopted. This target is symmetric, meaning that positive and negative deviations of inflation from the target are considered to be equally undesirable. Hence, the 2% inflation target seeks to provide a clear anchor for inflation expectations, which is essential for maintaining price stability; this eliminates any ambiguity and the possible perception of asymmetry of the previous target. Also, the replacement of a target that, in spite of the ambiguity, was in any case below 2% by one that is exactly 2% involves a de facto increase in the target, which should help to raise the average level of inflation and nominal interest rates and, therefore, reduce the frequency with which the lower bound constrains ECB action in the future.

[21] Considering the effective lower bound on policy rates, a combination of instruments is generally more efficient than relying on a single tool. See Altavilla et al. (2021) for an assessment of the efficacy, efficiency and potential side effects of the ECB's monetary policy instruments since 2014.

[22] See ECB press release "ECB launches review of its monetary policy strategy," of 23 January 2020.

Second, to maintain the symmetry of the inflation target, the ECB has recognised the importance of taking into account the implications of the lower bound. In particular, the strategy establishes a requirement for especially forceful or persistent monetary policy action when the economy is close to the lower bound, in order to avoid negative deviations from the inflation target becoming entrenched. This may also imply a transitory period of overshooting, in which inflation is moderately above target. This may be useful to the extent that, in a situation in which nominal interest rates are limited by their lower bound, agents expect relatively high inflation in the future, which reduces real interest rates and thus stimulates economic activity (see Chart 4).

Chart 4: Overshooting.



Source: Own calculations.

The new strategy has confirmed the medium-term orientation of monetary policy that existed under the previous strategy. As described in Section 2.2.1, the medium-term orientation provides room for the inevitable short-term deviations of inflation from target, as well as for lags and uncertainty in the transmission of monetary policy. The flexibility of the medium-term orientation allows an appropriate response to inflation deviations from target in each specific context, according to the origin, magnitude and persistence of the deviation.

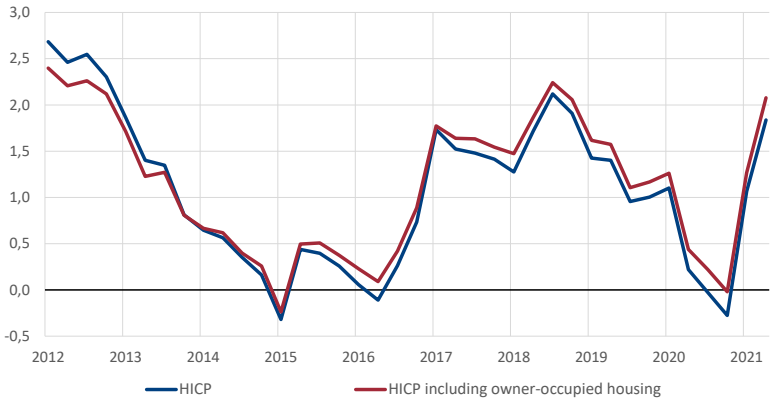
As regards monetary policy instruments, the set of ECB policy rates remains as the primary instrument. However, in recognition of the effective lower bound on policy rates, the ECB will also employ forward guidance, asset purchases and longer-term refinancing operations, or any other instrument, as appropriate.

Turning to the measurement of inflation, the HICP remains the most appropriate indicator for quantifying the price stability objective for the euro area. This index has proved to be timely, reliable (i.e. infrequent revisions), credible and comparable over time and across countries.[23] However, the ECB recognises that the incorporation of

[23] These criteria were also applied in the 2003 strategy review; see Issing, O. (ed.), Background Studies for the ECB's Evaluation of its Monetary Policy Strategy, ECB, 2003, p.12.

owner-occupied housing costs in the HICP would make it more representative of the inflation rate relevant to households. For this reason, the ECB has recommended including such costs in the HICP (see Chart 5). This process, however, could take years due to methodological challenges, such as the need to separate the consumption and investment components in housing prices, where the former is the relevant one for monetary policy. Meanwhile, the ECB shall take into account, in addition, other measures of inflation that estimate the cost of owner-occupied housing in its monetary policy assessments.

Chart 5: HICP and HICP with owner-occupied housing.



Sources: Thomson Reuters Datastream and ECB.

The new strategy has also involved reformulating the analytical framework on which the ECB's monetary policy decisions are based. Until now, the ECB's Governing Council has grounded its decisions, including the assessment of the proportionality and possible side effects of our measures, on a comprehensive assessment of all the relevant factors. This assessment was based on two pillars: the short and medium-term economic analysis, and the longer-term monetary analysis. In particular, the economic analysis in this framework was focused on economic developments, while the monetary analysis examined the monetary and financial indicators, placing the focus on the functioning of the monetary policy transmission mechanism and on the possible risks to medium-term price stability arising from financial imbalances and monetary factors.

However, the pervasive role of macro-financial linkages in current economic, monetary and financial developments requires that the interdependencies across the two analyses are fully incorporated. Hence, in the new strategy monetary policy decisions will be taken on the basis of an integrated framework that brings together the economic analysis and the monetary and financial analysis, thus contributing to a comprehensive

and robust assessment of the outlook for and risks to price stability over different time horizons.

The interaction between monetary policy and financial stability will also be analysed, recognising that financial stability is a precondition for price stability. In this respect, the monetary analysis has shifted from detecting risks to medium and long-term price stability to providing the information needed to assess the monetary policy transmission mechanism.

The communication of monetary policy decisions plays an important role in the new strategy, given that the Governing Council's decisions need to be understood not only by experts, but also by the general public. As a result, new versions of the monetary policy statement, the press conference, the Economic Bulletin and the monetary policy accounts have been launched with different levels of technical detail for different audiences. In this respect, the ECB's Governing Council wishes to make communication activities a permanent feature of the Eurosystem's interaction with citizens. Specifically, we will hold regular outreach events for the public, allowing citizens to voice their concerns and us to explain the ECB's actions and their implications for society.[24]

Finally, the ECB's strategy update has taken into account other challenges for monetary policy posed by recent major structural changes, such as globalisation, digitalisation and climate change. The latter is currently a policy priority for the European Union and will be further discussed in the next section.

Looking ahead, it will not be necessary to wait almost two decades for the next strategy review. The ECB intends to assess the suitability of its monetary policy strategy regularly and plans to conduct the next assessment in 2025.

2.4. IMPLICATIONS OF CLIMATE CHANGE RISKS IN THE NEW STRATEGY

Preliminary simulation results show that, without further mitigation policies, physical risks from climate change—heat waves, windstorms, floods, drought and the like—will probably increase substantially.[25] However, exactly how climate change will affect the economy and the financial system is still far from certain.

Addressing climate change is a global challenge and a policy priority for the European Union. While governments and parliaments have the primary responsibility to act on climate change, within its mandate the ECB recognises the need to further incorporate climate considerations into its monetary policy framework.

The main reason is the following. Macroeconomic and financial market disruptions linked to climate change and transition policies to carbon neutrality could affect the conduct of monetary policy and thus the ability of the ECB to deliver on its price stabili-

[24] For further information, see the ECB's website, which has more details on the different events: Overview of listening events across the euro area.

[25] See Alogoskoufis et al. (2021).

ty mandate. The evidence suggests that, depending on the nature and speed of the transition policy, climate-related risks not only have crucial implications for price stability but also affect the transmission of monetary policy through other areas of central bank competence, such as financial stability and banking supervision. If the financial system is weakened, the transmission of monetary policy may be impaired.

In particular, several risks related to climate change may affect price stability through at least five channels.

First, the consequences of climate change might impair the transmission of central bank monetary policy measures to the financing conditions faced by households and firms, and hence to consumption and investment. Losses from the materialisation of physical risks or stranded assets (such as oil reserves that will not be tapped as the world moves away from fossil fuels) could weigh on financial institutions' balance sheets, reducing the flow of credit to the real economy.[26] In addition, the longer climate change remains unaddressed, the greater the risks to monetary policy transmission from a sharp and abrupt rise in credit risk premiums. This may happen via a sudden repricing of climate-related financial risks. In fact, even central banks themselves are exposed to potential losses from securities acquired in asset purchase programmes and from the collateral provided by counterparties in monetary policy operations.

Second, climate change could further diminish the space for conventional monetary policy by reducing the natural interest rate, on top of the factors that have already driven its secular decline over the past few decades. For example, higher temperatures might impair labour productivity or increase rates of morbidity and mortality. Productive resources might be reallocated to support adaptation measures, while climate-related uncertainty may increase precautionary savings and reduce incentives to invest. Collectively, these factors can reduce the real equilibrium interest rate and therefore increase the likelihood that a central bank's policy rate will be constrained. But, on the other hand, climate change could trigger effects in the opposite direction. First, higher demand for investment for adaptation and mitigation purposes may push up equilibrium rates, all else being equal. Second, an increase in productivity related to green innovation may also exert upward pressure on the natural rate and chart a path out of the low-inflation, low-interest-rate environment. The net effect of these two opposing forces is uncertain ex ante. However, should the forces dampening the natural rate prevail, the policy rate could hit the effective lower bound more often, limiting the space for conventional monetary policy.[27]

Third, both climate change and policies to mitigate its effects can have a direct impact on inflation dynamics. Although most empirical estimates suggest that climate change will likely have a limited impact on the European economy in the next few dec-

[26] A number of recent stress tests have pointed to financial stability risks in the euro area arising from stranded assets created by the sudden and unexpected introduction of carbon-penalising policies. See, for instance, Vermuelen et al. (2018).

[27] Various studies argued that climate change is on net likely to put downward pressure on the natural rate (r*) through several channels, yet the extent and timing, and possibly even the direction, of the impact are still highly uncertain. See, for instance, Cantelmo (2020) and Brand et al. (2018).

ades, the probability distribution of climate-related risks observed in historical data may be a poor indication. It cannot be taken for granted that past relationships will hold in the future due to non-linearities and the development of new technologies. For example, model-based scenario simulations that calibrate the economic effects of climate change for alternative greenhouse gas (GHG) concentration trajectories find larger negative effects on the level of global GDP, in particular as of the second half of this century.[28] Additionally, how the transition to carbon neutrality will be addressed remains uncertain. However, academics, public authorities and policymakers have so far mainly focused on two main types: carbon-penalising policies, which aim to reduce emissions through their pricing, such as a carbon tax or cap-and-trade emissions trading schemes; and green-supporting initiatives, which aim to create incentives for financial agents to invest in green projects by lowering their relative cost of funding. Both types of transition policies may also have non-negligible effects on financial activities, relative prices, inflation, output growth and productivity.[29]

Fourth, climate risks may complicate the correct identification of the shocks relevant for the medium-term inflation outlook, making it more difficult to assess the optimal monetary policy stance and potentially increasing the prevalence of output and price stabilisation trade-offs. For example, the transition to a carbon-neutral economy, even if smooth, is likely to have a significant effect on the optimal response of monetary policy, particularly if it occurs in a disorderly fashion.[30] In an orderly scenario, however, where transition policies are well-communicated and anticipated by households and businesses, the impact would be contained and pose little threat to the ability of the central bank to maintain price stability.

Fifth, uncertainty about the magnitude of the effects of climate change and the horizon over which they will play out in the economy may compound the foregoing effects. A set of ECB model-based simulations show how climate-related physical and transition risk could interact with financial fragilities, which themselves could be the result of climate risks materialising, and how this could significantly restrict the ability of monetary policy to respond to standard business cycle fluctuations[31] (see Chart 6).

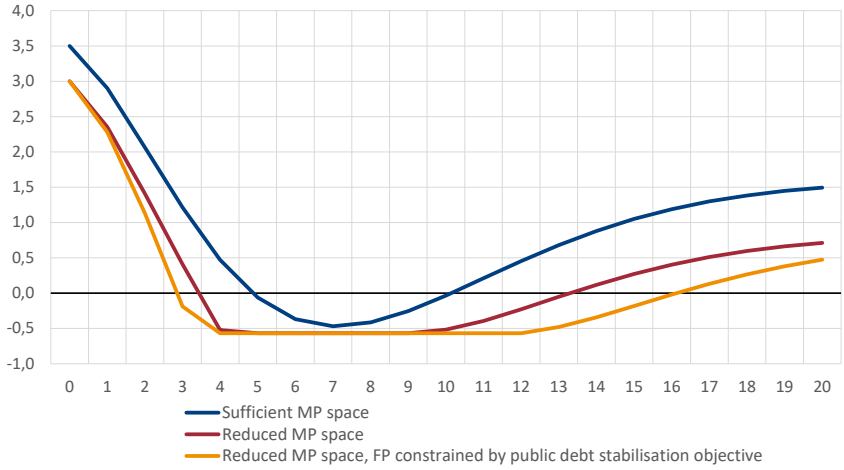
[28] Two benchmark studies are Nordhaus (2017) and Dietz and Stern (2015), who allow climate change to affect total factor productivity (TFP) growth, which suggests strong non-linear effects. Depending on the assumptions about the various representative concentration pathways (RCPs), estimates of long-run losses in global GDP vary from 0.7% in a mild scenario to 62% of global GDP in a severe scenario.

[29] Acemoglu et al. (2012) argued that the overall economic impact of carbon-penalising measures depends on the speed of transition and the availability of alternative energy sources.

[30] In this scenario, ECB model-based simulations show that the increase in energy prices is delayed, but then implemented suddenly, coming as a surprise to households and businesses. In this sudden scenario, energy prices rise by 13.5% per year. Headline inflation diverges from target for a prolonged period. If the central bank looks through the increase and targets core inflation, the impact reaches 0.5 percentage points by the fourth year. Conversely, targeting headline inflation results in a much greater reduction in GDP growth. For further details, see Section 2.4 of ECB Work stream on climate change (2021).

[31] For more details on model simulations using the ECB's New Area-Wide Model (NAWM) see Section 2.5.4 of ECB Work stream on climate change (2021) and Darracq Pariès et al. (2020).

Chart 6: ECB climate-related simulations.



Magnitude: deviation from steady-state, annual rate in percentage points.
Source: ECB simulations based on the NAWM model.

As a consequence, central banks are starting to integrate climate-related risks into their monetary policy operations. Indeed, climate change considerations are an integral part of the ECB's monetary policy strategy review. The ECB has committed to an ambitious action plan to include climate change considerations in its monetary policy framework.[32] With this decision, the Governing Council underlines its commitment to reflect environmental sustainability considerations more systematically in its monetary policy.

These considerations include the incorporation of climate-related factors into at least four fundamental areas. First, in its monetary policy assessments and macroeconomic modelling, by accelerating the development of new models and conducting theoretical and empirical analyses to monitor the implications of climate change and related policies for the economy, the financial system and the transmission of monetary policy through financial markets and the banking system to households and firms. Second, in the statistical framework, by developing new experimental indicators, covering relevant green financial instruments and the carbon footprint of financial institutions, as well as their exposures to climate-related physical risks. Third, in the adaptation of its operational framework in relation to the introduction of disclosure requirements for private sector assets, either as a new eligibility criterion or as the basis for differentiated treatment for collateral purposes and asset purchases, which could help speed up disclosure in the corporate sector. And fourth, in the

[32] See the ECB's press release "ECB presents action plan to include climate change considerations in its monetary policy strategy" of 8 July 2021.

adoption of other climate change criteria in these two latter areas and the assessment of the climate-related risks in the Eurosystem's balance sheet, the strength of which is indispensable to allow the ECB to achieve its monetary policy objectives and which I will now further discuss.

Climate stress tests of the Eurosystem balance sheet will be conducted from 2022 onwards based on the methodology of the ECB's ongoing economy-wide climate stress test. The ECB will be one of the first central banks to perform a review to gauge the extent to which credit ratings and asset valuations under our collateral framework reflect climate-related risk exposures.

In addition, the ECB will incorporate climate-related criteria into its corporate sector purchase programme (CSPP). First, the ECB has already started to take relevant climate change risks into account in its due diligence procedures for its corporate sector asset purchases in its monetary policy portfolios. In particular, it is envisaged that the ECB will adjust the framework guiding the allocation of corporate bond purchases to incorporate climate change criteria in the near future, by including the alignment of issuers with, at a minimum, EU legislation implementing the Paris agreement through climate change-related metrics or commitments of the issuers to such goals. Second, by the first quarter of 2023, the ECB will start disclosing climate-related information on the CSPP, thus complementing the disclosures on the non-monetary policy portfolios.

Looking ahead, the implementation of the action plan will be in line with progress on the EU policies and initiatives in the field of environmental sustainability disclosure and reporting, including the Corporate Sustainability Reporting Directive, the Taxonomy Regulation and the Regulation on sustainability-related disclosures in the financial services sector.

2.5. ADAPTING FORWARD GUIDANCE TO THE NEW STRATEGY

Following the strategy review, it was necessary to adapt the conduct of monetary policy to the new strategy. This process began with the change in the forward guidance on interest rates, announced on 22 July 2021.

The revised forward guidance incorporates the symmetric 2% inflation target and indicates that "the Governing Council expects the key ECB interest rates to remain at their present or lower levels until we see inflation reaching 2% well ahead of the end of our projection horizon and durably for the rest of the projection horizon, and we judge that realised progress in underlying inflation is sufficiently advanced to be consistent with inflation stabilising at 2% over the medium term." In this way, the ECB establishes conditions, not only in terms of the medium-term outlook for headline inflation but also of underlying inflation, before considering an increase in its interest rates. In addition, in accordance with the new strategy, the new forward guidance stresses that meeting these conditions "may also imply a transitory period in which inflation is moderately above target."

As ECB President Christine Lagarde explained following the announcement of the new forward guidance, "well ahead" basically refers to the mid-point of our projection horizon, which covers two to three years.[33] The conditions related to the medium-term inflation outlook, together with the condition linked to underlying inflation, seek to avoid premature tightening of monetary policy in the face of increases in inflation above target when they are deemed to be temporary or to owe to more volatile and exogenous components, such as energy prices.

Lastly, the forward guidance on all the other monetary policy instruments remained unchanged. In the case of the APP, the ECB Governing Council expects net purchases under the programme to end shortly before it starts raising the key ECB interest rates. This "chained forward guidance" implies therefore that the horizon for net asset purchases remains linked to the next interest rate hike.

The immediate reaction on the financial markets to the new strategy and the new forward guidance announcements was moderate in both cases. This suggests that both announcements were in line with investors' expectations and that investors need some time to fully adapt their monetary policy expectations to the new strategy.

2.6. THE ECB'S RESPONSE TO THE RECENT ECONOMIC AND INFLATIONARY DEVELOPMENTS

Finally, it is relevant to discuss how the ECB, within its new strategic framework, has responded to recent economic developments, and most notably to the rapid increase in inflation. Indeed, euro area inflation rose almost continuously throughout 2021, from 0.9% in February to 5% in December, mainly due to three drivers.

The first factor is the positive base effect linked to the recovery in prices after their sharp fall at the beginning of the pandemic. This base effect is already being reabsorbed, such that, as of spring 2022, it is not expected to make any additional contribution to inflation. A second factor is related to the strong recovery in demand after the gradual overcoming of the most critical phases of the pandemic. Looking ahead to 2022, it is to be expected that, as supply adapts to existing demand, some of the observed cost increases will be corrected. The third and last additional factor has been the prices of energy goods. The rise in gas prices in 2021 has been particularly pronounced, having very relevant effects on electricity prices. The gas futures markets point to a significant decline in gas prices from next spring onwards. However, it is very difficult to predict future developments in this market, in particular in a context of high and increasing geopolitical risks.

Looking ahead, most analysts and survey-based measures stand project inflation to remain elevated in 2022 but to remain at around 2% in 2023 and 2024. And market-based measures of medium and longer-term inflation expectations remain just below 2%.

[33] For more details, see the full transcript of the "Interview with the Governor published in Bloomberg" of 27 July 2021.

On the other hand, the economic recovery is expected to continue and growth to rebound strongly over the course of 2022, driven by robust domestic demand. In this context, output has exceeded its pre-pandemic level by the end of 2021, if the preliminary estimate of EMU GDP for the fourth quarter of 2021 is finally confirmed.

However this scenario of gradual decline in inflation and strong economic recovery is subject to considerable uncertainty. In the case of the economic outlook, risks are considered to be as broadly balanced over the medium term. The economy could perform more strongly than expected if households become more confident and save less than expected. By contrast, although uncertainties related to the pandemic have abated somewhat, geopolitical tensions have increased. Furthermore, persistently high costs of energy could exert a stronger than expected drag on consumption and investment. The pace at which supply bottlenecks are resolved is a further risk to the outlook for growth.

In the case of the inflation outlook, risks are tilted to the upside, particularly in the near term. A lower decline of energy prices that initially expected due, for example to geopolitical tensions, or a slower pace of resolution of supply bottlenecks would lead to higher price pressures. And these price pressures could feed through into higher than anticipated wage rises, leading to higher inflation.

In December, the Governing Council decided to continue reducing the pace of asset purchases step by step over the coming quarters, and ending net purchases under the pandemic emergency purchase programme (PEPP) at the end of March.

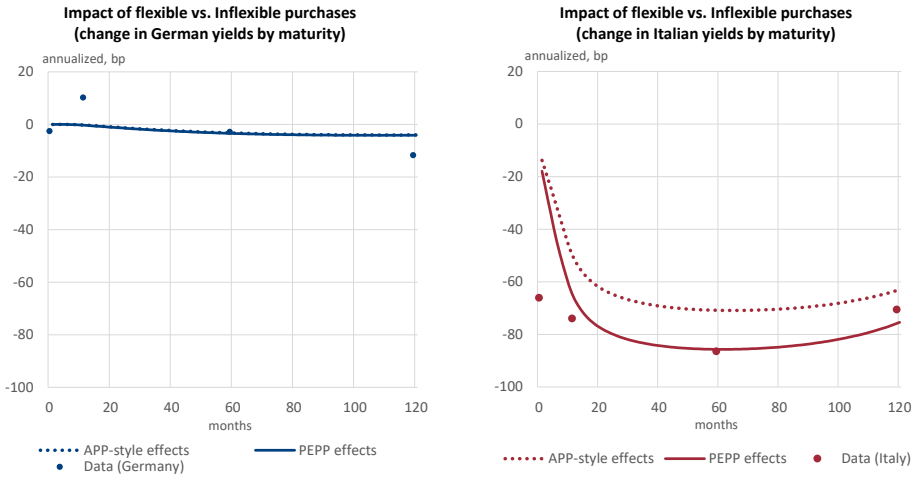
Second, the Governing Council took a number a measures aimed at preserving the flexibility in asset purchases after the end of PEPP net purchases. Indeed, the Governing Council established that flexibility in the design and conduct of asset purchases has helped to counter the impaired transmission of monetary policy and made its efforts to achieve its goal more effective. Thus, within the ECB mandate, under stressed conditions, flexibility will remain an element of monetary policy whenever threats to monetary policy transmission jeopardise the attainment of price stability.

In this vein, the Governing Council decided that, in the event of renewed pandemic-related market fragmentation, PEPP reinvestments can be adjusted flexibly across time, asset classes and jurisdictions at any time. The horizon of PEPP reinvestment was itself extended by one year, to at least the end 2024. And it was decided that net purchases under the PEPP could be resumed, if necessary, to counter negative, pandemic-related shocks.

Analysis by Banco de España staff has confirmed the importance of flexibility in the distribution of asset purchases to address cross-country fragmentation problems and make the ECB's asset purchases more effective.[34] According to this analysis, flexibility in PEPP purchases made it possible to significantly increase the programme's impact on sovereign yields in the euro area, especially in countries with higher risk premiums (see Chart 7).

[34] See Costain, Nuño and Thomas (2021), who study the transmission channels and the impact of PEPP purchases on the sovereign yield curves of different euro area countries. For an analysis of the macroeconomic and financial effects of the PEPP, see Aguilar et al. (2020) and Banco de España (2020, 2021).

Chart 7: Estimated impact of flexibility on asset purchases.



Sources: Costain, Nuño and Thomas (2021) "The term structure of interest rates in a heterogenous monetary union." Banco de España, forthcoming.

Third, the ECB confirmed its forward guidance, discussed in Section 5 that sets the conditions that must be fulfilled before the Governing Council raises interest rates and concludes (shortly before the rate increase) net asset purchases under the APP. As a recap, the Governing Council must see inflation reaching the 2% target over the second half of its projection horizon, and it must judge that sufficient progress in underlying inflation towards that goal has been made. This forward guidance establishes a state-contingent plan that will determine when the ECB will start tightening its monetary policy.

Fourth, beyond the asset purchase programmes, it was confirmed that the special conditions applicable under the third series of TLTROs are expected to end in June 2022.

Finally, in view of the current uncertainty, the Governing Council considers that it needs more than ever to maintain flexibility and optionality in the conduct of monetary policy. The Governing Council stands ready to adjust all of its instruments, as appropriate, to ensure that inflation stabilises at its 2% target over the medium term.

2.7. CONCLUSIONS

The ECB's new monetary policy strategy is the result of an in-depth review of all the relevant dimensions that may affect the conduct of monetary policy in the years to come. During this process, the ECB's Governing Council members, and the staff of all the Eurosystem central banks (including, naturally, the Banco de España), have participated in numerous seminars, presentations and debates addressing all the aspects of

this review, under the general premise, in the words of the ECB's President, of "leaving no stone unturned."

Bearing in mind that the ECB's main mandate is to maintain price stability, the monetary policy strategy review has allowed us to challenge our thinking, engage with numerous stakeholders, and reflect, discuss and reach common ground on how to adapt our strategy.

I am convinced the new strategy will constitute a strong foundation that will help guide us in the conduct of monetary policy and significantly improve our ability to fulfil the price stability mandate conferred upon the ECB.

REFERENCES

Acemoglu, D., Aghion, P., Bursztyn, L. and Hemous, D. (2012), "The Environment and Directed Technical Change," *American Economic Review*, Vol. 102, No 1, pp. 131-166.

Aguilar, P., Ó. Arce, S. Hurtado, J. Martínez-Martín, G. Nuño and C. Thomas (2020). "The ECB monetary response to the COVID-19 crisis," *Occasional Paper*, No 2026, Banco de España.

Alogoskoufis, S., S. Carbone, W. Coussens, S. Fahr, M. Giuzio, F. Kuik, L. Parisi, D. Salakhova and M. Spaggiari (2021), "Climate-related risks to financial stability," *Financial Stability Review*, May 2021, European Central Bank.

Altavilla, C., W. Lemke, T. Linzert, J. Tapking and J. von Landesberger (2021) "Assessing the efficacy, efficiency and potential side effects of the ECB's monetary policy instruments since 2014," *Occasional Paper* No 278, European Central Bank.

Andreeva, D. and M. García-Posada (2019). "The impact of the ECB's targeted long-term refinancing operations on banks' lending policies: the role of competition," *Working Paper* No 1903, Banco de España.

Arce, Ó., R. Gimeno and S. Mayordomo (2017). "Making room for the needy: the credit-reallocation effects of the ECB's corporate QE," *Working Paper* No 1743, Banco de España, forthcoming publication in *Review of Finance*.

Arce, Ó., M. García-Posada, S. Mayordomo and S. Ongena (2018). "Adapting lending policies in a "negative-for-long" scenario," *Working Paper* No 1832, Banco de España.

Arce, Ó., G. Nuño and C. Thomas (2019). "The Eurosystem's monetary policy following the end of net asset purchases," Analytical Articles, *Economic Bulletin* 1/2019, Banco de España.

Banco de España (2019). "Monetary policy design in the medium and long term," Chapter 3, *Annual Report 2018*.

— (2020). "The role of economic policies in the face of the pandemic at the international level," Chapter 3, *Annual Report 2019*.

— (2021). "The economic impact of the pandemic," Chapter 3, *Annual Report 2020*.

Barbiero, F., M. Boucinha and L. Burlon (2021). "TLTRO III and bank lending conditions," *Economic Bulletin*, Issue 6/2021, European Central Bank.

Brand, C., M. Bielecki, A. and Penalver (eds.) (2018). "The natural rate of interest: estimates, drivers, and challenges to monetary policy," *Occasional Paper* No 217, European Central Bank.

Brunnermeier, M. K. and Y. Koby (2018). "The Reversal Interest Rate," *NBER Working Paper* No 25406.

Cantelmo, A. (2020), "Rare disasters, the natural interest rate and monetary policy," *Working Paper* No 1309, Banca d'Italia.

Costain, J., G. Nuño and C. Thomas (2021). *The term structure of interest rates in a heterogeneous monetary union*, Banco de España, mimeo.

Darracq Pariès, M., G. Müller, and N. Papadopoulou (2020), "Fiscal multipliers with financial fragmentation risk and interactions with monetary policy," *Working Paper* No 2418, European Central Bank.

Dietz, S. and Stern, N. (2015), "Endogenous Growth, Convexity of Damage and Climate Risk: How Nordhaus' Framework Supports Deep Cuts in Carbon Emissions," *The Economic Journal*, Vol. 125, Issue 583, pp. 574-620.

Eggertsson, G. B., N. R. Mehrotra, and J. A. Robbins (2019). "A Model of Secular Stagnation: Theory and Quantitative Evaluation". *American Economic Journal: Macroeconomics*, No 11 (1), pp. 1-48.

European Central Bank (2021a) "Work stream on the price stability objective. The ECB's price stability framework: past experience, and current and future challenges," *Occasional Paper* No 269, European Central Bank.

European Central Bank (2021b) "Work stream on climate change. Climate change and monetary policy in the euro area," *Occasional Paper* No 271, European Central Bank.

Farhi, E., and F. Gourio (2018) "Accounting for Macro-Finance Trends: Market Power, Intangibles, and Risk Premia," *Brookings Papers on Economic Activity* Fall, pp. 147-250

Fiorentini, G., A. Galesi, G. Pérez-Quirós and E. Sentana (2018). "The rise and fall of the natural interest rate," *Working Paper* No 822, Banco de España.

Gagnon, E., B. K. Johannsen and D. López-Salido (2016), "Understanding the New Normal: the Role of Demographics," *Finance and Economics Discussion Series* 2016-080, Board of Governors of the Federal Reserve System.

Galesi, A., G. Nuño and C. Thomas (2017). The natural interest rate: concept, determinants and implications for monetary policy, Analytical Articles, *Economic Bulletin* 1/2017, Banco de España.

Gordon, R. J. (2015). "Secular Stagnation: a Supply-Side View," *American Economic Review*, No 105, pp. 54-59.

Holston, K., T. Laubach and J. Williams (2017). "Measuring the natural rate of interest: international trends and determinants," *Journal of International Economics*, No 108, pp. 59-75.

Mian, A., L. Straub, and A. Sufi. (2021). "What explains the decline in r*? Rising income inequality versus demographic shifts." *Proceedings of the 2021 Jackson Hole Symposium.*

Nordhaus, W.D. (2017), "Revisiting the social cost of carbon," *Proceedings of the National Academy of Sciences*, Vol. 11, No 7, pp. 1518-23.

Rostagno, M., C. Altavilla, G. Carboni, W. Lemke, R. Motto, A. Saint Guilhem and J. Yiangou (2019). "A tale of two decades: the ECB's monetary policy at 20," *Working Paper* No 2346, European Central Bank.

Vermeulen, R., Schets, E., Lohuis, M., Kölbl, B., Jansen, D-J. and Heeringa, W. (2018), "An energy transition risk stress test for the financial system of the Netherlands," *Occasional Studies* No 16-7, De Nederlandsche Bank.

3. IS THIS TIME DIFFERENT? INFLATION AND MONETARY POLICY IN THE NEW POST-COVID ENVIRONMENT

Sofía Rodríguez Rico[1] and Jordi Galimany Valldosera[2]

3.1. OVERVIEW

Following several decades of persistently low inflation and disinflationary forces in the euro area, 2021 constituted a material change. Inflation, a traditionally parsimonious and not particularly volatile variable, started off at low levels but rose within a few months reaching high inflation rates. A large number of the reasons for the upturn in inflation are of a transitory nature, although the presence of recurrent waves of the pandemic, the new variants of the virus and the asymmetry of the policies to halt infections in each country are making visibility extremely limited as we move forward.

Beyond these circumstantial phenomena, the Covid crisis is different because it has acted as a catalyst for major underlying and disruptive trends already present before the pandemic which are altering the economic structure, the price-setting mechanisms and, in turn, the environment in which economic policy operates.

Within this new environment, the choice of an optimal course of action for monetary policy is particularly complex. The review of the strategy conducted by the ECB can be viewed positively, as it gives it flexibility and enables it to approach its mandate of ensuring price stability from a holistic standpoint. The exit strategy of the ECB's policy in terms of its balance sheet will play a central role going forward, given the importance of credit supply, the need to preserve stable financial conditions and the resulting implications for inflation.

[1] Sofía Rodríguez is the Deputy Director General and Chief Economist at Banco Sabadell.

[2] Research Department at Banco Sabadell.

Moreover, given the current context of negative interest rates and the different vulnerabilities in the field of financial stability, the more prominent role given to fiscal policy should be highlighted as an important tool for economic stabilisation. In this regard, it is essential to have a new, simple and solvent European fiscal framework in place as soon as possible, allowing the monetary and fiscal policies to act as strategic complements.

On the following pages: (i) we analyse the developments related to inflation over the last year, reviewing the different price indicators and the factors behind the upturn, (ii) we analyse some major underlying trends and their implications for inflation and (iii) we reflect on the management of traditional economic policies, particularly monetary policy, in the new post-Covid environment.

Key Words: inflation, climate change, ecological transition, digitalisation, demographics, monetary policy, macroprudential policy, financial stability, fiscal policy.

Disclaimer: The views expressed in this article are the authors' and they do not necessarily represent the opinions of their current or former employers. The authors are grateful for the contributions of Banco Sabadell's Research Department in the writing of this article.

3.2. IS THIS TIME DIFFERENT? INFLATION AND MONETARY POLICY IN THE NEW POST-COVID ENVIRONMENT

During 2021 inflation reappeared on the macroeconomic scene and became one of the variables that drew the most attention. This time, unlike in previous years, the discussion did not focus on the extremely low inflation or even the risk of deflation, but quite the opposite. Within a matter of a few months, the inflation data in most countries recovered strongly, in some instances reaching multi-year highs, influenced by a set of shocks, varying in nature. The euro area was not immune to this trend and also witnessed significant price pressures, especially from the third quarter of 2021 onwards. The concerns about inflation were evident in the academic and policy debates and in the perceptions of the economic agents..

This article seeks to reflect on what has happened over the past year in terms of inflation and the future outlook, placing an emphasis on the new economic policy management in the post-Covid environment.

The first three sections analyse developments related to inflation over the past year, reviewing the different price indicators and the factors behind the upturn that has occurred, within the unique context of the Covid-19 crisis and the subsequent economic recovery. Subsequently, the fourth section looks ahead and analyses some broad underlying trends and their implications for inflation. Finally, the last section reflects on the management of the traditional economic policies, particularly monetary policy, in this new post-Covid environment and discusses to what extent they may constitute one of the most important determining factors for inflation from now onwards.

3.3. WHAT IS HAPPENING TO INFLATION? THE BEHAVIOUR OF PRICES IN 2021

Inflation acquired increasing prominence in 2021 and became one of the main topics of discussion globally. Different price indicators ranging from consumer prices to production and import costs rose sharply. Inflation clearly surprised consensus expectations to the upside, reaching extremely high rates in some cases.

In the euro area, inflation rose almost constantly throughout 2021 and the Harmonised Index of Consumer Prices (HICP) stood at 5.0% in December, the highest rate since the beginning of the series in 1997. The majority of the increase can be explained by the energy component, following the sharp increase in the price of natural gas in Europe, which went up as much as six-fold between late summer and early autumn. Core inflation also increased, albeit to a lesser extent. Moreover, production and import prices stood at record highs, similarly significantly influenced by the energy component.

All this took place against a backdrop of global tensions in commodity prices and maritime transport. In addition to natural gas, prices of other energy commodities also increased significantly, such was the case of oil, which recorded a seven-year high. Prices of industrial metals such as copper, steel and lithium and agricultural commodities also rose sharply. In turn, the freight costs for sending a container from China rose from around two thousand US dollars to more than fourteen thousand US dollars.

With regard to the labour market, in contrast to what was observed in other relevant countries, the increase in inflation in the euro area did not translate into sustained wage growth. Thus, in the third quarter of 2021 the negotiated salary index published by the European Central Bank (ECB) stood at its lowest level since the early 1990s.

The long-term expectations for inflation remained anchored in the euro area. Thus, although the five-year forward expectations published by the ECB's Survey of Professional Forecasters rose, they did so starting from low levels and remained somewhat below the ECB's inflation target. Similarly, different measures of inflation market risk premia and the 5y5y inflation swap rose close to the central bank's inflation target but remaining below its historical average until 2013.

Taking an international perspective, inflation also rose sharply in the United States in 2021, reaching its highest level since the early 1980s. The main difference between the United States and the euro area was that the inflationary pressures were very broadly based across the components in the former. Another difference was that wage pressures started to emerge in the United States, not so much due to second-round effects but rather issues such as labour shortages. Meanwhile, inflation expectations increased the most in the United Kingdom. Finally, in emerging economies, where inflation tends traditionally tends to be more volatile, the inflation peaks that were recorded were generally not as remarkable as those in the United States from a historical perspective.

In summary, despite the significant increases in prices observed globally in the post-Covid economic recovery, in the euro area most of the inflation upturn in 2021 can

be explained by the energy component and no undesirable dynamics were observed in core inflation, nor in inflation expectations nor in salaries in aggregate.

3.4. THE RELEVANCE OF THE ECONOMIC REOPENING PATTERN IN THE WAKE OF THE COVID-19 CRISIS FOR INFLATION

Analysing the peculiarity of the Covid-19 crisis and the subsequent economic reopening is fundamental when it comes to understanding the causes of the price increases in 2021.

The health crisis has constituted a shock that is unprecedented in recent economic history. The exceptional nature of this crisis can be observed from various dimensions. Firstly, because of its very nature as a health issue and the containment measures that had to be taken. Secondly, due to the severity of the shock globally following the different waves of the pandemic. Thirdly, owing to the complexity of the channels through which it has impacted the economy. The crisis has been characterised by parallel combined shocks in terms of supply, demand and uncertainty. Another exceptional feature of this crisis has been the asymmetry of the impacts for the different economic agents, countries, sectors, business segments, etc. Finally, the crisis has also accelerated underlying and highly disruptive trends that were already underway, including digitalisation and sustainability-related issues.

The response from the different global economic authorities has also been exceptional, and it can generally be described as adequate and effective. This has made it possible to mitigate the costs of the crisis and lay the foundations for the economic recovery. The actions put in place have focused on tackling the health emergency, major fiscal and monetary stimuli and support provided through supervisory and competition policies.

The deployment of the vaccines and the impetus of the economic policy have led to a vigorous global economic reactivation and a rapid recovery in demand. This represents an initial significant factor behind the upturn in inflation in 2021. In aggregate terms, this exit from the crisis can be described as intense. Thus, in October the IMF forecasted world economic growth of 5.9% in 2021, compared with a fall of -3.1% in 2020. However, countries have experienced different exit speeds, depending on the degree of control of the pandemic, on how well they have managed the health crisis and on the intensity of the economic stimulus in each region.

The recovery has also been characterised by abrupt changes in the composition of GDP in some regions. For example, private consumption has been a major contributor to the economic recovery in the United States. In China, in contrast, the recovery has been driven by the significant momentum of exports, while consumption has remained largely weak.

In terms of demand, major factors are the changes in consumer preferences and behaviours, due to both the lockdown measures adopted by governments to control the pandemic and the fear of infection. The main impacts of the pandemic on consumer behaviour include an increase in the amount of time consumers have spent at home

and the consequent reduction in their mobility, as well as the acceleration of the digitalisation process. These changes have been detrimental to the demand for certain services, especially transport, tourism, hospitality and leisure, while boosting the demand for goods such as those related to digitalisation (computers, electronics, etc.) and home decoration and refurbishment.[3]

In terms of supply, the policies to halt Covid-19 infections in China and Southeast Asia during 2021 have remained very restrictive for longer than in the developed countries while the vaccination process has progressed more slowly in these countries. Thus, throughout 2021 some governments in the region have continued to respond to any appearance of Covid-19 cases with closures of production plants and port terminals, with the consequent impact on the global supply chains and prices of many goods.

Finally, with regard to the labour market, the pandemic and the policies to manage it have also generated disruptions in the workforce supply, creating labour shortages in some areas. On the one hand, the restrictions on international mobility have hindered the movement of the workforce. On the other, there have also been changes in the skills required of workers, due to the asymmetry of the recoveries of the sectors mentioned above. In addition, some economies such as the United States have also witnessed significant falls in the workforce from which they are yet to recover.

In summary, the price increases in 2021 are broadly a consequence of several forces. Firstly, the broad and effective economic policy response has led to a sharp recovery in demand in the post-crisis period, significantly channelled into the consumption of goods. The above has been compounded by supply-related disruptions and labour shortages in certain areas.

3.5. THE SPECIFIC FACTORS BEHIND THE RECENT BEHAVIOUR OF PRICES AND THEIR DEGREE OF TEMPORARINESS

This section analyses the main factors that have played a relevant role in explaining the behaviour of prices in 2021, as outlined in section 3.3.

3.5.1. BASE EFFECTS

The Covid-19 crisis has generated measurement problems in the consumer price index baskets, mainly due to the lack of data resulting from the complete closure of activities and the changes in the weightings owing to changes in consumption habits. This has affected the reliability of the published data, particularly during the initial stages of the crisis.

[3] To complement this, it should be highlighted that there have also been some services that have benefited from the Covid-19 crisis, such as streaming TV service subscriptions, gaming, online commerce and spending on online education and healthcare (KPMG, 2020; Deloitte, 2021). However, spending on transport, tourism, hospitality and leisure is much more significant and the downturns have led to a significant drop in aggregate service consumption.

In addition to this, the prices of many goods and services displayed a significant downturn at the start of the crisis. In the euro area, inflation moved into negative territory in the final part of 2020. This generated significant base effects that account for part of the rise in inflation observed in 2021. Energy prices are among those that have been most affected by this situation.

These base effects have also come about as a result of certain economic policies implemented during the crisis phase. The most paradigmatic example is the reduction of VAT in Germany in 2020 and the subsequent reversal in 2021.

Base effects are temporary by their very nature, and they are expected to start to reverse from early 2022 onwards.

3.5.2. PENT-UP DEMAND AND ACCUMULATED SAVINGS DURING THE PANDEMIC

The closures of economic activity and lockdowns adopted to contain Covid-19 led to a significant slowdown in consumption in 2020. However, the support granted by the economic policy cushioned, to some extent, the impact on disposable income and on the balance sheets of households. In the euro area, the savings rate rose above 25%, whereas in previous years it fluctuated between 12% - 13% of households' disposable income. During the reopening, changes in consumer preferences mainly channelled this pent-up demand and accumulated savings towards consumption of goods rather than services, generating supply-related tensions along the supply chains in various sectors.

This factor should fade away in the future as the pent-up demand is gradually absorbed, the savings rate returns to more conventional levels and the improvement in the health situation leads to greater mobility and a gradual recovery of the services that have been punished most by Covid-19. In any event, in some areas the changes in consumer preferences may be more permanent (as in the case of digitalisation), as a result of which demand for these kinds of goods may remain structurally higher and maintain some inflationary pressures on the sector.

3.5.3. SECTORS WITH DIFFICULTIES IN ADAPTING THEIR PRODUCTION STRUCTURES TO AN ENVIRONMENT OF HIGHER DEMAND

Within the context of a sharp increase in demand for goods, many sectors have been unable to adapt quickly to this new situation and the inflationary pressures have been accentuated. One of the sectors in which this has been most pronounced is maritime transport, which is characterised by: (i) a market structure with high business concentration; (ii) a reduction in the entry of new vessels into the market in recent years, which has led to capacity limits being reached; (iii) the lack of investment in some infrastructures in the United States, after years in which the freight volumes have displayed weakness as a result of the trade war with China; and (iv) the increased demand for mar-

itime transport due to the reduced availability of air freight during the pandemic. All this has contributed to the extraordinary rise in transport costs outlined in section 3.3.

Another sector in a similar situation is that of semiconductors, key inputs in all goods with electronic components, ranging from computing and consumer electronics to the car sector, which has a rising chip content. The supply of semiconductors has also been unable to adapt quickly to this new environment, due to the lack of production capacity and the high costs and the long timeframes for setting up of new plants. The car industry has so far been the one most affected by this shortage of chips. Semiconductor manufacturers re-allocated some of their production capacity to other goods when the car industry shut down production due to the coronavirus. This led to a bumpy recovery of the industry in 2021, with further production closures. In terms of prices, this situation was the main cause of the sharp rise in prices of second-hand cars in countries such as the United States in the wake of the problems with the production of new cars.

This difficulty in meeting supply demands should improve as we move forward and ease the related inflationary pressures, although the calendar envisaged will depend on the idiosyncrasies of each sector. For example, maritime transport should start easing from the first half of 2022 onwards, once the Christmas and Chinese New Year periods (February 2022) are over. In contrast, the outlook is more long-term in the semiconductor and automotive sectors, and, generally speaking, a normalisation of the situation should not be expected until the end of 2022 or even 2023.

3.5.4. LABOUR SHORTAGES IN SOME SECTORS

Some sectors have reported labour shortages as one of the reasons limiting their output in 2021 and also contributing to higher wage dynamics in some economies.

These labour shortages are related to the reduced mobility of workers globally due to the restrictions put in place to control Covid-19. As well as the difficulties that some population groups had in returning to their jobs, due to issues such as increased family responsibilities within the context of the pandemic and fears of infection in jobs with a high degree of social contact. The significant fiscal stimulus implemented has also been seen as a cause of this shortage, to the extent that it may have discouraged people from returning to work. There are also other idiosyncratic factors, such as the sharp rise in retirements following the pandemic in the United States and Brexit in the United Kingdom. In the euro area companies have also reported greater difficulties in finding staff, but the situation is not as problematic as in the United Kingdom and the United States.

Two of the areas that have been most affected are logistics and the primary sector. In the field of logistics, the sector has reported labour shortages at different points in the supply chain, from port personnel to road freight transport, in different countries, but especially in the United Kingdom and the United States. Meanwhile, in the primary sector several countries have also experienced a shortage of seasonal workers, due to the reduced international mobility of workers as a result of pandemic-related restrictions. In the future, within the context of a pandemic which is increasingly under control, the

lack of staff should improve with a recovery in international mobility, although there is a risk that some of these shortages may be more structural in nature.

3.5.5. THE ENERGY SHOCK

One of the shocks that has had the greatest impact in 2021 is the energy shock, which has caused the significant rise in prices outlined in section 3.3. For Europe, the circumstantial causes of this situation can be framed within a context of increased demand for energy and of problems of a geopolitical nature in relation to supply, such as the lack of gas from Russia. However, this period can also be interpreted as an example of the potential problems (such as a more fragile energy mix) that climate change and the ecological transition may bring.[4]

In addition to the direct impact on energy and electricity prices, this energy shock has had repercussions throughout the supply chain. This has led to several closures of factories producing more energy-intensive basic materials, such as steel and aluminium, thus contributing to the rises in the prices of industrial metals. Another consequence is the increase in prices of fertilisers, which in turn has had implications for food prices. Although energy prices in Europe may ease once the winter is over, in the coming years it is plausible to envisage scenarios of increased energy price volatility associated with the progress made in the ecological transition.

3.5.6. OTHER SHOCKS OF A DIFFERENT NATURE

Beyond the energy shock, other kinds of events generating supply disruptions and accentuating problems in different phases of the supply chain have also been particularly relevant in 2021. From climatic events (droughts in Brazil that increased the prices of some agricultural commodities), geopolitical problems (tensions between China and Australia that pushed up the price of coal in China) and regulatory issues (the drive towards the energy transition in China that added upward pressure on commodity prices and other industrial inputs), to one-off but highly disruptive accidents, such as the ship running aground in the Suez Canal, which completely blocked this key shipping route.

In summary, many of the reasons for the rise in inflation in 2021 are of a temporary nature, although some of them are to some extent linked to the global evolution of the pandemic. With the successive waves of infections, there is a risk of these phenomena extending over time or new surprises occurring, further complicating the economic outlook. The most recent example is the emergence of the new Omicron variant of Covid-19. However, in a scenario in which the pandemic plays a less central role, these factors can be expected to be resolved fairly quickly, allowing the inflationary pressures to ease, while the focus in terms of inflation will shift to other underlying trends (such

[4] See section 3.6.1 for a debate on the impact on inflation of climate change and the ecological transition and 3.6.3 for a discussion about China's progress in this regard.

as digitalisation and climate change) and, above all, economic policy management, which will be discussed in the following sections.

3.6. OTHER UNDERLYING TRENDS

Having analysed the recent evolution of inflation in the previous sections, this section reviews the potential impacts on inflation of other major underlying trends that may gain prominence in the coming years and be of greater significance for the overall evolution of the economy, including: (i) climate change and the policies for a transition towards a greener and more sustainable economy; (ii) technological advances and digitalisation; (iii) the economic policy framework in China; (iv) the potential reconfiguration of the global supply chains; and (v) demographics and inequality. Each section concludes with the implications of these future trends with regards to inflation and economic policy in Europe.

3.6.1. CLIMATE CHANGE AND ECOLOGICAL TRANSITION POLICIES

The physical risks related to climate change (flooding, fires, droughts, etc.) and the effects generated by ecological transition policies may have a direct impact on inflation dynamics (ECB, 2021d).

The studies undertaken agree that there is a need for more ambitious climate policies than the present ones, given that the physical risks are expected to generate stronger and more persistent impacts on economic growth, financial stability and inflation in the medium and long term than the environmental policies. Despite this, green transition policies can also affect economic activity and generate price volatility, especially in their early stages.

The physical risks of climate change and their relationship with inflation

The economic and financial impacts of the physical risks have increased significantly in recent years, leading to upward pressures and greater price volatility in key activities of the economy.

The agricultural sector is the one in which the link between climate risks and inflation is most explicit. Agricultural prices are placed under upward pressure by lower food production due to extreme natural phenomena and desertification.

Climatic events also influence prices in the energy sector. Energy demand increases when more extreme temperatures are recorded. Moreover, supply becomes more volatile and, in some cases scarcer, such as in the lower hydroelectric generation registered in Brazil in 2021 due to the severe droughts.

In addition, extreme climatic events can also lead to the loss of physical capital and interruptions in the productive capacity and value chains of certain industries, which can cause, among other effects, a temporary upward impact on the prices of the affected products.

The effects of ecological transition policies on inflation

Ecological transition policies will bring about a major transformation in several sectors of the economy and affect their production, demand and price dynamics. In particular, this transition, depending on how it is undertaken, could generate periods of volatility and upward pressures on prices.

The climate goals in the coming decades will require significant investment in the energy sector. The future decline in the importance of the technologies of fossil fuels, especially coal and oil, will have to be accompanied by an increase in the share of renewable energies in the energy mix.

One of the vulnerabilities of this transition, which could lead to spells with sharp price rises, is that global investment in renewable technologies still falls far short of what is required to meet the decarbonisation targets, while investment in hydrocarbons has declined in recent years. In the long term, the development of the existing renewable technologies and the availability of new ones, as well as their improved economies of scale, efficiency and integration into the energy system, should reduce these risks.

The ecological transition will also increase pressure on demand and the prices of some commodities. In this regard, the International Energy Agency (IEA, 2021b) and the International Monetary Fund (IMF, 2021) have highlighted the significant mismatch between current supply and the demand for certain metals required to meet the global climate goals. This is a particularly sensitive issue in the cases of lithium, cobalt, nickel and copper, which are key to the development of renewable facilities and electric vehicles. As a result, the International Monetary Fund believes that the prices of these metals could reach very high levels if the climate investment required to achieve a net zero emissions scenario by 2050 is undertaken.

The importance of climate policies becomes even more relevant in the case of China. Among other factors, this is due to the setting of highly ambitious climate targets for the country in the coming decades, which should allow it to reduce its huge dependence on coal, as well as the impacts that its decisions generate on a global scale. In this regard, China's push towards the ecological transition has contributed, along with other factors, to the energy shortages and sharp rises in the prices of energy and some industrial metals in the second half of 2021.

Some of the climate policies implemented to date are also inflationary in nature. One example of this is the carbon pricing initiatives conducted by different regions. The aim of the scheme is to create the right price signals to progressively reduce emissions and encourage investment in cleaner alternatives.

The Network of Central Banks and Supervisors for Greening the Financial System (NGFS, 2021) has indicated that in many countries the implementation of carbon pricing tends to increase energy costs in the short term, leading to modest increases in inflation before a return to the previous trend. In this regard, an analysis conducted by the Bank of Spain (2021c) estimates that the increase in the price of emission allowances in the European Union accounts for around 20% of the rise in the wholesale price of

electricity in Spain between December 2020 and June 2021, which added a few tenths of a percentage point to the harmonised index of consumer prices.

Carbon pricing mechanisms are expected to continue gaining prominence in the coming years. The European Commission, through the *Fit for 55* proposal, is seeking to extend and tighten the current emissions system and adopt a carbon border adjustment mechanism to tax imports of the most polluting products. Both measures could be inflationary in nature, at least in their initial stages.

Ultimately, the speed, intensity and international coordination of climate change policies will be relevant factors in explaining the effects of these measures on inflation. Their incorrect design or an overly rapid adoption could lead to increased price volatility and inflationary effects associated with immature technologies or pressure on commodity prices. However, a lack of ambitious measures or their late adoption would lead to a significantly worse long-term scenario in many respects, including inflation.

3.6.2. TECHNOLOGICAL ADVANCES AND DIGITALISATION

Within the current context of high inflation rates, it is worth pausing to examine the potential role to be played by the new digital technologies, whose diffusion has led to major structural changes while receiving a significant boost during the pandemic. Economic policy can also leverage and harness the benefits of technology to bring greater control over periods of inflation.

The academic literature (Charbonneau et al., 2019 presents a broad summary) agrees on at least three channels that could account for the disinflationary effects of the new digital economy: (i) the decrease in price of goods and services related to ICT (information and communications technology); (ii) the impact of digital business models on competition; and (iii) the increase in work productivity.

The link between digitalisation and inflation that can be traced is of interest for the formulation of the appropriate policy responses. However, the measurement problems inherent in the new digital economy, the extraordinarily dynamic nature of the phenomenon and, in particular, the opposite effects of digitalisation on the goods and labour markets make it difficult to draw categorical conclusions with regards to its impact on inflation.

The fall in prices of ICT goods and services

The fall in the costs of ICT products and their huge diffusion over the last two decades have contributed to lowering the overall price indices, according to official statistics. However, some authors such as Reinsdorf and Schreyer (2019) and Goolsbee and Klenow (2018) have also calculated substantially larger reductions, which could be explained as follows: (i) the price indices do not include changes in the quality of products, and this problem is accentuated in the case of ICT goods; and (ii) many digital services, such as social media, the online press and streamed music, are offered free of charge and therefore fall outside the perimeter of the price indices and national accounts.

Moreover, the increase in e-commerce is also indirectly associated with lower inflation, as some studies argue (Yi and Choi, 2005; Lorenzani and Varga, 2014; and ECB, 2020b). From a theoretical standpoint, the reason lies in the lower costs of the online sales channel versus the traditional offline channel and the greater price transparency for consumers, contributing to greater discipline among producers with the power to set prices.

In this regard, the pandemic has increased the proportion of people shopping online and spending on the internet. It appears plausible that this ratio will henceforth remain permanently higher than before the pandemic and that it will also expand to other aspects of consumption. In this regard, based on the pre-pandemic evidence, the indirect disinflationary effect of digitalisation via e-commerce could potentially increase.

The impact of digital business models on competition

The evolution of inflation is also influenced by the degree of market competition. In this regard, digitalisation generates effects on the level of prices in opposing directions. On the one hand, some authors have identified disinflationary effects, given that internet-derived technologies can blur certain entry barriers, increase market contestability, improve price transparency and reconfigure the relevant market in terms of the geography and product (OECD, 2017). On the other hand, the nature of the Covid-19 crisis has significantly enhanced the market (and hence the higher price-setting) power of the technological companies, a dynamic that could affect prices in the opposite direction. This trend, an already dominant one before the pandemic with effects such as the divergence of profit margins and productivity across companies (Andrews, Criscuolo and Gal, 2015), is showing signs of continuation, judging by indicators such as the increase in subscriptions to digital platforms, the greater trade in digital goods and services and the evolution of the share prices of technology-based companies in financial markets. In addition, the growth of e-commerce and algorithm-based technologies during the pandemic is also leading to a greater capacity for (tacit) collusion, due to the greater comparisons of prices among producers (ECB, 2020b).

In summary, the increased concentration in these sectors resulting from the pandemic, coupled with other underlying forces such as the network effects and the economies of scale and scope, and their greater role as gatekeepers of digital access (e.g., through the use of digital platforms) raise questions about the aggregate effect they may have on inflation in the medium term. Until now, the downward pressures on prices due to the increased transparency dynamics explained above appear to be dominant (Charbonneau et al., 2019).

Digitalisation and productivity

Like other major crises, the Covid-19 pandemic appears to be acting as a catalyst for greater adoption of new technologies and changes in work organisation that could have positive impacts in terms of productivity. Theoretically, these developments should allow for a containment of inflationary pressures. This discussion is of interest in Europe, given that the increase in productivity in recent decades has not been outstanding and

has actually been particularly low or even non-existent in the economies in the south of the continent.

Until now, the effects of the digital technologies on productivity have not been entirely conclusive, although positive effects do appear to predominate in the long term. According to Autor (2015), the aggregate effect depends on whether the introduction of new technologies generates complementary relationships or worker substitution and on the final balance in terms of the labour factor usage. The approach of this analysis is relevant when it comes to examining the effects of Covid-19 on productivity. In the short term, many activities have shifted to virtual environments, affecting the ways we interact (teleworking, video conferences, online banking, e-commerce, etc.), from which gains in productivity can be extracted. But others have been severely disrupted, particularly the value chains with a greater physical presence (transport, hospitality, accommodation activities, shopping centres, etc.). In this regard, if digitalisation replaces certain activities (e.g., business trips and related activities due to increased teleworking) in the medium and long terms, the impact on productivity will only be positive if there are positive effects on other (existing or future) labour-intensive activities. Consequently, the effect on inflation via this channel after the pandemic also remains an unknown factor.

The European digitalisation policy

Within the current context of high inflation rates and strong demand, digitalisation will take centre stage as part of the necessary supply-related policies to be deployed in response to the current imbalances.

According to the different international rankings, Europe lags significantly behind in terms of what is known as "digital adoption" when compared to leading international benchmarks such as the United States, South Korea and Singapore. However, two speeds can be observed; while some European countries are well-positioned and comparable to these benchmarks, others are moving more slowly, in positions that do not match with their per capita income levels.

The reasons behind this heterogeneity in the penetration of the new technologies among the different European countries are diverse, but for decades, they all have in common an absence of a common industrial policy to ensure cross-border technological progress at the same pace in the different countries. Instead it has been left up to the the different domestic strategies. Definitely related to the above is the fact that Europe also displays very different patterns in the evolution of productivity in each country. These divergences in terms of digital adoption and growth fundamentals can generate asymmetries in the evolution of inflation and constitute an obstacle, for example, to the proper transmission of economic and, in particular, monetary policy throughout the territory.

However, in recent years Europe has paid greater attention to digital convergence with the launch of different initiatives, including the digital single market and strategies in areas such as artificial intelligence and IoT (the Internet of Things). Moreover, the Covid-19 pandemic is bound to constitute a turning point. The launch of the Next Generation EU programme earmarks significant funds for the digitalisation of the different

countries. It is expected to steer the European economies towards a better territorial balance in terms of technology and lay the foundations for future growth without significantly affecting inflation.

3.6.3. CHINA'S ROLE IN GLOBAL INFLATION

China's influence on global inflation has become pivotal over the past two decades. China's contribution to global output has risen from 7% in 2000 (according to IMF data adjusted to take purchasing power parity into account) to 18% in 2020, making it the most important exporter in the world.

In order to assess and rank China's potential impacts on global inflation, it should be borne in mind that the country has a significant influence on price dynamics, in terms of demand, historically the most influential factor (Bundesbank, 2013), as well as in terms of supply and industrial policy.

We should bear in mind four key stages in the process towards China's development and its influence on global inflation: (i) China's trade opening in the 2000s; (ii) the highly expansionary economic policy implemented by the country following the 2008 global financial crisis; (iii) the change in China's economic growth model in the middle of the last decade; and (iv) the post-Covid world, in which there is a drive towards the ecological transition and a potential reconfiguration of the global supply chains.

From China joining the WTO to the post-Covid world

China's economic modernisation initiated by Deng Xiaoping in the late 1970s culminated decades later with China joining the WTO (World Trade Organisation) in 2001. This date is regarded as a milestone in the country's history that gave rise to the significant momentum of the globalisation that came in its wake. China's favourable demographic pyramid and low labour costs were instrumental in boosting its manufacturing industry and in ensuring its leadership of global trade. During the early part of the century, evidence suggests that China affected relative price formation on a global scale (Bank of Canada, 2010), lowering those related to low value-added manufacturing and raising those related to commodities (due to their high consumption, which fuelled the country's industrial boom).

Subsequently, following the 2008 global financial crisis, China, like the developed countries, implemented a strong fiscal stimulus and promoted, in particular, infrastructure construction that generated high demand for commodities. For example, the price of copper, after falling by around 70% in 2008, recorded new all-time highs within less than three years.

Later, towards the middle of the last decade, it became clear that China's economic growth model was running out of steam. The demographic pyramid was changing (the working-age population began to shrink in 2015) and labour costs were rising, which meant that some low value-added industries were moving their production to other Asian countries that still enjoyed the advantage of cheap labour. In addition, a situation

of over-investment and overcapacity in production had been reached in many sectors, especially those related to heavy industry. This situation gave rise to significant downward pressure on production prices and, in turn, China's export prices. This was the period in which inflation and the inflation expectations in the major developed countries began to persistently stand at "excessively" low levels.[5]

Once we arrive to a post-Covid world, China's industrial and regulatory policies designed to meet the needs of the new growth model appear to be playing a particularly important role in influencing global inflation. These policies may be becoming more important than the demand dynamics that have traditionally predominated. China is downplaying the pace of its economic growth and focusing on sustainability issues, including the goals of greater social equity and environmental improvement.

Its policies aimed at driving its ecological transition, coupled with the disruptions of climate change, have led to higher (and more volatile) inflation in commodities such as coal, steel and gas. Thus, for example, the closures of production plants to limit electricity consumption in sub-sectors such as silicon, cement, steel, etc., which have taken place this year have occasionally led to global shortages of some materials, pushing up their prices. This has been an obvious example of the kind of disruption associated with the green transition outlined in section 3.6.1.

Moreover, we should highlight the influence that China may have had in keeping the prices of technological products under control throughout 2020, despite the strong demand for them following the outbreak of the pandemic. China has generally been promoting technological development in the country for some time, with the aim of gaining security and self-sufficiency within a context of major political confrontation. Thus, its greater production capacity in this area has enabled it to facilitate greater elasticity in the global supply of technological products.

Finally, the issue related to the reconfiguration of the global supply chains beyond China in the post-Covid environment could also have significant effects on global inflation, at least temporarily. However, while this scenario cannot be ruled out, any evidence of the direct impact of relocations on inflation is still very limited, as discussed in section 3.6.4.

A new role for China with rising risks of inflation

In short, we might think that, among the different factors by means of which China may be influencing global inflation in the post-Covid world, its policies related to the ecological transition may be predominant. Not only does it have the capacity to drive commodity prices upwards (as has been observed); it can also generate greater volatility in commodity prices in the future.

The euro area, particularly sensitive to industrial policy in China

China's industrial policies and their impact on global inflation have the potential to

[5] The fall in oil prices in late 2014 and the euro area's slow exit from the sovereign debt crisis were also particularly important in pushing down inflation and inflation expectations from 2015 onwards.

affect Europe in particular, given its greater external openness. Between 1999 and 2019 trade grew from 31% to 54% of GDP in the euro area, while in the United States it only rose from 23% to 26% (C. Lagarde recently quoted this data at the IMF's annual conferences).[6] Moreover, according to the European Commission, around half the products identified as strategic and highly dependent on external trade for the European Union come from China (European Commission, 2021b).

If China's industrial policies do effectively lead to persistently higher commodity price volatility, this would move inflation expectations upwards and become a particularly sensitive issue for economies such as the euro area, where the domestic price dynamics are less intense, thus complicating monetary policy management.

3.6.4. THE RECONFIGURATION OF THE GLOBAL SUPPLY CHAINS AND INDUSTRIAL RELOCATION POLICIES

The debate with regard to the reconfiguration of the supply chains has been driven by the shortages of basic supplies during the pandemic, particularly in the health sector, the bottlenecks in different sectors due to the economic recovery and, since before Covid-19, the increased geopolitical rivalry between the United States and China and the vulnerability of the value chains to extreme climatic events.

The reconfiguration of the value chains is not only related to the relocation of production in the country of origin (reshoring), but also to strategies to bring the supply chains closer (nearshoring), regionalisation and the diversification of imports. Depending on the type of strategy, the implications in terms of inflation can be very different. Furthermore, government policies to secure the supply chains and incentivise relocations may also have a significant impact.

Evidence of industrial relocation and its effects on inflation

The empirical evidence reflects some industrial relocation to the United States and Europe (reshoring),[7] albeit on a very limited scale and, therefore, with little effect on the European economy (European Parliament, 2021). In the case of Europe, these effects are further mitigated by the fact that most of the relocations have taken place within the EU itself in sectors with a high technological component. With regard to relocations, together with governmental policies to achieve greater autonomy, automation is the main driver of change (UNCTAD, 2020). According to Eurofound (2019), automation and the existence of idle capacity in the country of origin probably explain why there is no evidence of a positive impact of applying relocations. This is relevant because it appears to indicate that the impact on salary pressures and inflation could be limited even in the event of industrial relocation.

This evidence has been temporarily confirmed with the Covid-19 outbreak. Thus, there

[6] ECB (2021f).

[7] Asian Development Bank et al. (2021).

has been no increase in relocations and the reconfiguration of the value chains has been due more to market and efficiency mechanisms than to the reaction to non-economic shocks (e.g., Covid-19, geopolitics and climate change).[8] The main factor bringing change has been the increase in labour costs in China and the more prominent role for other countries in Southeast Asia. It is, therefore, difficult to infer major implications for inflation, as the costs of relocating to third countries may be offset by the lower labour costs.

With regard to the EU's economic policy in this area, it is worth mentioning the relaxation of the state aid framework for several projects of common interest at a European level, including the development of batteries and semiconductors on European soil. The aim is to reduce external dependence and promote autonomy in sectors that are regarded as strategic. The Commission has also proposed diversifying imports, ensuring fair trade (i.e., not distorted by subsidies), improving the single market, innovation and the role of competition policy and increasing investment through Next Generation EU funds.

The impact on inflation of policies to promote relocation

Beyond the impact on prices of the changes in the value chains, it is vital to examine whether the measures taken by governments to promote industrial relocation and increase resilience may generate inflationary pressures. According to the European Parliament (2021), the most common measures include innovation and industrial policies designed to increase domestic productivity, although they are not the only ones.

In the European Union the relocation strategy includes policies involving increased scrutiny of direct foreign investment, support for SMEs and industrial policy[9] while maintaining an open economy.[10] However, the perimeter of activities potentially affected by the governmental policies seeking greater autonomy in the EU is very limited (137 products accounting for 6% of EU goods imports - European Commission 2021b). These products are key, particularly for energy-intensive industries (such as some commodities), the healthcare system (pharmaceutical ingredients) and the carrying out of the ecological and digital transformations.

Thus, the effect on inflation of the policies adopted by the EU to promote relocation is difficult to determine, given the emphasis on maintaining an open economy. In fact, a higher level of investment, increased production and redundancy in key activities (such as the health sector) may even help to contain the price dynamics, especially in the medium term. In any event, the perimeter of the goods identified as strategic by the EU is very limited and evidence of relocations beyond this perimeter is scarce.

In summary, it is difficult to estimate the impact of the reconfiguration of the global value chains on inflation due to the confluence of numerous factors. Evidence of the direct impact of relocations on inflation is still very limited. However, moving forward, political pressure to encourage the reconfiguration of the value chains and industrial

[8] Meng and Ye (forthcoming) and Qiang et al. (2021).

[9] Objective of the Recovery Plan adopted in May 2020 by the European Council and the European Commission.

[10] Objective stressed by the European Council in October 2020.

relocation cannot be ruled out, given a more assertive geopolitical environment and a fragmentation of trade in certain sectors (e.g., technology). Within this context, assessing the potential impact of the changes to the EU's industrial, competition and trade policies on inflation will be key.

3.6.5. DEMOGRAPHICS, INEQUALITY AND INFLATION

The period between the 1980s and the 2000s were years in which the world economy underwent its biggest positive shock in terms of labour supply, as a result of the baby boom in the developed countries, the incorporation of women into the labour market and the entry of China and Eastern European countries into the global supply chains. According to the theses of some authors,[11] this may have imposed structurally disinflationary tendencies on the western countries, which would also account for the structural fall in interest rates in those years. Juselius and Takáts (2018) illustrate this in their article. The results of their study show a clear impact of the demographic structure on inflation. In particular, the authors conclude that a higher dependency ratio (calculated as the ratio between the younger and older populations in comparison with the working-age population) is associated with greater inflationary pressures.

With a view to the future, the main conclusion to be drawn from these articles is that the positive demographic shock seen in recent decades has begun to reverse; the western world is ageing, and China's working-age population has ceased to increase. For example, in the euro area the working-age population peaked in 2009 at around 220 million and has undergone a slow but progressive decline since then. The problems that this will generate for labour supply may also be accentuated by the shortage of suitably qualified personnel to cope with the advance of digitalisation, which may lead to changes in the structure and needs of the labour market that are difficult to manage.

Moreover, the Covid-19 crisis led to a sharp drop in the number of births in 2020, with Spain being one of the countries where this fall was sharpest (a 20% fall in the number of births between December 2019 and December 2020). Although fertility may recover in the coming years, there is a risk that the recovery will be slow or partial, accentuating the problems of population ageing (Harper, 2021).

We are consequently entering a period in which the pressures of these factors on inflation may also reverse upwards. Given the foreseeable continuation of the trends that have been identified, this suggests that the disinflationary pressure resulting from the populational structure may be behind us.

Demographics or inequality, which factor is more relevant?

The study of inequality and its consequences is also attracting the attention in academic and economic policy circles. One example of this is the Jackson Hole talks last

[11] See, for example, Goodhart, C. and Pradhan, M. (2017 and 2020), Juselius, M. and Takáts, E. (2018) and Rehn (2021).

August, which specifically focused on the issue of inequality ("Macroeconomic policy in an uneven economy.")

The growth of income (and wealth) inequality has a negative impact on economic growth (see, for example, Dabla-Norris et al. 2015), particularly if it occurs between the lower income brackets and the rest of the population (OECD 2014). Thus, weak and relatively depressed private consumption entails lower demand-led inflationary pressures. There are various primary reasons for the growth of inequality and they have been written about extensively. Some of the most common ones are major trends in macroeconomics that have also been discussed in this article, such as increased globalisation, the offshoring of productive activities and the technological advances seen in recent decades (see, for example, Taylor 2020).

Mian et al. (2021) have attempted to argue that this increase in inequality has been more important than demographic changes in explaining the structural fall in interest rates in recent decades (and possibly inflation too, although this is not mentioned by the authors). This is an academic debate that is likely to continue for years to come.

In any event, both demographics and inequality have been major trends that have existed over the past decades, but they may now be beginning to reverse. While demographic trends are more easily predictable, changes in the evolution of inequality are more difficult to anticipate, as they depend not only on macroeconomic factors, but also on the mindset of economic policy. There is a chance that the Covid-19 crisis may have triggered a certain shift towards a more sensitive economic policy with regard to social and inequality issues, although it is certainly too soon to observe any effect in that direction.

In summary, while some of these trends still have an uncertain impact on inflation (e.g., digitalisation), others look set to generate upward pressures on prices in the coming years, including all those related to climate change, China's new role in the global economy and demographics. Thus, beyond the shocks observed in 2021, economic policy and, above all, monetary policy will have to get prepared for this new environment, a topic that is covered in the following section.

3.7. POST-COVID MONETARY POLICY CHALLENGES, INTERACTION WITH OTHER POLICIES AND IMPLICATIONS FOR INFLATION

The first sections analyse the behaviour of inflation in the post-Covid environment, while section four reviews other long-term trends in the evolution of inflation and discusses how Covid-19 and the policies implemented to combat it may constitute an accelerator of these trends. At this point a key element remains to be considered in this composition, one that seems to be decisive for the future of inflation, namely the economic policy management in the new post-pandemic environment.

3.7.1. THE CHANGE IN THE ECB'S MONETARY POLICY STRATEGY

In January 2020 the ECB decided to launch the review of its monetary policy strate-

gy. The process ended in July 2021.[12] The reflection was initiated after a period in which inflation had stood persistently below the ECB's target and the central bank had been actively expanding and using its toolbox, in the presence of a debate about the extent to which the limits of its monetary policy were being reached.

Under this review, the central bank set the inflation target at 2.0% in the medium term (the target was previously for inflation to be close to, but below 2.0%). Furthermore, it set a symmetrical target, namely that "negative and positive deviations of inflation from the target to be equally undesirable." The ECB acknowledged the importance of taking into account the implications of the Effective Lower Bound (ELB) in terms of the need for forcefulness and persistence of the monetary policy in certain environments and the appropriateness of temporarily allowing inflation to move above the target.

Moreover, as part of its change in strategy, the ECB considered that the HICP should incorporate the costs related to home ownership, as this would represent the relevant inflation rate for households much better.

The central bank also considered that the main monetary policy instrument is setting official interest rates. However, in the event that rates should lie close to the ELB, the ECB indicated that it will also use other instruments such as forward guidance, asset purchases and longer-term refinancing operations. In addition, the central bank left the door open to using new instruments to achieve the price stability objective if necessary.

Finally, the ECB pointed out that financial stability is a necessary condition for price stability[13] and acknowledged that climate change will also have significant implications for prices. It therefore approved an action plan in this area seeking to incorporate climate change considerations into its monetary policy framework, including collateral policies and corporate debt purchases.

Once the revised monetary policy strategy framework had been adopted, the ECB modified its forward guidance on interest rates. In particular, it established that three conditions must be met before a rise is made in interest rates. Firstly, inflation should reach 2.0% well before the end of its projection time frame. Secondly, inflation should stand at 2.0% for the remainder of the time frame on a lasting basis. Thirdly, the ECB should consider that the progress made with regard to underlying inflation is compatible with a stabilisation of inflation at 2.0% in the medium term.

The need and relevance of the ECB's review of its monetary policy strategy are barely debatable in light of the structural changes that have taken place in the euro area economy since the 2008 crisis, the environment of low inflation experienced by the region and the remarkable evolution of the set of instruments used by the central bank in recent years. Nor should we forget the context of fiscal austerity in the euro area in the years following the sovereign debt crisis and the intensive reformulation of the regula-

[12] See: "The ECB's monetary policy strategy statement". https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_statement.es.html.

[13] See section 3.7.2 for a discussion in this regard.

tory, supervisory and institutional framework for credit institutions in the region. Moreover, the purpose and appropriateness of the exercise were also endorsed by the fact that other central banks such as the Federal Reserve have launched a similar exercise.

Looking ahead, in any event, in view of the rise in post-Covid inflation and the ongoing discussion as to whether we are facing a new environment for inflation, a legitimate question arises with regard to whether this new framework will allow the ECB to effectively respond to the price dynamics in the future.

Following the analysis included in the previous sections of this paper and whilst (i) no undesirable dynamics regarding inflation expectations and wages were observed at an aggregate level in the euro area during the post-Covid reopening,[14] (ii) some of the factors that have caused inflation to rise significantly in 2021 are of a temporary nature and associated with the evolution of the pandemic and should gradually fade away,[15] (iii) the broad underlying trends still have mixed implications for inflation and, in any case, the more inflationary ones will gain traction in the medium term[16] and that (iv) the uncertainty surrounding the pandemic has not ceased, the flexibility that the ECB has been endowed with after the change in strategy seems particularly appropriate for managing inflation in the euro area within the post-Covid context. In particular, the ECB's medium-term orientation will take into account that "the appropriate monetary policy response to a deviation of inflation from the target is specific to each context and depends on the origin, magnitude and persistence of the deviation."

The discussion is not necessarily equivalent for the Federal Reserve, both in terms of what is occurring in the United States with prices and the labour market and what comprises the change in monetary policy strategy there. The United States' central bank changed its price stability target to total average inflation over a given (as yet undefined) period and shifted to placing greater emphasis on ensuring that the growth of employment is broad and inclusive. Consequently, the debate with regard to the appropriateness of the Federal Reserve's change in framework is substantially more open than the one involving the ECB.[17]

3.7.2. POST-COVID FINANCIAL STABILITY AND THE INTERACTION BETWEEN MONETARY AND MACROPRUDENTIAL POLICIES

As part of the review of its monetary policy strategy, the ECB stated that "financial stability is a pre-condition for price stability and vice versa" and announced that it will take financial stability considerations into account in its monetary policy deliberations in a more structured way. This highlights the complementary nature of the monetary

[14] See section 3.3 of this paper.

[15] See sections 3.4 and 3.5 of this paper.

[16] With some upward risks stemming from the effects associated with, for example, climate change and the demographic evolution. See section 3.6 of this paper.

[17] Rajan reflects on the above in his article titled "Monetary and Inflationary Traps" dated 23 November 2021.

and macroprudential policies, while acknowledging that the first line of defence against financial stability lies in macro and micro-prudential policies.

Fully incorporating the interdependencies between the economic, monetary and financial analyses into monetary policy deliberations not only makes sense from a conceptual standpoint but also appears to be the relevant approach due to its holistic nature and in view of the exceptional nature of the pandemic environment.

However, the appropriateness of this approach does not release it from its complexity. In addition to the economic dysfunctions associated with the pandemic and the difficulties encountered in analysing the evolution of prices, there is a need to ensure appropriate financial conditions for economic stability.

As 2021 draws to a close, this issue is far from being a trivial one and it may well open up new horizons, given the sharp increase in the size of the central banks' balance sheets, the profound changes that have taken place in international banking and non-banking financing mechanisms, the high global levels of public and private debt, the rapid evolution of digital forms of money and so on.

Even within a narrower focus, the challenges for the ECB in the field of financial stability and its interaction with monetary policy are clear. Firstly, because the playing field of financial conditions is a global one and it is difficult to isolate the financial conditions of one particular region.

Secondly, because significant vulnerabilities can be observed in the global capital markets. In particular, the financial stability reports of different authorities have long been highlighting the narrow valuations of certain assets, liquidity and depth problems in capital markets, increased risk-taking by non-banking financial sector agents and so on. Moreover, to the extent that some of these problems concern the micro-structure of the capital markets and a lack of resilience in the design, several of the solutions that are being proposed involve regulatory changes, as a result of which it seems that they cannot be implemented immediately.

Thirdly, because we are now witnessing a shift in the global monetary policies towards greater tightening. In 2021 the official rates were raised by the central banks of most emerging countries and there were also increases in developed economies such as in the United Kingdom, New Zealand and Norway. The discussion regarding the timing and intensity of this shift has reached the major central banks, including the ECB, which largely determine the global financial conditions as a whole, while their actions are crucial to ensure financial stability.[18]

On the positive side, the reassessment of the agents' expectations with regard to future official rate rises in 2021 has not led to major capital market disruptions or extreme spells of risk aversion. Another positive factor is that the ECB is able to differentiate itself from the Federal Reserve and the Bank of England in terms of the moment at which the markets are scheduling the increases in official interest rates. Communication is essential in this regard. Finally, the financing structure in the euro area means that

[18] See section 3.7.3.

financial stability relies more heavily on the supply of bank credit than in other regions and, clearly, the banking environment is very different from the one that prevailed in the previous crisis.

In short, viewing financial stability as a prerequisite for price stability, as the ECB has done, seems to be an approach to post-Covid monetary policy that is as sensible as it is complex.

Within this context, macroprudential policy plays a key role as a way of addressing some of the sources of systemic risk. Several countries in the euro area are activating macroprudential tools to curb the exuberance of certain segments, such as the property market or borrowing by highly leveraged corporations, and thus smoothing the economic cycle. In any event, the European and global macroprudential frameworks are incomplete, due, among other issues, to the absence of progress on specific macroprudential measures for the non-banking financial sector, one of the objectives for the coming months of the Financial Stability Board (FSB), the European Commission and the European Systemic Risk Board (ESRB).

Effective macroprudential policy management, with specific and rapid measures wherever the main sources of systemic risk are located and effective interaction between monetary and macroprudential policy, appear essential during the Covid-19 pandemic so as to contribute to the simultaneous management of any financial stability and inflation risks that may emerge. The fact that the two policies remain independent, with well-defined mandates and sophisticated and sufficient tools, provides a guarantee that they will be able to fulfil their objectives.

As regards to the specific risks jeopardising financial stability, it seems that making diligent progress and focusing on strengthening market infrastructures and the Capital Markets Union in the wake of Brexit and on some of the weaknesses identified in part of the non-banking financial sector will help to contain the financial risks and facilitate the work of monetary policy in its overseeing of price stability in this complex pandemic environment.

3.7.3. CREDIT SUPPLY AND THE MONETARY POLICY TRANSMISSION MECHANISM

In terms of the supply of credit and the monetary policy transmission channel, this crisis has clearly constituted a paradigm shift in comparison with the previous one.

Since the global financial crisis, there have been major developments in the operating environment in which the banks function, in the institutional field and in terms of European integration, including regulation and prudential requirements, risk management models, remuneration systems, consumer protection, corporate governance and questions of conduct, resolving the problems of troubled entities and so on.

Thus, credit institutions as a whole have faced up to the pandemic with healthy balance sheets, higher levels of capital and liquidity, and of better quality, lower leverage and reinforced structures. The nature of the measures that the health authorities had

to adopt (in terms of restrictions on mobility and forced closures) led to a sudden halt in economic activity and conferred a leading role to banks in the management of the situation, given that they make up an essential infrastructure for the payment mechanism and the financing of the economy.

Fortunately, the health crisis was prevented from turning into a financial crisis. Thus, in this crisis, with sound banking institutions operating within a reliable framework, the sovereign-bank loop operated as a virtuous circle, allowing the banks to provide a response to the financial needs of families and businesses in the euro area and largely preserving the flow of credit and liquidity to the system. The state-guaranteed debt clearly formed a key part of the toolbox, which included other important mechanisms such as moratoria, non-refundable direct aid and tax exemptions.

Given the importance of the bank credit supply, its link to stable and benign financial conditions[19] and the implications of credit for inflation,[20] the ECB's balance sheet exit strategy policy will play a central role as we move forward.

In this field, the difficulty for the ECB seems to lie not only in choosing the moment to withdraw the balance sheet support from a macroeconomic standpoint and with an eye on inflation, but also in being able to design this withdrawal in a capillary way and with micro-logic, taking into account a complex range of regulatory and financial micro-structure issues.

In particular, the structural increase in the demand for liquid assets on commercial banks' balance sheets for regulatory reasons, the class of assets used to meet regulatory liquidity ratios and the relationship with the ECB's balance sheet policies, the negative interest rates that hinder the commercial banks from attracting stable funding via long-term deposits, the discussion regarding the structural shortage of risk-free euro assets and the dependence on collateral for the proper functioning of the wholesale financial markets are factors to be taken into account in the central bank's balance sheet policy going forward.

Good news in this regard is Ms Lagarde's statement at the October policy meeting acknowledging the importance of avoiding a cliff edge involving TLTROs.

3.7.4. THE IMPORTANCE OF FISCAL POLICY AS A TOOL FOR ECONOMIC STABILISATION AND THE COORDINATION BETWEEN MONETARY AND FISCAL POLICY IN THE RESPONSE TO THE COVID-19 CRISIS

A substantial and positive change in the euro area during this crisis has been the increased coordination between fiscal and monetary policy. In fact, it can be argued that the Covid-19 crisis created a space for cooperation between the two, which were used as strategic complements to each other; given the environment of negative interest rates potentially close to the ELB, very low inflation and the sovereigns' significant financing

[19] See section 3.7.2.

[20] See, for example, in the references of the papers by Calza and Sousa (2005), Ciccarelli, Maddaloni and Peydró (2010), Gross and Semmler (2016) and Orphanides (2013).

needs, their joint action brought about effective economic stabilisation and contributed, together with the vaccine rollouts, to come out of the crisis.

Within this area for cooperation between the two policies, we should acknowledge the timely, effective and indispensable monetary policy management during the Covid-19 crisis, particularly in view of the severity of the periods of capital market stress in the first half of 2020. However, the implementation of an expansionary fiscal policy in the euro area has functioned as a dominant force in the economic stabilisation and as an indispensable lever in preventing any long-term effects of the crisis.[21] Given the current interest rate environment and the different vulnerabilities in the field of financial stability, it can also be argued that, going forward, fiscal policy will be as important a determining factor for the future of inflation as monetary policy.

By the end of 2021, despite the rise in prices reviewed in section 3.3, there is still a consensus that the time is not yet right to abandon either the cooperation between the two policies or the fiscal drive to boost demand in the euro area.[22] The lack of tension in core inflation, salaries and inflation expectations in the euro area confer comfort for the authorities and investors in financial instruments in euros that does not exist to the same extent in other regions.[23]

Even if inflation in the euro area continues to move upwards, without denying that the interaction between fiscal and monetary policy is not risk-free, it seems that at the present time being excessively concerned about potential fiscal dominance may be counterproductive. Firstly, because restricting monetary policy for this reason may prevent the central bank from responding appropriately to periods of financial instability[24] in the event of sudden, disorderly and non-fundamental increases in sovereign risk.

Secondly, because it is important to highlight the progress made with regard to the credibility and solidity of the EU's current institutional framework in recent years and to continue along the path of completing and strengthening the institutions before the economic context means some policies have to be pitted against others.

While the international financial crisis set in motion a major reinforcement of the financial structure in the euro area,[25] the current crisis has brought unprecedented progress in the fiscal area.

Mechanisms such as the SURE and, above all, the Next Generation EU funds are

[21] Bearing in mind that the ELB formed part of the scenario in the euro area at the time when the pandemic began.

[22] Paschal Donohoe, the Chairman of the Eurogroup, pointed out that: "The Eurogroup remains unanimous in the need for a supportive budgetary policy in 2022. Put simply, there will be no premature withdrawal of support."

[23] Following the November inflation data in the USA, President Biden declared that "inflation hurts Americans' pocketbooks, and reversing this trend is a top priority for me (...) and I want to re-emphasise my commitment to the independence of the Federal Reserve to monitor inflation, and take steps necessary to combat it."

[24] Which could become more frequent in the future, as discussed in section 3.7.2.

[25] With the positive effects discussed in section 3.7.3.

welcome, as they complement the European institutional framework in the fiscal area. Moreover, the focus on adopting economic reforms and structural policies to support potential growth, productivity and investment also constitutes a step forward, to the extent that it helps to raise the long-term equilibrium real interest rates and mitigates the likelihood of periods in which monetary policy lies close to the ELB.

In addition, the European Commission has proposed an overhaul of the set of fiscal rules, in such a way that, among other goals, it makes the fiscal policy more counter-cyclical and allows it to become a much more predominant tool for macroeconomic stabilisation.[26] It will be important for all these reforms to conclude with improved European institutional strength in the fiscal area, reducing the complexity of the current patchwork of rules, equipping governments with tools to pursue a higher potential GDP, imposing credible commitments to regain fiscal space and preserving the independence of each policy.

In summary, the complexity of the intertwined factors simultaneously at play in the post-pandemic environment suggests that, in the economic policy arena, the main defence mechanism for the euro area requires a robust institutional framework. Public authorities with well-defined mandates, a full range of tools and good cooperation between them appears to be the best recipe for stabilising the economy in an uncertain environment subject to rapid structural transformations. The discussion with regard to what might happen to inflation in the future is not beyond the scope of this reflection.

Under this premise, the review of the strategy conducted by the ECB can be viewed positively, as it gives it flexibility and enables it to approach its mandate of ensuring price stability from a holistic standpoint that fully analyses the interrelations between economic, monetary and financial analyses.

With regards to fiscal aspects, the introduction of a pan-European stimulus policy with a focus on potential growth is also a positive development. Moreover, cooperation between the monetary and fiscal policies seems to have worked properly in an environment with negative interest rates. However, progress on a simple set of fiscal rules is urgently needed to provide countercyclical flexibility while preserving the long-term sustainability of public debt. It should not be forgotten how important fiscal policy will be in terms of inflation as we move forward.

Nevertheless, financial stability will be a future concern and require close collaboration between the monetary authority and the macroprudential authorities. Moreover, given the importance of credit supply, from now onwards, it appears crucial for the management of the central bank's balance sheet to take into account the structural demand for liquidity for regulatory reasons and the different inter-dependencies in relation to the assets that function as collateral within the system.

[26] Paolo Gentiloni, European Commissioner for Economic Affairs, declared during the presentation of this review in February 2020 that: "We also need to enable more anti-cyclical fiscal policies, given the increasing constraints faced by the ECB."

3.8. IS THIS TIME DIFFERENT? INFLATION AND ECONOMIC POLICY IN THE NEW POST-COVID ENVIRONMENT

The short and simple answer to the question as to whether what has happened to inflation in 2021 is different from previous occasions is obvious: Yes. Simply because the unique nature of the health crisis and the complexity of the economic reopening make everything different this time.

Following several decades of persistently low inflation and disinflationary forces in the euro area, 2021 constituted a material change. Inflation, a traditionally parsimonious and not particularly volatile variable, started off at low levels but rose within a few months reaching high rates.

Behind the set of forces driving inflation in the short term is the exceptional nature of the reopening following the Covid-19 crisis. A large number of the reasons for the current mismatch between supply and demand are of a transitory nature, although the presence of recurrent waves of the pandemic, the new variants of the virus and the asymmetry of the policies to halt infections in each country are making visibility extremely limited as we move forward. Thus, on this occasion, the choice of an optimal course of action for monetary policy is particularly complex.

Fortunately, the flexibility that the ECB has been given following the change of strategy with a "medium-term objective that takes into account that the appropriate monetary policy response to a deviation of inflation from the target is specific to each context and depends on the origin, magnitude and persistence of the deviation" seems particularly appropriate for managing inflation in the euro area in the post-Covid context.

However, beyond phenomena of a transitory nature, this crisis is different because it has acted as a catalyst for major underlying and disruptive trends already present before the pandemic which are altering the economic structure, the price-setting mechanisms and, in turn, the environment in which economic policy operates. Although some of them still have an uncertain impact on inflation (e.g., digitalisation), others look set to give rise to an increase in prices in the coming years, including all those related to climate change, China's new role in the global economy and demographics.

The complexity of the intertwined factors simultaneously at play in the course of inflation and the environment of extreme uncertainty suggest that, in the economic policy arena, the main defence mechanism for the euro area may require continuing to progress in the design and robustness of the institutional framework and cooperation between authorities.

Given the current context of negative interest rates and the different vulnerabilities in the field of financial stability, the more prominent role given to fiscal policy should be highlighted as an important tool for economic stabilisation. In this regard, it is essential to have a new, simple and solvent European fiscal framework in place as soon as possible, allowing the strategic complements between the monetary and fiscal policies to be exploited when the situation so requires.

Bearing in mind the importance of credit supply, the need to preserve stable financial conditions and the implications of this for inflation, the exit strategy of the ECB's policy in terms of its balance sheet will play a central role as we move forward.

The pandemic will eventually lose its central role and, to the extent that, as has been the case so far in parallel to the crisis, bold economic management is maintained, progress is made in strengthening the European economic institutions and the foundations are laid for the ecological and digital transformation of our economy, we will emerge from the crisis with more solid tools to ensure everyone's health and well-being.

SOURCES

Accenture (2020) "The big value shift."

Asian Development Bank, Research Institute for Global Value Chains at the University of International Business and Economics, World Trade Organization, Institute of Developing Economies - Japan External Trade Organization and China Development Research Foundation (2021): "Global Value Chain Development Report 2021. Beyond Production."

Amiti, M., Redding, S. J. and Weinstein, D. E. (2019): "The Impact of the 2018 Tariffs on Prices and Welfare." Journal of Economic Perspective, 33(4), pp. 187-210.

Andrews, D., C. Criscuolo and P. N. Gal. (2015): "Frontier Firms, Technology Diffusion and Public Policy: Micro Evidence from OECD Countries." OECD Report: The Future of Productivity, Main Background Papers.

Autor, D. (2015): "Why are there still so many jobs? The history and future of workplace automation," Journal of Economic Perspectives, Vol. 29, no. 3, pp. 3-30.

Bank of Canada (2010): "The Effect of China on Global Prices."

Bank of England (2021): "Tackling climate for real: the role of central banks." Speech by Andrew Bailey.

Bank of Spain (2021a) "Economic Bulletin 2/2021." Quarterly report on the Spanish economy.

Bank of Spain (2021b): "Economic Bulletin 3/2021." Quarterly Report on the Spanish Economy, text box 7.

Bank of Spain (2021c): "Recent developments in Spanish retail electricity prices: The role played by the cost of CO2 emission allowances and higher gas prices." Occasional paper 2021.

Bank of Spain (2021d): "Financial Stability Report." Autumn 2021.

Bank of Spain (2021e): "Climate Risk, Energy Transition, Financial Risks and Global Economic Growth." Energy Prospectives IESE Workshop. Speech by Pablo Hernández de Cos.

Bank of Spain (2021f): "Inflation: recent developments, outlook and monetary policy implications." 12th Expansión-KPMG Financial Sector Meeting. Speech by Pablo Hernández de Cos.

Barclays (2021) "What if inflation returns? Part 2."

Barefoot, K., D. Curtis, W. Jolliff, J.R. Nicholson and R. Omohundro (2018): "Defining and Measuring the Digital Economy." Bureau of Economic Analysis, U.S. Department of Commerce.

Bartsch, E., Benassy-Quere, A., Corsetti, G. and Debrun, X. (2021): "It's All in the Mix: How Monetary and Fiscal Policies Can Work or Fail Together," Geneva Reports on the World Economy, no. 23, CEPR Press.

BBVA Research (2021): "Spain. High inflation, key factors looking forward."

Beckman, J., Ivanic, M., Jelliffe, J.L., Baquedano, F.G. and Scott, S.G. (2020): "Economic and Food Security Impacts of Agricultural Input Reduction Under the European Union Green Deal's Farm to Fork and Biodiversity Strategies," U.S. Department of Agriculture, Economic Research Service.

Bénassy-Quéré, A., Brunnermeier, M., Enderlein, H., Farhi, E., Fratzscher, M., Fuest, C., Gourinchas, P. O., Martin, P., Pisani, F., Rey, H., Véron, N., Weder di Mauro, B. and Zettelmeyer, J. (2018): "Reconciling risk sharing with market discipline: A constructive approach to euro area reform." CEPR Policy Insight no. 91.

Biden, J. (2021): "Statement by President Biden on Today's Economic News." Statement by the President of the United States, J. Biden, on 10 November 2021.

Bundesbank (2013): "China's role in global inflation dynamics."

Byrne, D.M. and Corrado, C.A. (2020) "The Increasing Deflationary Impact of Consumer Digital Access Services." Federal Reserve Board FEDS Notes

CaixaBank Research (2021): "NGEU European Funds: the spring board for the digital leap." Monthly report issue 459, September 2021.

Calza, A. and Sousa, J. (2005): "Output and inflation responses to credit shocks: are there threshold effects in the euro area?" ECB Working Paper, no. 481.

Charbonneau, K., Evans, A., Sarker, S. and Suchanek, L. (2017): "Digitalization and Inflation: A Review of the Literature." Bank of Canada.

Ciccarelli, M., Maddaloni, A. and Peydró, J. L. (2010): "Trusting the bankers. A new look at the credit channel of monetary policy." ECB Working paper series, no. 1228.

Dabla-Norris, E., Kochhar, K., Suphaphiphat, N., Ricka, F. and Tsounta, E. (2015): "Causes and consequences of income inequality: A global perspective." IMF Staff Discussion Note, SDN/15/13.

Darvas, Z., Martin, P. and Ragot, X. (2018): "The economic case for an expenditure rule in Europe." Bruegel.

Deloitte (2020): "Consumidor año I d.C: El nuevo consumidor después del Covid-19."

Deloitte (2021): "A spring in consumers' steps. Americans prepare to get back to their spending ways."

Donohoe, P. (2021): "Euro area recovery from Covid-19 - economic policy reflections and challenges ahead." Speech by Paschal Donohoe, Chairman of the Eurogroup, at the IMF's Annual Conference.

ECB (2020a): "Macroprudential policy issues," Financial Stability Review, Ch. 5.

ECB (2020b): "Virtually everywhere? Digitalisation and the euro area and EU economies." Occasional Paper Series.

ECB (2021a): "Economic Bulletin." Various editions.

ECB (2021b): "The implications of savings accumulated during the pandemic for the global economic outlook." Economic Bulletin issue 5/2021, text box 1.

ECB (2021c): "Monetary - fiscal policy interactions in the euro area," Occasional Paper Series, no. 273.

ECB (2021d): "Climate change and monetary policy" Contribution by Isabel Schnabel to the IMF's Finance and Development magazine.

ECB (2021e): "Unconventional fiscal and monetary policy at the zero lower bound." Speech by Isabel Schnabel.

ECB (2021f): "Globalisation after the pandemic." Per Jacobsson Lecture by Christine Lagarde, President of the ECB, during the IMF's Annual Conference.

ECB (2021g): "The macroeconomic impact of the Next Generation EU instrument on the euro area." Occasional Paper Series, no. 255.

ECB (2021h): "The shadow of fiscal dominance: Misconceptions, perceptions and perspectives." Speech by Isabel Schnabel at the Centre for European Reform and Eurofi Financial Forum on "Is the current ECB monetary policy doing more harm than good and what are the alternatives?."

ECB (2021i): "Monetary policy and inequality." Speech by Isabel Schnabel at the conference titled "Diversity and Inclusion in Economics, Finance, and Central Banking." 9 November 2021.

ECB (2021j): "The future of the EU fiscal governance framework: a macroeconomic perspective." Speech by Philip R. Lane.

ECB (2021k): "Overview of the monetary policy strategy."

ECB (2021l): "Monetary policy decisions." Press release dated 22 July 2021.

ECB (2021m): "Overview of the monetary policy strategy." July, 2021.

ECB (2021n): "Monetary policy decisions." Press release. 22 July 2021.

Eurofound (2019): "Reshoring in Europe: Overview 2015-2018."

European Commission (2021a): "Opening and closing remarks by Commissioner Simson at the European Parliament plenary session on energy prices."

European Commission (2021b): "Strategic dependencies and capacities." Commission Working Document, May 2021.

European Fiscal Board (2018): "Annual Report 2018."

European Parliament (2021): "Post Covid-19 value chains: options for reshoring production back to Europe in a globalised economy." Policy Department for External Relations.

EY Parthenon (2021): "Future Consumer Index. Deconstruyendo al consumidor post-Covid y su apuesta por el consumo sostenible."

Fernández Sánchez, M.J. (2021): "¿Vuelve la inflación?." Article published in Funcas-Blog, 8 June 2021.

Ferrara, L. (2019): "What is behind the change in the gap between services price inflation and goods price inflation?" ECB Economic Bulletin, Issue 5/2019

Goldman Sachs (2021): "The past and the future of China's role in global inflation."

Goodhart, C. and Pradhan, M. (2017): "Demographics will reverse three multi-decade global trends." BIS Working Papers no. 656.

Goodhart, C. and Pradhan, M. (2020): "The Great Demographic Reversal: Ageing Societies, Waning Inequality, and an Inflation Revival."

Goolsbee, A. and Klenow, P.J. (2018): "Internet rising, prices falling: measuring inflation in a world of e-commerce." National Bureau of Economic Research (NBER).

Gross, M. and Semmler, W. (2016): "Inflation targeting, credit flows and financial stability in a regime change model."

Group of Thirty Working Group on Treasury Market Liquidity (2021): "U.S. Treasury Markets: Steps Toward Increased Resilience."

Harper, S. (2021): "The impact of the Covid-19 pandemic on global population ageing." Journal of Population Ageing volume 14, pages 137-142.

Hernández de Cos, P. (2021): "La inflación: evolución reciente, perspectivas e implicaciones de política monetaria." Speech given at the 12th Expansión-KPMG Financial Sector Meeting. 29 November 2021. Bank of Spain.

IMF (2021): "Energy Transition Metals." IMF Working Paper no. 21/243.

Inter-Agency Working Group for Treasury Market Surveillance (2021): "Recent disruptions and potential reforms in the U.S. Treasury market: A staff progress report."

International Energy Agency (IEA, 2021a): "World Energy Outlook."

International Energy Agency (IEA, 2021b): "The Role of Critical Minerals in Clean Energy Transitions."

International Renewable Energy Agency (IRENA, 2021): "Renewable power generation costs in 2020."

Juselius, M. and Takáts, E. (2018): "The enduring link between demography and inflation." BIS Working Paper no. 722.

Kamin, S. B., Marazzi, M. and Schindler, J. W. (2006): "The Impact of Chinese Exports on Global Import Prices." Review of International Economics 14 (2): 179–201.

KPMG (2020): "Consumers and the new reality: 4 key trends."

Lorenzani, D. and Varga, J. (2014): "The economic impact of digital structural reforms," European Economy - Economic Papers, no. 529, Directorate General. European Commission.

McKinsey (2021): "The consumer demand recovery and lasting effects of COVID-19."

Meng, B., and Ye., M. (forthcoming publication): "Smile Curves in Global Value Chains: Foreign- vs. Domestic-owned Firms; the U.S. vs. China. Structural Change and Economic Dynamics."

MGI (2020): "Risk, resilience, and rebalancing in global value chains." McKinsey Global Institute.

Mian, A., Straub, L. and Sufi, A. (2021): "What explains the decline in r*? Rising income inequality versus demographic shifts."

Network of Central Banks and Supervisors for Greening the Financial System (NGFS, 2021): "NGFS Climate Scenarios for central banks and supervisors."

Nickell, S. (2005): "Why Has Inflation Been so Low since 1999?" Bank of England Quarterly Bulletin 45.

OECD (2014): "Trends in Income Inequality and its Impact on Economic Growth." OECD Social, Employment and Migration Working Papers, no. 163.

OECD (2017): "Key Issues for Digital Transformation in the G20."

Orphanides, A. (2013): "European crisis and its implications for global inflation dynamics." BIS Papers, no. 70.

Pain, N., Koske, I. and Sollie, M. (2006): "Globalisation and Inflation in the OECD Economies." OECD Economics Department Working Paper no. 524.

Piatanesi, B. and Arauzo-Carod, J.-M. (2019): "Backshoring and nearshoring: An overview." Growth and Change, 50(3), pp. 806-823.

Qiang, C. Z., Liu, Y. and Steenbergen, V. (2021): "An Investment Perspective on Global Value Chains." World Bank.

Rees D. and Rungcharoenkitkul, P. (2021): "Bottlenecks: causes and macroeconomic implications." BIS Bulletin, no. 48.

Rehn, O. (2021): "Will inflation make a comeback as populations age?"

Reinsdorf, M. and Schreyer, P. (2019): "Measuring consumer inflation in a digital economy." OECD Statistics Working Papers, 101.

Sanmartín Antelo, Á. and González-Calbert, L. (2020): "Ideas para la reforma de las reglas fiscales en la Unión Europea." Fedea notes - 2020/16.

Taylor, L. (2020): "Macroeconomic inequality from Reagan to Trump: market power, wage repression, asset price inflation and industrial decline."

Torres, R. (2021a): "El despertar de la inflación." Article published in FuncasBlog, 17 May 2021.

Torres, R. (2021b): "La inflación real y su percepción social." Article published in FuncasBlog, 13 September 2021.

UNCTAD (2020b): "World Investment Report 2020. International production beyond the pandemic." UNCTAD/WIR/2020.

Yi, M. H. and Choi, C. (2005): "The effect of the internet on inflation: Panel data evidence," Journal of Policy Modelling, Vol. 27, no. 7, pp. 885-889.

Zaman, S. (2015): "The Gap Between Services Inflation and Goods Inflation." Cleveland Fed.

4. DIGITAL EURO: A HAMMER IN SEARCH OF A NAIL?

Santiago Fernández de Lis[1]

4.1. CENTRAL BANK DIGITAL CURRENCIES: THE DEBATE SO FAR

The possibility of central banks issuing some form of digital cash is a very recent proposal that has generated considerable interest. The initial debates were mostly academic, triggered by the seminal papers published by the Bank of England.[2] However, given the profound implications that this proposal has on key topics for central banking and financial regulation – on areas like monetary policy, financial stability, payment systems, financial inclusion and Anti-Money Laundering, *inter alia* – the discussion rapidly moved to the policy arena.[3]

Most central banks analyzed the topic over recent years, but many of them were initially hesitant to move forward because of the problems related to anonymity and disruption of financial intermediation. In very simplistic terms, initial analysis concluded that if CBDCs replicate the anonymity of cash they will facilitate illegal transactions, thus raising Anti-Money Laundering (AML) –related issues; if CBDCs are identified, in the so-called account modality, they will compete with bank deposits and probably disrupt financial intermediation. Furthermore, CBDCs may exacerbate the problems related to the accumulation of functions in central banks and put at risk their independence, which is already questioned due to the increase in their balance sheet and their functions as a result of the global financial crisis initiated in 2007.

The dilemma between facilitating money laundering and competing with private banks led many central banks to keep their projects on hold. In this context the an-

[1] I would like to thank the comments to an earlier version of this paper from Fernando Fernández, Olga Gouveia, Jesús Lozano, Antonio Macías, Galo Nuño and Pablo Urbiola. Any remaining errors are my own.

[2] See Barrdear, J. and Kumhof, M. (2016).

[3] See Gouveia et al (2017) and BIS (2018).

nouncement by Facebook of the launch of Libra in June 2019 reignited interest in CBDCs for many central banks. The threat of a powerful BigTech issuing a stablecoin (a crytoasset linked to fiat money) that may compete with fiat currencies triggered a reaction in the central banking community. On the one hand, the authorities raised questions on the nature of Libra and its regulatory treatment; and, on the other hand, they looked back at plans for CBDCs with a more positive attitude.

This fresh look at CBDCs was accompanied by a more pragmatic approach, with more nuanced proposals that lessened the dilemmas implied in the first, more academic papers. In particular, some of these new proposals focused on modalities that rely on public-private partnerships rather than full provision by the central bank.[4] There was also increasing elaboration on variants that limit the extent of the dilemmas posed by anonymity. The Covid-19 crisis brought about a stigma of cash that also stimulated the debate. An increasing number of central banks are convinced that they should offer an electronic means of payment that links them directly with the population and does not rely entirely on private providers.[5]

In many countries the payments space is dominated by a few players, usually foreign firms offering card solutions. The Covid crisis increased the value of national self-reliance on critical services in the authorities' preferences, which is an additional reason for considering the issuance of CBDCs. It is important to clarify that not all the authorities have the same view in this respect. Some of them might not see a significant problem in relying on a few foreign firms for the retail payments infrastructure, to the extent that they are efficient and function according to local regulations. But after Covid the number of countries whose authorities are concerned on national sovereignty in the provision of retail means of payment and the importance of preserving a role for the national central bank has increased.

A few central banks are developing pilots on use cases, with Sweden and China as the frontrunners. Sweden's motivations are clear: cash is disappearing, being replaced by electronic forms of money, to the point that some shops in that country do not even accept cash.[6] The Swedish central bank is concerned about the reliance on foreign suppliers of credit cards like Visa and Mastercard, and considers that offering the population a direct link to central bank money is part of its mission.[7] According to this view, it is their duty to provide a cost-free electronic means of payment to the citizens, as an alternative to privately issued means of payment. Interestingly, Denmark, faced with a similar situation in terms of cash decline, decided that this is not necessarily a problem.

The case of China is very different and quite unique. The Chinese retail payments system underwent a radical transformation over recent years, moving from cash to electronic means of payment in a leapfrogging process that avoided the check or credit

[4] See BIS (2021b).

[5] According to a BIS Survey, nearly 60% of central banks are likely or possibly issuing a CBDC in the medium term (1 to 6 years). See Boar, Codruta and Andreas Wehrli (2021).

[6] One peculiarity of Sweden in this regard is that cash does not enjoy legal tender status.

[7] Sveriges Riksbank (2021).

cards phases and moved directly to payments with QR codes. Bigtechs played a key role in this process, disintermediating local banks that are in any case not very efficient. This process was a success from the point of view of innovation and efficiency, but generated concerns in Chinese authorities related to the emerging risks in the "shadow" financial system. The digital yuan project tries to recover a certain degree of control of the retail payments system by the central bank, which should be seen in conjunction with other policies aimed at curtailing the increasing market power of Bigtechs. These policies include the legal requirement to create a regulated bank holding company for the financial arm of their activities, limits to the use of clients data or even imposing a separation of activities. China is by far the leading country in developing a CBDC project, with a pilot in several cities in 2020-21.[8] Once the pilot is completed the People's Bank of China (PBOC) "will further expand test scenarios to cover all possible scenarios in selected pilot regions" and take a decision on whether to move ahead.

This article is structured as follows: section 4.2 will elaborate on the European specificities in the CBDC debate; section 4.3 will address the rationality of issuing a digital euro; section 4.4 will deal with the risks related to some of the options and section 4.5 will present some conclusions.

4.2. THE EUROZONE SPECIFICITIES

The ECB was not the first central bank to consider the issuance of a CBDC. Its stance on the topic was initially very cautious, until the launch of the Libra-Diem initiative by Facebook in June 2019, which triggered a renewed interest in the topic that led to the work on the digital euro report, published in October 2020.[9] This report adopted a very pragmatic approach, in which the issuance of a digital euro will be conditional on the materialization of a series of scenarios, in particular the following: (i) to support the digitalisation and strategic autonomy of the European economy; (ii) to respond to a significant decline in the use of cash as a means of payment and (iii) if there is significant potential for foreign CBDCs or private digital payments to become widely used in the euro area.

The digital euro would be designed to be a **means of payment**, and not a store of value.[10] This is a key requirement if we want it to (partially) replace cash but not bank deposits. European authorities are well aware of the risks of disruption of financial intermediation that may arise in case of a flawed design of the digital euro. To avoid that, public-private cooperation is indispensable, with the public sector providing the infrastructure and the private sector offering the customers' value-added services like onboarding and custody.

To ensure that the digital euro (partially) replaces cash but not deposits certain design aspects are essential, like remuneration, caps or more broadly the value added

[8] People's Bank of China (2021).

[9] European Central Bank (2020).

[10] For a discussion on the implications of this requirement see Fernández de Lis and Urbiola (2020).

services provided by banks. If the digital euro does not yield interest and does not incorporate holding limits, the relative attractiveness of deposits vis-á-vis digital cash (considering their relative safety as given) will depend on the additional functionalities that are available for each of them. This may include onboarding, direct debit, credit facilities or programmable money (the automatic linkage of payments to the delivery or certain services or products, as a type of smart contract).

Several options are under consideration to reduce the substitutability between the digital euro and deposits, in particular caps and incentives in terms of remuneration. Caps are the most obvious mechanism, with holdings limited to normal transaction needs (3,000 euros has been mentioned as a possible limit). The existence of limits on digital euro holdings would require dealing with (i) the issue of whether limits may differ between holders (physical vs legal persons or residents vs non-residents), (ii) the possibility that customers maintain several accounts in different institutions (as seems likely), (iii) the existence of off-line functionalities and (iv) transactions implying an excess in the overall balance. In any case, technical solutions would probably be found for these problems, which will require advances also in the area of digital identity, where the EU has a very rigid and fragmented framework.

As regards remuneration, the ECB seems inclined to a two-tier structure,[11] in which an initial amount below a certain threshold may enjoy a remuneration close to market rates and quantities exceeding that threshold would be penalized with a lower rate. Under the present situation of extremely low interest rates (which is likely to persist for a considerable period), this penalizing rate will probably be negative, which in practice may be complicated to impose. The dilemma for central banks in such a situation consists of making the digital euro attractive enough to partially replace cash but not so attractive as to replace deposits. The risk of being accused of financial repression (penalizing savers) may trigger political pressure on the central bank thus limiting the extent to which it wants to impose very negative interest rates to excess holdings of digital euros.

All these problems would be exacerbated in a **systemic bank run** situation.[12] The movement of funds to digital cash will be much easier than at present and free of the frictions inherent to a conversion to physical cash. In a crisis the value added services offered by bank deposits may become irrelevant and the negative rates on excess holdings needed to counteract the massive preference for central bank money as compared to banks' money would be very high. There would be considerable political pressure on the central bank to limit the penalization to excess holdings in such a situation. Think for instance in the situation of the euro peripheral countries in 2010-2012, with very sig-

[11] See Bindseil (2020).

[12] A contrary view can be found in Brunnermeir and Niepelt (2019), which present a model in which all the substitution of bank deposits with CBDCs is matched by lending from the central bank to the banks. In such a model, the lender of last resort function of the central bank becomes structural, which limits the possibility of bank runs. This framework is hardly compatible with central bank independence, as discussed in section 4.4.

nificant sovereign risk premia and a sovereign-bank risk doom loop. In such a situation a massive run to digital euro from deposits is a real risk (see section 4.4).

The remuneration of the digital euro also raises the issue of its link to **monetary policy**. There are pros and cons from this point of view, which will be explored in sections 4.3 and 4.4, but the overall conclusion is that introducing the possibility of using the digital euro interest rates aggressively for monetary policy purposes would not necessarily be aligned with the requirements to incentivize its use as means of payment/ store of value, and in any case would give too much power to the central bank and possibly compromise its independence. For all these reasons, setting caps on holdings seems preferable to a tiered interest rate remuneration scheme.

The question of **anonymity** is particularly complicated when it comes to designing the digital euro. In principle, central banks aim at replicating the features of cash when designing a CBDC. But anonymity poses a particular problem. In the case of cash, anonymity is embedded in its design. In the case of a CBDC, designing it as anonymous would be contrary to all the Anti Money Laundering (AML) policies. It is difficult to envisage how a central bank/ supervisor can enforce AML controls in supervised banks while at the same time offering directly a tool explicitly designed to circumvent such controls.

However, anonymity is one of the most attractive features of cash. Rogoff estimates that as much as 40% of dollars' demand is related to tax evasion, crime or money laundering activities.[13] It is interesting to observe that in the public consultation of the ECB digital euro report, privacy is considered the most important feature of a digital euro by both citizens and professionals.[14] Privacy is certainly not the same as anonymity, but it is challenging to design a digital euro that is identified but ensures privacy. Furthermore, to the extent that one of reasons to issue a digital euro is to overcome the potential competition of cryptocurrencies, the identification of digital euro holders and the traceability of the transactions may imply that it loses part of the current demand of cash in favor of crypto alternatives.

The debate so far seems to indicate that CBDCs will in general be designed in a way that avoids anonymity. It is likely that below certain thresholds there would be a presumption of a certain degree of anonymity, and also that strong privacy protection rules will be applied, but in case certain transactions need to be investigated traceability will ensure that this is feasible. This is a delicate balance.

Another emerging debate is **the technical and organisational approach** that would support the digital euro. According to the ECB report there are four options, depending on the degree of centralization (the extent to which the central bank is at the center of the scheme) and intermediation (the extent to which the central bank interacts directly with final customers or through banks and other intermediaries): (i) decentralized and intermediated, (ii) centralized and intermediated, (iii) decentralized and disintermediated and (iv) centralized and disintermediated.

[13] Rogoff, K (2017).

[14] See ECB (2021).

The criteria for choosing among these options are efficiency, cost-effectiveness, incentives for innovation and usability by customers. The decentralized and intermediated model seems to offer the best combination: improved security and scalability, leveraging in the ECB knowledge on the provision of critical payment infrastructures and private sector expertise on the provision of end-user payment solutions, KYC/AML features and usability, as well as its capacity to introduce innovative features, including in the wholesale payments segment, where the programmability of money is increasingly offering new opportunities. This decentralized and intermediated model seems also more coherent with a European payments landscape that is integrated in the wholesale level but fragmented in the retail level. This model has advantages also from the point of view of the interconnection of the digital euro with existing private payments infrastructures.

Over the recent years many improvements have been introduced in retail payment systems in a number of European countries, part of them as a result of regulatory changes like the Payment Service Directive (PSD-2) and part of them as a result of private participants' innovations. Among the latter instant payments is one of the most relevant, and the main enabler of new payment solutions such as Bizum in Spain, which provides a convenient digital solution for real-time P2P low-value payments, (a feature that the US, despite its leadership in other digital capabilities, is still struggling to introduce). Other improvements are in the pipeline, among them an extension of payment solutions based on instant payments to the pan-European setting, with the European Payments Initiative (EPI). It is crucial that the digital euro design is compatible with past and forthcoming private sector payment solutions.

The publication of the digital euro report triggered a debate on the **legal basis** for its issuance. This is a broader question affecting most central banks: according to the BIS nearly 50% of central banks consider their legal basis to issue a CBDC "uncertain."[15] But this issue is particularly controversial in the EU, whose institutional configuration complicates any legislative change on the legal basis of EU institutions, especially when it requires a reform of the Treaty. It is crucial therefore to determine whether the ECB can issue a digital form of euro under the present Treaty and ECB Statute or whether this would require legal changes and the involvement of other EU institutions like the Commission, the Council and the European Parliament. The ECB report devotes only a few lines to this topic, saying that a preliminary analysis indicates that there is legal basis for the digital euro issuance, but that this requires a more careful analysis.

The legal basis for the digital euro issuance on monetary policy grounds is dubious,[16] since article 128 of the TFEU only refers to banknotes and coins. From a purely economic viewpoint it is also unclear that the ECB monetary policy requires a digital euro (see section 4.3 below). But recent jurisprudence from the EU Court of Justice seems to support the idea that the existence of limits to the use of cash may support the introduction of a digital euro to reinforce the legal tender status of the euro. The legal tender condition of money is in itself a contentious issue, since its definition is not

[15] Boar and Wehrli, op. cit.

[16] Mooij (2021).

harmonized in the Eurozone. In any case, the legal debate is only starting and we will see further discussions in coming months.

This article focuses on the so-called general purpose digital euro, understood as a digital version of cash accessible to the general public. But an alternative modality is the **wholesale digital euro**, designed for use among financial institutions and with the central bank. This variant would respond to different types of needs and would raise different issues, arguably less problematic, to the extent that a modality of wholesale CBDC already exists in the form of banks' reserves in the central bank. The main difference would be that it would rely on Distributed Ledger Technology (DLT), similar to blockchain. Some experiments have been made, with focus on the programmability of money and smart contracts. The Banque de France conducted a series of experiments that led to the provisional conclusion that a wholesale CBDC with Distributed Ledger Technology (DLT) may improve the functioning of tokenized financial markets and facilitate cross-border and cross-currency transactions.[17] The German banking industry proposes that, on top of a retail CBDC, the Eurozone should work on a wholesale CBDC and tokenized commercial bank money. They suggest working on payments machine-to-machine that may introduce efficiency gains in several industries.[18] All these experiments and proposals are very promising and we will probably see developments in this regard soon, but they do not pose the political economy problems that a digital euro for retail use entails, which will be the focus of the following sections.

4.3. POSSIBLE REASONS TO ISSUE A DIGITAL EURO

The key question when it comes to the design of a digital euro is the identification of the problem that we want to address, which will determine its optimal design. Sometimes CBDC seems to be "a solution in search of a problem," to use the words of Fed Governor Waller.[19]

There are several problems that we may want to solve with a CBDC: (i) the disappearance of cash, (ii) fostering financial inclusion, (iii) increasing the efficiency of retail payment systems, (iv) improving the monetary policy tools and (v) reacting to the competition of cryptoassets, particularly stablecoins, or foreign CBDCs.

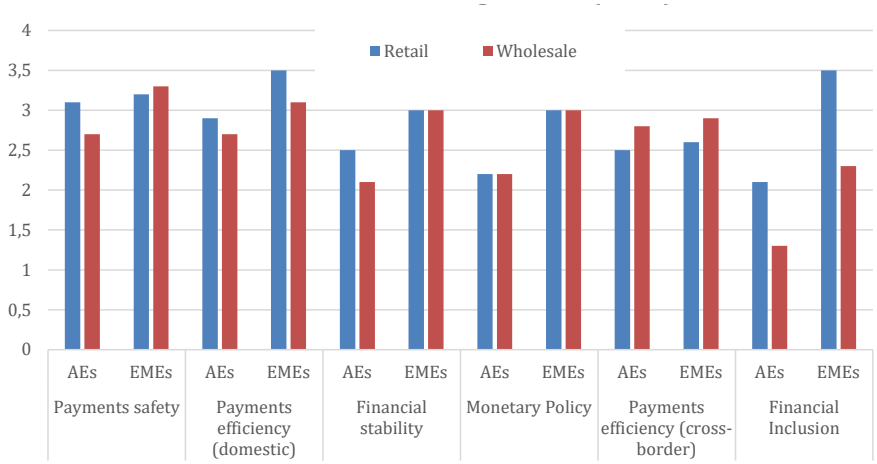
In this section we will consider all these possible problems from the point of view of the Eurozone, since not all the problems have the same relevance in different countries or institutional settings. As can be seen in chart 1, according to a BIS survey, central banks in emerging markets see more reasons to issue a CBDC than their counterparts in advanced economies, with financial inclusion and efficiency of domestic payments as the main reasons. For advanced economies payments safety and efficiency are seen as the most relevant reasons to issue a retail CBDC, with financial inclusion, monetary policy and financial stability as less relevant motivations.

[17] Banque de France (2021).

[18] German Banking Industry Committee (2021).

[19] Waller (2021).

Chart 1: Motivations for issuing a CBDC (2020).



Source: Ready, steady, go? Results of the third BIS survey on central bank digital currency.
BIS Papers n. 114, January 2021 // AE: Adevanced Economies // EMEs: Emerging Market Economies.

One candidate for a problem that we will not address here is the idea that CBDCs may help overcoming banking crises. Although some proposals have focused on replacing bank deposits with a retail CBDC, the overwhelming majority of central banks that analyzed the problem concluded that, on the contrary, its design should prevent a disruption of financial intermediation.

4.3.1. THE DISAPPEARANCE OF CASH

One of the main arguments mentioned in the literature for the introduction of CBDCs is the disappearance of cash. In some countries like Sweden the use of electronic forms of money is making the use of cash less and less relevant. This led Swedish authorities to consider the CBDC as a way of continuing offering a means of payment provided by the public sector, to avoid forcing the public to use only private forms of electronic money. The fact that the main credit card companies are foreign also raises issues of strategic autonomy and excessive reliance on a few providers of critical services.

Scandinavian countries are the exception rather than the rule in terms of cash circulation. In a comparison of 24 countries, Norway, Sweden, Denmark and Finland appear at the bottom of the cash use index, with ratios between 25-35%, whereas Germany, Italy and Spain ratios are around, 60% China and India around 55%, the US slightly below 50% and Japan above 65%.[20] Available statistics do not show a clear downward trend in the use of cash, although there seems to be a logical decrease in recent years due to the

[20] Lieven (2021).

Covid pandemic, whose degree of permanence is difficult to assess at this point, since the available data do not cover the post-Covid period.

In the euro area the ratio of banknotes to GDP has increased from 9% to 11% between 2009 and 2019 and that of banknotes to M3 from 9% to 10% over the same period. As can be seen in table 1, with 2019 data, 72% of the transactions at the point of sale (POS) (representing 47% in value terms) and 83% of person-to-person (P2P) transactions (57% in value) are made in cash.[21] It is important to note, however, that these figures show a decrease of 6 points from 3 years earlier. There has been some discussion on the so-called "paradox of banknotes": the evidence that its demand has continued increasing while its use for retail transactions is decreasing. The explanation for this is probably an increase in the demand for euro banknotes as a store of value (inside and outside the Eurozone – it is estimated that between 30 and 50% of euro banknotes circulate abroad, and this percentage has been increasing recently). Negative interest rates partly explain this greater propensity to save in cash. This trend for an increase in its demand as a store of value and a decrease as a means of payment seems to have been exacerbated by the Covid pandemic, but data are yet incomplete.

Table 1.

Use of cash in the Eurozone (%)		
	2019	**2016**
Transactions POS	72	78
Value POS	47	53
Transactions P2P	83	89
Value P2P	57	63

POS: Point of Sale . P2P: Peer to Peer.

Source: Zamora-Pérez (2021).

A recent survey shows a higher degree of preference for cash among Europeans. Only 12% of Germans would prefer a cashless society compared to 34% of US citizens, 42% of Chinese, 50% of Indians or 18% of Japanese. The results for other EU countries do not differ much to those of Germany: 15% for Spain, 11% for France, while Italy is an outlier, with a much higher preference for a cashless world (30%). Even Sweden, despite the decreasing use of cash, seems extremely reluctant to a world without banknotes, with only 15% of respondents in favor of a cashless society.

The overall picture in the Eurozone shows therefore a decrease in the use of cash as a means of payment and an increase in its use as a store of value, with both trends

[21] Zamora-Pérez, Alejandro (2021).

probably accelerating during the pandemic. These trends show that cash is moving in the opposite direction of where we would like to see the digital euro, which would ideally be mostly a means of payment (to partially replace cash) and much less so a store of value, to avoid replacing bank deposits. These trends, if sustained, would imply that the substitutability between cash and digital euro would tend to decrease, since the main determinants of their demand are diverging. At the same time, the substitutability of the digital euro with deposits would tend to be relatively high, to the extent that the population uses them interchangeably to support digital payments. If this is the case, it may well be the case that the digital euro tends to replace deposits rather than cash, the opposite of what we want to achieve.

To the extent that the demand for cash is increasingly driven by illegal activities, its substitutability will mainly be with cryptoassets. In the process of replacement of cash by digital euro, the latter will probably lose some of the appeal cash presently enjoys, in favour of cryptoassets. The privacy that the digital euro will offer will not be comparable to the opacity of cryptoassets or cash for demand driven by illegal activities or tax evasion.

It has been argued that even if cash is not disappearing, its reduced use as a means of payment undermines its role as monetary anchor for privately issued money.[22] A cash that is basically hoarded for illegal activities and outside the Eurozone, but with little circulation in daily payments activities may be less visible for European citizens, but it is unclear whether this process will make it less suitable as a unit of account and therefore as a monetary anchor.

4.3.2. FOSTERING FINANCIAL INCLUSION

Another reason frequently mentioned to issue a digital currency is to increase financial inclusion. The reasoning is that the central bank may offer a digital payment platform at zero cost or in any case at a lower cost than those provided by private players.

It is important to note first that the degree of bankarization of the Eurozone is among the highest in the world, with most countries above 90% of adults with a bank account, compared to 80% in China, 75% in Russia, 70% in Brazil and South Africa and ratios below 50% for many Latin American countries. Financial inclusion is mostly an emerging markets problem (as shown in chart 1). And the cost of retail electronic payments is very low or non-existent for customers, with merchants assuming most of the costs.

It is true that there are concerns in some European countries of a possible problem of financial exclusion in some less populated regions as a result of the decrease in the number of branches and ATMs. But it is far from clear that this problem would be solved with a digital euro, which requires a certain degree of digital skills and access to mobile devices in the users. In fact, elderly population is the segment most vulnerable

[22] Panetta, Fabio (2021).

to a reduction in the use of cash in favor of digital alternatives, and this is one of the reasons why Sweden is not considering in any case the disappearance of cash but its partial replacement. In the Eurozone, digital exclusion may be a much more worrying problem than financial exclusion.

4.3.3. INCREASING THE EFFICIENCY OF RETAIL PAYMENTS SYSTEMS

Proponents of CBDCs claim that it would improve the functioning of retail payments, reducing intermediation costs and increasing the velocity of liquidation and settlement. This argument is in general more applicable to emerging and developing countries than industrial countries. The latter normally enjoy faster and more efficient retail payment systems, and Europe is not an exception. Furthermore, Europe has made over recent years considerable progress in making payment services more efficient, accessible and affordable, in particular with instant payments, enabling 24x7 clearing and settlement and the development of new payment solutions in a number of countries. Bizum in Spain is an outstanding example, with nearly 20 million users and no cost for the users.

There is consensus that it is in cross-border retail payments where inefficiencies lie, not in domestic payment systems (see FSB reports to the G20.[23]) In particular remittances is an area where transaction costs are high and efforts of the international community are therefore concentrating there. Digital tools may enhance the speed and lower the costs of these low value transactions, although some of the costs related to Anti-Money Laundering legislation are not easy to relax.

The key question in this regard is whether CBDCs may facilitate low value cross-border payments. CBDCs are not designed for cross-border use, and may indeed have undesirable effects: the more CBDCs are used by non-residents the bigger the distortions they may create, for several reasons. First, because the bigger the proportion of CBDCs in the hands of non-residents the higher its use as a store of value and the lower its use as means of payment, which is the opposite of the desirable situation (limits in holdings may help mitigating this problem, although the digital identity of non-residents poses a problem). Second, if CBDCs are mostly held by non-residents the link with domestic monetary policy is weakened. Third, a high demand of CBDCs by non-residents may overshoot the exchange rate of the issuing country. And fourth, because cross-border use of CBDCs may create negative externalities abroad, especially in countries with a high degree of dollarization and weak institutions, where it may exacerbate capital flight (see section 4.3-v below). The increase of seigniorage income (the profits as a result of issuing cash and other liabilities with a very low cost and investing the proceeds in profitable assets) as a result of placing digital cash abroad does not seem to outweigh these disadvantages.

For all these reasons a CBDC issued in isolation by one central bank does not seem

[23] FSB (2020): Enhancing Cross-border Payments: Stage 3 roadmap, 13 October 2020. https://www.fsb.org/2020/10/enhancing-cross-border-payments-stage-3-roadmap/

to be the solution to the inefficiencies in cross-border retail payments. But central banks are exploring ways to use a network of CBDCs to improve cross-border payments.[24] The CPMI report explores two scenarios: in the first scenario, with no coordination between the issuing central banks, restrictions on cross-border use seem unavoidable; in the second scenario, with some degree of interoperability between CBDCs based on access and settlement arrangements to facilitate the cross-border use of CBDCs, a co-operative solution may emerge that facilitates cross-border payments.

This cooperative solution is being explored by the BIS together with some Asian central banks (Hong Kong, Thailand, China and UAE), with promising results.[25] According to the BIS this experiment "demonstrated the potential of using digital currencies and distributed ledger technology (DLT) for delivering real-time, cheaper and safer cross-border payments and settlements." More specifically, the cross-border transfer speed was increased from days to seconds, and several of the core cost components of correspondent banking were significantly reduced. Despite all this progress in the technical infrastructure for a cross-border CBDC, in section 4.3-v below we will see that it is unclear that the co-operative solution is the most likely outcome.

4.3.4. STRENGTHENING MONETARY POLICY INSTRUMENTS.

It has been argued that CBDCs may strengthen the transmission mechanism of monetary policy and complete the array of monetary policy instruments, in particular in a zero lower bound situation. The central bank, in a deflationary situation, faces a limit in its negative interest rate policy related to the existence of cash which, with an inherent zero interest rate, sets a limit on the extent of negative interest rates in other financial assets, and therefore on how far can the central bank go into negative territory in its policy rates. The elimination of cash, the reasoning follows, will eliminate such restriction and allow the central bank to be much more aggressive in its negative interest rates policies, hence increasing its firepower in deflationary situations.[26]

While the preceding reasoning is at first sight correct, there are several potential drawbacks:

- First, most CBDC proposals do not envisage at all the elimination of cash, but its partial substitution with a digital variant. The reason for that is that cash is still seen as an efficient means of payment for low value transactions and also to avoid financial exclusion of certain vulnerable segments of society like the elderly population. It is also seen as a necessary back-up of the technical infrastructure of payments systems. To the extent that low denomination banknotes continue to circulate, the introduction of a CBDC does not eliminate the zero lower bound and the implicit limits to negative interest rates will continue operating.

[24] CPMI (2021).

[25] BIS (2021a).

[26] See Auer et. al (2021)

- Second, and most importantly, using interest rates aggressively in the digital cash holdings of the general population can be seen as an interference with fiscal policy and a form of financial repression that may backlash against the central bank and question its legitimacy. In such a situation, decisions on interest rates taken by an independent central bank would imply direct transfers of wealth between segments of the population. It may be argued that this is not so different that at present, when interest rates decisions imply transfers between debtors and creditors. But at present there is a transmission mechanism and financial intermediaries in between the central bank and the citizens, which implies a huge difference in terms of the perception of the impact of central bank decisions on the financial wealth of the population.

Although the monetary policy reasons to issue a CBDC may seem theoretically appealing, the political economy drawbacks mentioned above probably outweigh the benefits. As can be seen in chart 1, the monetary policy reasons rank very low among the possible motivations for issuing a CBDC in a survey among advanced countries' central banks. And it may be argued that the Eurozone is particularly sensitive to these considerations, to the extent that wealth transfers as a result of ECB decisions would also imply transfers among EU countries.

4.3.5. REACTION TO THE COMPETITION OF CRYPTOASSETS, STABLECOINS AND FOREIGN CBDCS.

Finally, a reason to issue CBDCs may be defensive, as a reaction to the competition (real or foreseeable) of cryptoassets, stablecoins or foreign CBDCs. This reason seems to play a very important role, judging from the reaction of central banks to the announcement of Libra- Diem by Facebook in June 2019. The competition of digital currencies (public or private) in the provision of money entails a series of problems: (i) it may weaken the monetary policy transmission mechanism, to the extent that the population funds its spending with a numeraire that is neither under the control of the central bank nor affected by monetary policy decisions; (ii) it raises consumer and investor protection issues; (iii) it may create financial stability problems if the value of a significant part of the assets in the hands of the public is subject to a high volatility in domestic currency terms; and (iv) it may reduce the seigniorage income of the central bank.

The relevance of the problems mentioned above varies depending on the source of the competition and the type of country. For instance, Bitcoin-type cryptoassets' volatility is more likely to create financial stability problems but less frictions related to monetary policy or seigniorage income, to the extent that they are not a suitable substitute for fiat money. Stablecoins, on the contrary, are more likely to create monetary policy or seigniorage-related problems. And foreign CBDCs may create the three types of problems.

All these problems would affect emerging and industrial countries differently, and among the latter there would also be specific problems for countries issuing a reserve currency. Emerging markets face a higher risk of loss of monetary sovereignty and cap-

ital flight, especially those with a weak institutional setting and a tradition of dollarization. Countries issuing a reserve currency (like the dollar, euro or yen) will be more sensitive to seigniorage competition.

The competition for the role of reserve currency would be enhanced by the introduction of CBDCs. In the present situation external seigniorage income is created only as a result of the circulation of banknotes abroad, which is obviously limited by logistical frictions. In a world of digital currencies this competition would be exacerbated by the facility of switching from one currency to another. If a substantial part of money supply is in the hands of non-residents the link between money and domestic spending would be weakened and exchange rates may experience pressures unrelated to their fundamentals, thus reducing the effectiveness of monetary and exchange rate policy. For all these reasons, in a world of generalized CBDCs there would be very strong incentives for central banks to limit CBDCs holdings by non-residents. Such limits may however be difficult to enforce, and in any case would run counter to the current paradigm of free capital flows. A generalization of capital controls is a serious risk in such a scenario.

In any case, the creation of a CBDC does not seem to be the best response to the competition of stablecoins or foreign CBDCs, but rather regulation and cooperation, respectively.[27] In the case of stablecoins, their recent development seems to be the wrong reason to issue a CBDC, while a regulatory response seems indeed much more adequate. There is consensus around the idea that the risks generated by cryptoassets (including stablecoins) are not adequately addressed. The EU is working on a Markets in Crypto Assets (MiCA) regulation, and the US is also considering the need for new regulation. China has followed a more radical stance, prohibiting cryptoassets altogether. Other countries are analyzing the issue and considering the most adequate approach. The Basel Committee has recently issued a paper on the prudential treatment of cryptoassets.[28] As the regulatory approach to cryptoasets is taking shape, the pressure to react to their development by issuing CBDCs will decrease.

As regards the competition of other CBDCs, a co-operative approach seems to be more adequate than a competitive one. The G7 issued a statement and a report in October 2021 with a series of principles on the development of CBDCs.[29] Principle 7 states that "CBDCs should be designed to avoid risks of harm to the international monetary and financial system, including the monetary sovereignty and financial stability of other countries." Principles 12 and 13 also refer to cross-border issues, including the enhancement of cross-border payments, working in a collaborative way on the international dimension of CBDCs and on their possible use in international development assistance. There seems to be an increasing awareness among central banks on the spillover effects of CBDCs and the need for a coordinated approach.

A group of central banks is also exploring the technical feasibility of a network of DLT-based CBDCs platforms as a means to reduce the cost and improve the efficiency of

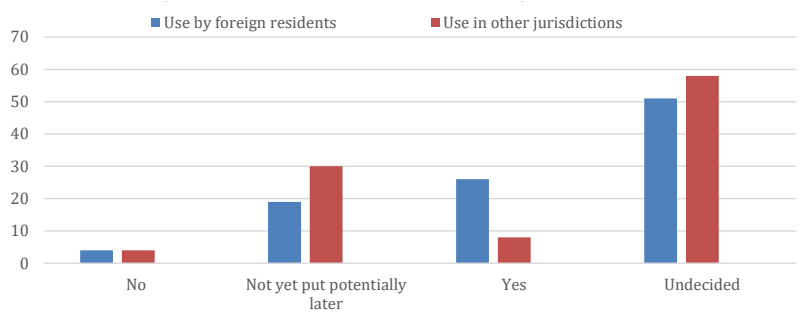
[27] See Fernández de Lis (2020).

[28] Basel Committee on Banking Supervision (2021).

[29] G7 (2021b).

cross-border payments. According to a BIS Survey among central banks, most of them are undecided on whether to open their CBDCs to the use by non-resident holders or in foreign jurisdictions (chart 2). Also under the auspices of the BIS, but more focused on policy issues, another group of central banks (including the ECB, the Fed and the Bank of England) recently issued three reports on (i) system design and interoperability; (ii) user needs and adoption; and (iii) financial stability implications of CBDCs.[30] The progress on the technical aspects of central bank cooperation in the cross-border implications of CBDCs is promising, but the main obstacles are not technical, but political. Despite the above-mentioned efforts, it seems unclear at this stage that the design of CBDCs would be harmonized and therefore compatible on aspects like its accessibility to non-residents, which is key from the point of view of international spillovers. The fact that China, the country most advanced in developing a CBDC, does not participate in these efforts illustrates that the co-operative solution remains challenging.

Chart 2: Survey of cross border use of CBDCs by central banks.



Source: CBDCs beyond borders: resuts from a survey of central banks, BIS papers n 116, June 2021.

Indeed, the geopolitics of China being probably the first sizable country issuing a CBDC are very relevant. The confrontation between China and the US is escalating, and the post-Trump US administration is signalling its inclination for an alliance with the EU and other allies in areas like data sharing, bigtech regulation and privacy, leaving China outside of this agreements.[31] In the case of CBDCs there are a number of factors to be taken into account in this regard:

- The chances of the renminbi challenging the dominance of the dollar in the international monetary system are very low in the medium term, due to the existence of capital controls in China, but also to the fact that the role of leading currency in the global economy is subject to strong inertia forces. And in any case the digital yuan project is so far addressed only at domestic problems.

[30] BIS (2021c).

[31] See G7 (2021a).

- In terms of Bigtech regulation, China starts from a position of dominance of a few Bigtechs in the retail payments sphere that the government is trying to correct, whereas the EU is adopting regulation to prevent this dominance from happening and the US is considering whether to act.
- In terms of data sharing, China is trying to limit the use of data by Bigtech, to curtail their market power, whereas the EU is trying to extend the data sharing framework currently limited to banks to other sectors while preserving privacy and the US is adopting a more laissez faire approach.
- As regards cryptoassets, China is prohibiting them whereas the EU is designing a framework to ensure a certain degree of safety in its use and the US is considering moving in the same direction.

The implication of the above is that China may set a precedent if it is the first country issuing a CBDC, but the implications for the rest of the world would be probably limited. It may not be a model for other countries in a number of aspects, and the spillover effects on other countries would be smaller than in the case of the EU or the US. In this regard, one may argue that, if China is the first mover, the relevant question would be which country among the major economies would be the second mover.

4.4. RISKS

The risks of a digital euro depend on the modalities of implementation chosen. The ECB pragmatic position limits these risks, to the extent that the digital euro is not aimed at replacing deposits or disrupting financial intermediation. On the contrary, the digital euro will be based on a public-private partnership, with banks and other financial intermediaries maintaining the relation with customers.

Despite these safeguards the risk of disruption of financial intermediation is not a minor one. The ECB will need to reach a very delicate balance: designing a digital euro that is attractive enough to (partially) replace cash but not so much as to replace deposits. As has been argued in section 4.2, to address this problem limits on digital euro holdings are preferable to a tiered structure of remuneration.

The possibility of exacerbating bank runs has been mentioned as one of the risks of CBDCs. Bank runs certainly exist under present circumstances, as illustrated by the case of Northern Rock in the UK in 2007. But the substitutability between deposits and cash is more limited than the foreseeable one between deposits and digital euros, and the logistical complications of cash storage will disappear with a digital form of cash. The issuance of a digital euro will stress the fact that central bank money is the only safe asset, potentially undermining confidence in the safeness of deposits.

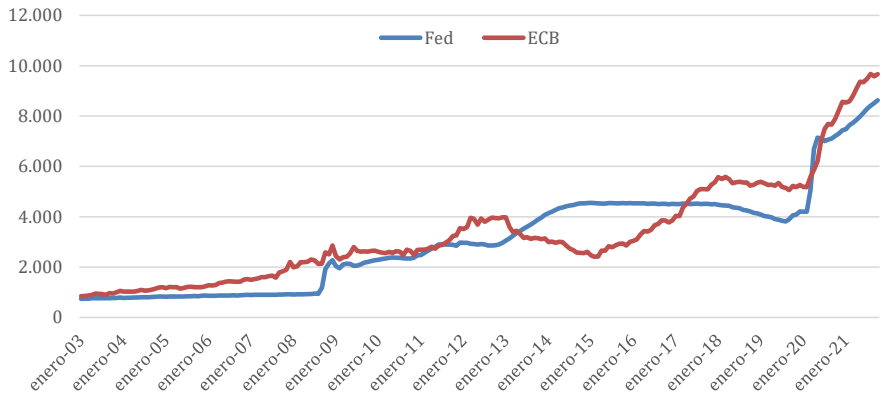
These factors may be secondary or even irrelevant in a normal situation, but will become critical in a crisis, especially if it is systemic, affecting all the banks in a given jurisdiction, like in a sovereign- banking doom loop situation. Limits on holdings would act as a circuit breaker in a crisis situation, but it is true at the same time that the political pressures to increase or eliminate such limits in a bank run would be difficult to

overcome. And the delicate balance of designing the digital euro with the right degree of appeal (not too little, not too much) will require fine tuning to the changing perception of the riskiness of bank deposits. This fine tuning may be made with adjustments in the holding limits and/or the interest rate structure of their different tiers, but the difficulty of finding the right balance at each point in time is clear. Advances in the Banking Union, in particular in the European Deposit Insurance System (EDIS) would help mitigating this risk.

CBDCs may also undermine central bank independence. The rationale for the autonomy of central banks relates to their monetary policy function and the avoidance of time inconsistency problems. The other side of independence is accountability, understood as the obligation of the central bank to explain its policies to the general public, the government and the parliament. However, the more functions a central bank has, the less clear its mission is, and the more complicated its accountability, thus undermining its independence.

Over recent years, central banks have accumulated more responsibilities: on top of monetary policy, many central banks provide payment infrastructures and have objectives concerning financial stability, consumer protection, supporting economic growth and more recently even fighting climate change. One may argue that, after the financial crisis of 2008 and the impact of Covid, many central banks are also to a certain extent engaged in financing the government (which is typically seen as in open contradiction to central bank independence). The ECB may also be seen as having a mission in terms of deepening the banking union as a pillar of European integration. As a result of these trends, the main central banks' balance sheets have increased more than tenfold in recent years (see chart 2). All these developments have triggered a wave of criticisms and suggestions to limit central bank power and independence, especially in the US and the EU.

Chart 3: Size of Balance Sheet: Fed and ECB. *Billion USD.*



Source: BBVA Research.

In these circumstances conferring upon the central bank the mission of providing the general public a digital form of cash could fuel a reaction against having an independent institution with so much power, especially in the variants of CBDCs that imply a direct contact between the central bank and the general public, and more so if the central bank has the capacity to set the interest rate of such holdings, affecting directly the wealth of the citizens.

4.5. CONCLUSIONS

- In deciding whether to issue a digital euro it is important to clearly identify ex ante the problem we want to address and design its features accordingly, minimizing the related risks.
- A particularly delicate balance in the design of any CBDC is to make it attractive enough to compete with cryptoassets, stablecoins and other CBDCs, and to partially replace cash, and not too attractive to avoid replacing bank deposits.
- Cash is increasingly used as a store of value and less as a means of payment, moving in the opposite direction of where we would like to see the digital euro, which would ideally be mostly a means of payment and much less so a store of value. These trends, if sustained, would imply that the theoretical substitutability between cash and the (future) digital euro would tend to decrease in the years before the launch of the latter, since the main determinants of their demand are diverging.
- Another important trade-off in the design of the digital euro is the one between privacy of final users and at the same time making sure the adequate controls against money laundering and illegal activities are in place.
- It is crucial that the design of the digital euro ensures its compatibility with existing and forthcoming solutions in the private payments landscape.
- Among the reasons usually mentioned to issue a CBDC, the competition of stablecoins and other CBDCs seems to be the most relevant for the Eurozone.
- The cross-border dimension of CBDCs poses particularly difficult issues. If they are accessible to non-residents, negative spillover effects on third countries are difficult to avoid, but limiting the cross-border use would be difficult in practice and would require some modality of capital controls. A group of central banks is exploring the idea of a network of interoperable CBDCs to increase the efficiency of cross-border payments, but it is unclear at this stage whether this cooperative approach will prevail against more competitive dynamics.
- The doubts about the legal basis for the digital euro issuance may force delays as compared to other countries, given the more complicated institutional setting in the Eurozone.
- The CBDC more ambitious proposals, in which the central banks assumes a very relevant role in the provision of payment services (or even store of value functions) vis-à-vis the general population may lead to a backlash against central

bank independence, due to the accumulation of functions and power in the central bank and its more complicated accountability.

REFERENCES

Auer et. al. (2021): Central bank digital currencies: motives, economic implications and the research frontier, BIS Working Papers | No 976 | 04 November 2021

Banque de France (2021):Wholesale Central Bank Digital Currency Experiments with the Banque de France, Results & key findings, November 2021. https://www.banque-france.fr/sites/default/files/media/2021/11/09/rapport_mnbc_0.pdf

Basel Committee on Banking Supervision (2021): Prudential treatment of cryptoasset exposures, Consultative Document, June 2021.

Barrdear, J. and Kumhof, M. (2016):The macroeconomics of central bank issued digital currencies, Bank of England Working Paper No. 605, 18 July 2016.

Bindseil (2020): "Tiered CBDC and the financial system," ECB Working Paper Series 2351, January 2020.

BIS (2018): "Central Bank Digital Currencies," Report by the Committee on Payments and Markets Infrastructure and the Markets Committee, March 2018.

BIS (2021a): Inthanon-LionRock to mBridge: Building a multi CBDC platform for international payments
https://www.bis.org/publ/othp40.pdf

BIS (2021b): Central bank digital currencies: system design and interoperability, September 2021
https://www.bis.org/publ/othp42_system_design.pdf

BIS (2021c): Central bank digital currencies: executive summary
https://www.bis.org/publ/othp42.htm

Brunnermeir and Niepelt (2019): "On the equivalence of private and public money," Journal of Monetary Economics, 106 (2019), 27-41

Codruta Boar and Andreas Wehrli: Ready, steady, go? – Results of the third BIS survey on central bank digital currency, BIS Papers No 114 January 2021

Committee of Payments and Market Infrastructure, CPMI (2021): Central bank digital currencies for cross-border payments, Report to the G20, July 2021
https://www.bis.org/publ/othp38.pdf

European Central Bank: report on a Digital Euro, October 2020 https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf

Fernandez de Lis (2020): Central bank digital currencies: the cross-border dimension, The International Banker, March 5, 2020 https://internationalbanker.com/banking/central-bank-digital-currencies-the-cross-border-dimension/

Fernández de Lis, S. and P. Urbiola (2020): Retail Central Bank Digital Currencies:

means of payment vs store of value, SUERF Policy Note, Issue No 183 https://www.suerf.org/policynotes/15609/retail-central-bank-digital-currencies-means-of-payment-vs-store-of-value

FSB (2020): Enhancing Cross-border Payments: Stage 3 roadmap, 13 October 2020. https://www.fsb.org/2020/10/enhancing-cross-border-payments-stage-3-roadmap/

German Banking Industry Committee (2021): Europe needs new money – an ecosystem of CBDC, tokenised commercial bank money and trigger solutions, July 2021. https://die-dk.de/media/files/20210625_DK_Ergebnisdokument_EN.pdf

Gouveia et al (2017): Central Bank Digital Currencies: assessing implementation possibilities and impacts, BBVA Research Working Paper Nº 17/04, March 2017 https://www.bbvaresearch.com/wp-content/uploads/2017/09/WP_CBDC_mod.pdf

G7 (2021a): Communique of Carbis Bay Summit, June 2021 http://www.g7.utoronto.ca/summit/2021cornwall/210613-communique.html

G7 (2021b) : Public Policy Principles for Retail Central Bank Digital Currencies (CBDCs) , October 2021 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1025235/G7_Public_Policy_Principles_for_Retail_CBDC_FINAL.pdf

Lieven, Theo (2021): They Still Want to Have Cash - A Case of Psychological Ownership. Available at SSRN: https://ssrn.com/abstract=3888666 or http://dx.doi.org/10.2139/ssrn.388866

Mooij, Annelieke A.M: European Central Bank Digital Currency: The Digital Euro. What Design of the Digital Euro Is Possible Within the European Central Bank's Legal Framework? (May 3, 2021). BRIDGE Network Working Paper Series No 14, 2021, Available at SSRN: https://ssrn.com/abstract=3838729 or http://dx.doi.org/10.2139/ssrn.3838729

Panetta, Fabio (2021): Central bank digital currencies: a monetary anchor for digital innovation

Speech by Fabio Panetta, Member of the Executive Board of the ECB, at the Elcano Royal Institute, Madrid, 5 November 2021 https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211105~08781cb638.en.html

People's Bank of China (2021): Progress of Research & Development of E-CNY in China, http://www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021071614584691871.pdf

Sveriges Riksbank (2021): e-krona pilot phase 1 https://www.riksbank.se/globalassets/media/rapporter/e-krona/2021/e-krona-pilot-phase-1.pdf

Rogoff, K (2017): The Curse of Cash: How Large-Denomination Bills Aid Crime and Tax Evasion and Constrain Monetary Policy, Princeton University Press, June 2017.

ECB (2021): report on the public consultation of a digital euro (2021) https://www.ecb.europa.eu/paym/digital_euro/html/pubcon.en.html

Waller, Christopher J (2021): CBDC - A Solution in Search of a Problem? https://www.bis.org/review/r210806a.pdf

Zamora-Pérez, Alejandro (2021): The paradox of banknotes: understanding the demand for cash beyond transactional use, Published as part of the ECB Economic Bulletin, Issue 2/2021.
https://www.ecb.europa.eu/pub/economic-bulletin/articles/2021/html/ecb.ebart202102_03~58cc4e1b97.en.html

PART II
ISSUES IN FISCAL POLICY

5. FISCAL POLICY IN THE EU AFTER COVID: NEW CHALLENGES AND OPPORTUNITIES

Cristina Herrero, Autoridad Independiente de Responsabilidad Fiscal (AIReF) president

5.1. ABSTRACT

The COVID-19 pandemic has induced the worst economic downturn since the Second World War, requiring governments to design large-scale recovery plans to overcome this crisis. Deep uncertainty remains related to the recurrence of pandemic waves, certain cyclical features, such as the intensity and persistence of supply-side bottlenecks and inflation, and more structural dimensions including the scarring effects of the pandemic on potential growth and inequality. Against this backdrop, fiscal policy in Europe faces extraordinary challenges. In the short run, the first challenge is how to withdraw the broader emergency measures, replacing them with a more targeted response to support an inclusive recovery. At the same time, fiscal policies in Europe face the need to reduce high public debt towards more sustainable levels and rebuild policy buffers to effectively fullfil their macro-stabilisation role. Furthermore, fiscal policy is challenged by the looming challenges related to ageing populations and the digitalisation and climate change transformations. In this context, well-designed national fiscal frameworks and the revision of EU fiscal rules are essential to support better fiscal planning over the medium term and sustainability.

5.2. INTRODUCTION

COVID-19 severely hit European economies. Several weeks of strict lockdowns and social distancing measures needed to contain the successive waves of the virus triggered an economic crisis sharper than the Great Recession caused by the Global Financial Crisis (GFC).

The exceptionally large and coordinated response – both at national and EU levels and across policies – has been essential to mitigate the economic damage of the COVID-19 crisis in Europe. Very low interest rates, massive purchases of assets by the European Central Bank (ECB) along with extraordinary fiscal support have helped to preserve households' income and firms' productive capacity.

Against this background, as vaccination campaigns progressed and the pandemic-related restrictions were gradually eased, European economies have rebounded markedly. Strong growth has been underpinned by very favourable labour market trends, the release of pent-up demand, the favourable prospects for the implementation of the EU's Recovery and Resilience Facility (RRF) and still substantial fiscal and monetary support. Indeed, according to the 2021 European Commission (EC) Autumn forecasts, in the third quarter of 2021 output and unemployment in the European Union (EU) were virtually back to their pre-pandemic levels, much earlier than expected during the worst months of the pandemic.

Nevertheless, the recovery is highly uneven across countries, sectors, and households while the level of uncertainty is still significant. The recent surge in COVID-19 cases across Europe has led to some Member States reimposing restrictions. Moreover, the synchronic and rapid resumption of economic activity around the globe has been accompanied by supply-side disruptions that are restraining growth at a very early stage of the recovery. Shortages of raw materials and intermediate inputs and transport deadlocks partly linked to the increase in COVID-19 cases have provoked disruptions in global value chains that are rapidly spreading across countries and industries in a highly interconnected world. Labour shortages are also emerging in certain countries and sectors, while at the same time other parts of the economy are still relying on job retention schemes. Finally, surging energy prices driven by both high demand and geopolitical forces are also constraining growth.

As a result, the strength of the recovery remains highly uncertain and inflation has surged, following years of persistently low records. Risks of persistently high inflationary pressures should not be dismissed in the context of economic recovery and shrinking labour market slack (Goodhart and Pradham, 2020). However, it is still premature to conclude that the regime of low growth, low inflation and low interest rates that prevailed in the pre-pandemic period is coming to an end.

The COVID-19 pandemic has illustrated the importance of fiscal policies to mitigate the negative impact of severe shocks. As a result of both supportive fiscal measures and GDP contraction, government debt has risen to unprecedented levels in the euro area, where it is expected to reach 100% of GDP in 2021. This overall figure masks increased heterogeneity in debt levels across countries: Greece stands out with a debt level higher than 200% of GDP in 2021 followed by Italy, Belgium, Spain, France and Portugal with debt ratios above 100% of GDP. Fiscal space has thus narrowed precisely in a context where the EU needs to bridge massive funding gaps concerning pre-existing socio-demographic, technological and environmental goals. At the same time, the pandemic has exacerbated inequality trends and revealed weaknesses in public health systems to

cope with the corona crisis. In sum, fiscal policy design in this uncertain environment faces extraordinary challenges.

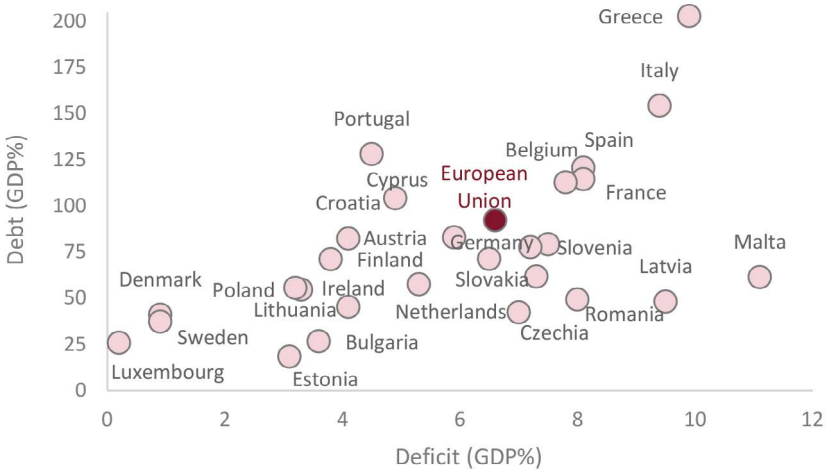
This article is structured as follows. Section 1 reviews the current situation of fiscal policies in Europe. Section 2 discusses Europe's fiscal policy response to the pandemic. Section 3 analyses the challenges going forward and focuses on four main elements. First, this section discusses how fiscal policy support should be adapted to the evolving economic situation. Second, the need to make the most out of NGEU is discussed. Next, this section emphasizes the need to design a medium-term strategy to reduce high levels of debt without harming economic activity. And finally, the last part of this section discusses how to design better EU and national fiscal frameworks to enhance the sustainability and the predictability of fiscal policy.

5.3. THE SITUATION OF PUBLIC FINANCES IN EUROPE AFTER COVID-19. A FOCUS ON SPANISH GOVERNMENT DEBT PROJECTIONS

The COVID-19 crisis leaves most countries with huge deficits and substantially higher public debt relative to the already high debt legacy of the Global Financial Crisis.

The euro area deficit is expected to reach 7.1% of GDP in 2021 on the back of a still high level of support provided to households and firms. According to the latest EC projections, the unwinding of emergency support measures and the rebound in revenues related to the economic expansion could reduce the budget deficit to 2.4% of GDP in 2023 (see EC (2021)), although with notable differences across countries (figure 1).

Figure 1. Budget deficits and goverment debt (%GDP) in Europe. *2021*



Source: AMECO and own elaboration.

The fiscal response combined with the sharp decline in economic activity has led to an unprecedented increase in debt-to-GDP ratios of over 13 percentage points on average. Public debt now represents close to 100 % of GDP in the euro area and is expected to decline only marginally, stabilizing at about 97% of GDP as from 2023. In just fifteen years the euro area has experienced two extreme crises that have led to debt ratios well beyond the thresholds for which the empirical literature tends to find a negative impact on economic growth.

This time debt reduction could benefit from three favourable tailwinds in comparison to the aftermath of the financial crisis. Firstly, growth has resumed rapidly. After the GFC it took seven years for euro area GDP to get back to its pre-crisis levels. According to the EC or the ECB projections, GDP is expected to exceed its pre-pandemic level already by the end of 2021, although with some differences across countries. Secondly, low interest rates offer a unique opportunity to put forward a gradual, sustained and growth friendly consolidation. Thirdly, investments and reforms promoted by Next Generation EU funds are crucial to avoid an abrupt interruption of support to the ongoing recovery while also also contributing to boosting potential output in the medium-term.

However, challenges ahead are significant and risks must be carefully assessed. Simulation exercises carried out by AIReF for the Spanish economy suggest that debt levels will remain close to 115% of GDP over the coming decades in the absence of additional measures.

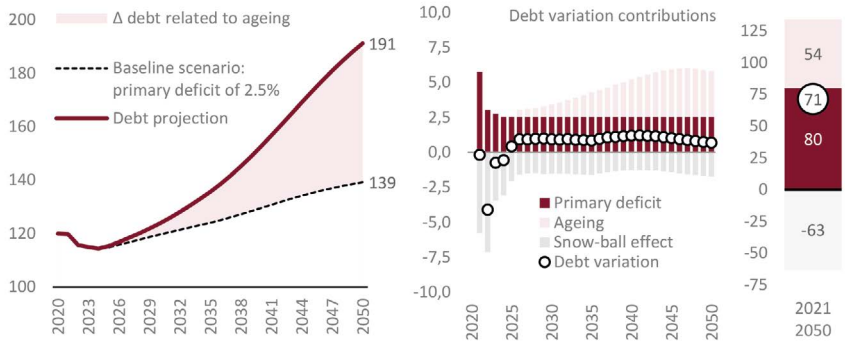
The expected rebound in economic activity driven by the Spanish Recovery, Transformation and Resilience Plan (PRTR), the cyclical improvement of the government balance and the gradual unwinding of emergency measures related to the pandemic, allow us to project a reduction in the debt ratio of between 3 and 7 points of GDP by 2024.

Thereafter, AIReF's projections point to a slightly increasing debt ratio dynamic if the structural primary deficit was to remain at the level projected for 2024 – that is, 2.5% of GDP in the case of Spain – and assuming average nominal GDP growth of 3.3% and implicit interest rates even lower than the minimum recorded in 2020. These simulations suggest that the positive contribution to the reduction in the debt ratio of the interest rate – growth differential (63 points cumulatively by 2050) would not be sufficient to offset the debt-increasing impact of maintaining a structural primary deficit (80 points cumulatively by 2050). Moreover, there will be additional upward pressure on debt dynamics due to the ageing-related expenditure over the next years. According to AIReF's projections, increasing pension expenditure could raise the debt ratio by an additional 54 points over the next thirty years if no measures are taken to address it. All in all, these different elements could bring debt levels to close to 190% of GDP by 2050.

Population ageing is a critical issue over the long term in almost all European countries, combined with very low rates of growth. Other contingent liabilities – notably related to government guarantees to the private sector, which amounted to about 15% of GDP in 2020 in Europe – represents an additional source of vulnerability. The persistence of a positive interest rate differential over GDP growth will be insufficient to offset these pressures (EC, 2021a).

The current situation represents an opportune moment to take stock of the measures adopted in the face of the crisis and the challenges ahead.

Figure 2. Debt projections. *Spain*



Source: AIReF.

5.4. THE RESPONSE OF FISCAL POLICY TO THE COVID-19 CRISIS

During the COVID-19 crisis, fiscal policies have gained a more prominent role as a macroeconomic stabilization tool to recover from this situation. The fiscal response to the pandemic has been unprecedented in peace times. Although the specific features and the intensity of budgetary assistance has varied from country to country – depending greatly on the soundness of public finances and the economic impact of the pandemic – most governments have implemented extraordinary measures to support households and firms during the hibernation of the economy and the subsequent gradual reopening. At the supranational level, policymakers have entered new territory by providing a genuinely European response for the first time in history.

This policy response has leveraged on the prominence of fiscal policy, whose role as an instrument of macroeconomic stabilization had been devalued in the wake of the financial crisis. The perceived effectiveness of fiscal policy as a stabilization tool has recently improved, supported by increasing empirical evidence finding a positive sign of fiscal multipliers, although contingent on to the state of the economy (Romer, 2011). Particularly, several empirical papers find that fiscal policy becomes more powerful in an environment such as the current one, with persistently low interest rates and monetary policy constrained at the zero lower bound (Arce, Hurtado and Tomas, 2016). Cross-country fiscal spillovers are also higher in such context (Alloza et al, 2020).

However, the analysis of national fiscal policy responses to the pandemic reveals a high degree of heterogeneity in the size of the support packages implemented across euro area countries, although their composition has been broadly similar.

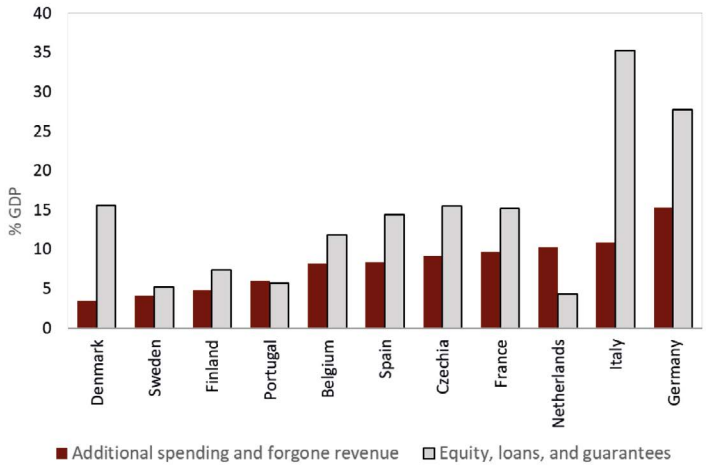
Comparing the size of fiscal responses across countries is complex for a variety of

reasons. Firstly, the economic impact of the pandemic and thus the need for fiscal support measures has been rather heterogeneous across countries. Secondly, the size of automatic stabilizers differs significantly between Continental Europe and the countries of Anglo-Saxon tradition that have a less developed social safety net. Finally, the response to the COVID-19 crisis has been unusual as it has entailed a wide range of measures including revenue and public expenditure budgetary measures (with a direct impact on budget deficits) and non-budgetary mechanisms, such as public guarantees for business, direct financing and recapitalisations which are more difficult to compare on a homogeneous basis.

Figure 3 shows an approximation to the size of the fiscal policy response distinguishing between budgetary and non-budgetary measures. We observe that euro area countries have been more cautious in general than other countries when allowing their budget deficits to increase. The US response has been of an extraordinary magnitude. Indeed, this response together with the so-called Biden stimulus approved in February 2021 have recently raised some concerns about the possibility that an excessive fiscal response may increase the threat of prolonged inflation (Blanchard, 2021).

Within the euro area, it is important to note that countries with less fiscal space and higher debt levels tend to show more moderate budget discretionary measures (it is the case of Spain, Italy, Portugal and France), while in Germany the budgetary response was higher. Aid to firms through public guarantee programmes and, to a lesser extent, direct financing have been the most extensive and sizeable items in the euro area response, particularly in countries with less fiscal space. Indeed, funds taken up in Spain reached 8.4% of GDP in 2020 and 10.8% in Italy, while it was lower than 2% of GDP in Germany (see Banco de España, 2021).

Figure 3. Composition of measures taken.



Source: IMF and own elaboration.

Euro area countries also adopted measures aimed at supporting liquidity to households, such as the moratoria on mortgage payments, loans and rentals introduced in Spain and Italy.[1] When it comes to measures with direct budgetary impact, euro area countries also adopted a wide range of provisions aimed at protecting income of the most vulnerable households. The most widespread measures included the strengthening or creation of basic income arrangements (Spain, Italy, Germany, France) and support for childcare (Italy, France). Many countries also bolstered unemployment systems and short-time working schemes (France, Italy and Spain), under which companies were allowed to suspend employment contracts for a specific period of time, thus reducing their staff costs, while maintaining the labour relationship with their workers. In Spain, the number of workers covered by these schemes climbed up to 18% of total employment in the second quarter of 2020 (14% in France and 10% in Italy). European economies also implemented provisions for the self-employed.

The severity of the crisis has also required a marked change in the response of European institutions, compared to what was observed until recently. On the one hand, COVID-19 has shown that neither monetary, nor fiscal policy by themselves could provide sufficient stimulus to ensure that economies did not collapse in the face of extreme output contractions. Achieving macroeconomic stabilization has therefore required monetary and fiscal authorities to join forces and act together, blurring the traditional boundaries between monetary and fiscal interventions.

Leaving aside the Eurosystem reaction, the initial response of European institutions to the crisis tried to enhance the capacity of response from national policies, rather than designing an EU-level response. In particular, the EC adopted a temporary framework to enable the Member States to use the full flexibility foreseen under State aid rules to support firms in difficulties due to the lockdowns. The activation of the general escape clause by the Eurogroup in March 2020 was even more critical. This clause was introduced in the Stability and Growth Pact (SGP) in 2011 as part of the 'six pack' reform and allows for a temporary departure from the budgetary requirements derived from the normal operation of fiscal rules, in a situation of a severe economic downturn in the EU. In March 2021, the EC decided that the conditions for maintaining the general escape clause in 2022 were still in place, and to de-activate it as of 2023, when almost all EU economies will have recovered their respective pre-pandemic GDP levels (EC, 2021b).[2] The EC also enacted several measures enabling the mobilisation of certain European Budget funds for tackling the consequences of the pandemic (Coronavirus Response Investment Initiatives).

But the severity of the corona crisis put the solidarity of the European Union to a test, particularly given the lack of common instruments to face such a challenge within the current institutional architecture. In April 2020, European leaders set up

[1] The UK adopted similar moratoria.

[2] According to the latest EC forecasts at least 19 Member States are expected to reach their 2019 levels of GDP in 2021, while all others are expected to reach that level in the course of 2022; in the case of Spain the recovery is delayed until 2023 (EC, 2021).

the so-called triple safety net, worth €540 billion to provide loan-based support to employees, firms, and countries via three schemes. First, the Support to mitigate Unemployment Risks in an Emergency (SURE) that involves loans to the most affected Member States for an amount of up to €100 billion to cover expenses related to partial employment or temporary unemployment schemes. The instrument will remain operational until 31 December 2022. The second element was the creation by the European Investment Bank (EIB) of a pan- European guarantee fund (endowed with €25 billion), that was expected to mobilize up to €200 billion for firms, especially SMEs. The third element was the creation of a special European Stability Mechanism (ESM) credit facility (the Pandemic Crisis Support Line) with the capacity to provide funding of up to €240 billion to countries, to cover direct and indirect health costs relating to the pandemic.

Nevertheless, the most sizable decision occurred on July 2020, when the European Council agreed to include as part of the Multiannual Financial Framework (MFF) for the 2021- 2027 period a temporary instrument geared towards the recovery, the Next Generation EU (NGEU).

5.5. FUTURE CHALLENGES FOR FISCAL POLICY

5.5.1. HOW TO GET THE MOST OUT OF NGEU

NGEU represents an extraordinary opportunity. Its aim is to support the Member States that were hit the hardest by the COVID-19 crisis with a €750 billion fund, the largest share of which goes to the Recovery and Resilience Facility (RRF) – 672 billion euros. This is an instrument with historic significance, not only because of its size but also because it is the first time the EU offers a common and united response to a severe disruption, so that future progress towards the creation of common fiscal instruments at the European level may depend on its success.

The funds available under the NGEU are sizable. It amounts to almost 5% of EU GDP between 2021 and 2026 and involves a significant redistribution of resources to the countries that have been most affected by the pandemic through loans and transfers. The budget of the RRF is certainly impressive: Spain and Italy could receive up to roughly 69 billion euros in transfers in that period. These are very significant amounts: to put them in context, public investment in Spain amounted to 25 billion euros in 2019.

Furthermore, the NGEU allows the European Commission to issue debt for the first time in history to finance these grants and loans to EU Member States. The debt incurred by the EU will be repaid between 2028 and 2058.

The governance of NGEU is also innovative as it will be implemented through National Recovery and Resilience Plans (NRRPs) designed by Member States, albeit subject to supranational approval and oversight, since the disbursement of the funds

will be conditional on the attainment of agreed milestones and targets. This bottom-up approach, where the Member States put forward their reform and investment priorities thus contributing to national ownership, is in stark contrast to the regular functioning of economic policy coordination in the context of the European Semester, where policy priorities are identified at the central level and then shared with Member States.[3]

The creation of NGEU funds is a unique opportunity to support economic recovery, increase potential growth and contribute to the reduction of public debt. Indeed, NGEU has a twofold objective. On the one hand, it aims at providing a coordinated stimulus to support recovery in the EU. The Commission's simulations suggest that, depending on how quickly Member States implement the RRF, real GDP in the EU could be up to 1.2% higher in 2022 compared to the counterfactual where no RRF funds were available. On the other hand, NRPs are expected to encourage a structural transformation of European economies over the medium term, with labour market, pension and tax reforms going together with investment measures geared towards the green and digital transitions.

At the time of writing 26 EU Member States (excluding the Netherlands) had submitted their NRRPs to the European Commission. The Commission has endorsed most of the plans (except for those of Hungary, Poland, Bulgaria and Sweden). All Member states have requested the maximum amount of grants, while only seven requested also loans (notably Italy and Greece). As a result, the overall size of the Recovery and Resilience Facility (RRF) is expected to be around €500 billion, although some countries such as Spain left open the possibility of applying for loans in the future.

The NGEU impact assessment involves a high degree of complexity. Empirical evidence suggests that investment expenditure, in its broadest sense (human, intellectual and physical capital), is associated with a high impact on GDP and employment, especially in periods of recession and if it is carried out in a coordinated manner as is the case with the RRF. However, empirical evidence on the economic impact of green transition-related spending is rather scarce and there is much vagueness and uncertainty about planned reforms in some countries. Moreover, the economic impact of these investments will not only depend on the nature and quality of the investments and on whether the project's interim objectives are met, but also on whether they are accompanied by the reforms needed to boost potential growth and, on the ability, to mobilize private investment (Bankovski et al (2021)).

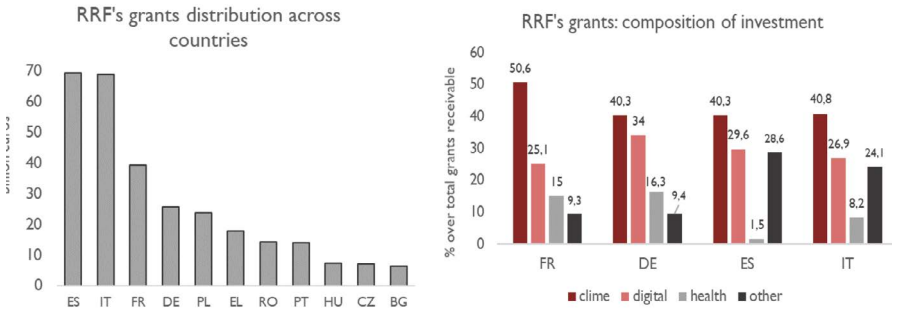
A comparison of the NRRPs submitted by Spain, Italy, France, and Germany – which are the main beneficiaries of RRF transfers representing, respectively, 21%, 20%, 12% and 8% of total grants – reveals that climate projects, followed by spending in digitalization, account for the bulk of investment (AIReF, 2021). The rest of the funds are distributed among various areas, such as territorial cohesion (France and Italy), innovation and research (Italy and Spain), social inclusion policies (Italy and Spain) and the

[3] The contrast is even starker when compared to the macroeconomic adjustment programs designed by the so-called Troika (the EC, the ESM and the IMF) after the sovereign debt crisis in the euro zone.

modernization of public administrations. The component with the greatest weight in each country reflects very different priorities: the high-speed rail network in Italy (13% of the total); housing rehabilitation and urban regeneration in Spain (9.8% of the total); research, health insurance, dependency and territorial cohesion in France (19.3% of the total); and sustainable mobility in Germany (19.4% of the total).

Reforms included in NRRPs also reveal significant heterogeneity. They are highly oriented towards improving the functioning of the administration of justice in the case of Italy; the digitalisation of public authorities and improving the coordination between the different levels of the federal state in Germany, or improving the efficiency of public spending in France. In the case of Spain, the labour market concentrates the largest number of reforms planned (11 out of 101), although the measures affect numerous areas such as pensions or the tax system.

Figure 4. RRF distribution of funds and composition of investment



Source: NRRPs and own elaboration.

The size of the funds to be absorbed will challenge many countries' institutional capacity to select and implement quality projects. Thus, the ex-ante assessment of projects as well as the continuous monitoring during the implementation phase will be crucial to ensure an adequate selection of projects and a prompt correction of potential deviations from targets and milestones. Furthermore, ex-post evaluations by independent researchers and institutions would also be desirable given the strategic importance of the plan. A proper implementation of this plan could lay the foundations for the future creation of a permanent central fiscal capacity for the EMU.

5.5.2. THE REDESIGN OF FISCAL POLICY AS THE RECOVERY TAKES HOLD: THE NEED FOR MORE TARGETED MEASURES

Economic policy is still designed and decided upon in an environment of extreme uncertainty where neither the duration of the pandemic nor its full economic consequences are yet clarified. However, now that the recovery is underway a fiscal exit strate-

gy from the substantial support is of paramount importance. While the EC and other institutions have warned against a premature fiscal exit, the strength of the recovery and the emergence of supply-side bottlenecks, suggest the need for targeted public support, oriented towards those most affected by the crisis and encouraging business investment to support the recovery and the green and digital transitions (the twin transitions) and mitigate the impact of the health crisis in some sectors.

In this vein, all euro area countries preserve nationally financed investment in the Draft Budgetary Plans designed for 2022, in line with the European Council recommendations. Indeed, the euro area aggregate investment to GDP ratio is projected to increase from 3% in 2019 to 3.5 % in 2023. Although a large part of this increase is related to investment financed by the RRF, nationally financed investment is also expected to increase in almost all Member States, including those with higher levels of debt (EC, 2021).

At the same time, a shared objective across the EU relates to favouring an efficient reallocation of resources across companies and workers. The pandemic has entailed changes in demand and preferences together with an acceleration of the pre-existing expansion of digital workplaces and e-commerce. These may imply changes in sectoral specialisation and the labour market with uncertain long-run effects. Despite social-intensive sectors can be expected to normalise over the coming years, certain firms are likely to go into insolvency once public loans, guarantee facilities and debt-servicing moratoria expire, triggering a rise in unemployment (Banco de España, 2021). At the same time the pandemic is likely to leave a lasting mark on certain socio-economic groups, increasing inequality and poverty. Most vulnerable groups include the young, women and self-employed as they are over-represented in more affected sectors and usually face higher rates of unemployment and underemployment when labour demand decreases; there is also evidence suggesting that migrant workers have been strongly affected by the crisis (Fana et al, 2020).

In this context, while maintaining income support schemes for workers in the most affected sectors and the most vulnerable households, active labour market policies take on special relevance to facilitate retraining and labour reallocation. In this sense, AIReF (2020) has carried out an evaluation of hiring incentives in Spain. The findings reveal the need to improve the design of these measures as positive effects on employment are modest and are mainly found in individuals with a medium-high level of education. In addition, these effects do not last over time once the incentive disappears. The design of more specialized active labour market policies, better targeted at specific participant groups such as young workers, could help to cope with emerging mismatches as in many countries firms reveal the need for workers and at the same time post many vacancies (Card et al, 2018).

Simultaneously, there is a need to evaluate and monitor the implications of the public guarantee schemes, state aid and short time work schemes implemented extensively during the pandemic. These measures, aimed to preserve viable firms and to support households' income, entail some potential side effects related to delaying the

restructuring of low-productivity firms that would have otherwise been downsized or closed. The empirical evidence on the functioning of these measures is rather limited. Besides, governments should engineer an effective exit strategy from these schemes, setting clear conditions for the closing down of non-viable firms and ensuring sound valuations of contingent liabilities (Demmou and Franco, 2021).

Finally, although addressing the health, social and economic consequences of the pandemic has required a large increase in public spending, it is necessary to analyse whether this increase becomes structural and generates permanent increases in some expenditure items. Indeed, according to the draft budgetary plans submitted to the EC, current expenditure is projected to increase in many EU countries (except for Spain, Malta and Slovakia), suggesting a permanent increase over and above the temporary emergency support deployed to tackle the COVID-19 crisis.

AIReF (2021) has warned about the need to monitor the risk that some exceptional expenditures related to the pandemic may persist over time without adequate funding and without being part of a clear and transparent medium-term strategy. This may be the case for the expansion of health services or additional educational hiring which may not return to pre-pandemic levels. Other types of measures such as updating pensions with the CPI or converting short time work schemes (ERTEs) into permanent mechanisms point to higher levels of spending.

5.5.3. THE REDUCTION IN GOVERMENT DEBT

The provision of adequately targeted fiscal support should come together with the design of a medium-term fiscal strategy aiming at tackling the macro-financial vulnerability posed by the current levels of indebtedness. Such strategy should already be put forward, regardless of the fact that its implementation be calibrated according to the evolution of economic uncertainty and the consolidation of the recovery that is underway.

Euro area government debt tends to depart from higher levels each time a crisis occurs reflecting both the decline of GDP and incomplete consolidation during good times. Fiscal space – which as the recent experience shows is crucial to respond to a collapse in demand – is shrinking. This is particularly so in countries with higher levels of debt, conditioning the capacity of national fiscal policies to respond to future economic shocks – as illustrated by differences in the response to the COVID-19 crisis.

Recent experience suggests the possibility that some events that were considered extremely unusual in the past, may have become more frequent (financial crisis, extreme climate events or health crisis). Moreover, uncertainties associated with structural changes and significant challenges ahead related to demographics, digitalisation and climate transition reinforce the value of a stability-oriented approach to the conduct of fiscal policy.

Despite that the factors behind the fall in interest rates are structural in nature (demographics and low productivity growth among others), changes in government fi-

nancing conditions cannot be ruled out, particularly in the current context of re-emergence of inflation. Indeed, the interest rate – growth differential may be endogenous to the level and dynamics of government debt (Wyplosz, 2019). If investors believe that debt is subject to sustainability risks, they will require a higher risk premium. Moreover, the interest rate-growth differential has fluctuated widely in the past and there is no guarantee that it will remain negative in the future, although historically it has been a frequent feature (Checherita and Domingues (2020)). In addition, large differences across countries are apparent: in the United States the spread has been continually negative since 1980, while in Italy the opposite sign is found reflecting the persistent low growth of the economy. In Spain, the differential has fluctuated being negative in the years before the financial crisis, positive during the sovereign debt crisis and negative thereafter. Recent uncertainty about the persistence of inflation and supply-side constraints that have emerged lately is translating into higher long-term interest rates.

Therefore, there is no alternative to designing a medium-term fiscal strategy, to be deployed taking into account the EU guidelines and at a pace synchronised with the overcoming of the economic and social crisis caused by COVID-19. The challenge is extraordinary. Simulations sketch scenarios in which stabilizing and reducing debt levels would require significant adjustments in a first instance, and thereafter maintaining very large and persistent primary surplus – that are rare from an historical perspective (Eichengreen and Paniza, 2014). But fiscal responsibility pays off (IMF, 2021). Governments that commit to sound public finances and that achieve high levels of fiscal transparency reap meaningful benefits: their budgets are more credible, their announcements are better perceived by the media, and they pay lower interest rates on their debt. On the contrary, less predictable fiscal policies make repricing of risks by financial markets more likely.

Although successful consolidation episodes have been infrequent in recent economic history some lessons can be drawn (Eichengreen (2021). First, the empirical literature confirms that economic growth is a necessary condition for a successful fiscal consolidation. Aggressive fiscal adjustments, such as those implemented in the aftermath of the financial crisis, can have adverse effects on debt levels as they reduce economic growth through the effect of fiscal multipliers. On the contrary, more gradual adjustments may face the risk of fiscal fatigue.

As seen in Table 1, which summarizes recent episodes of debt consolidation addressed by European economies, the largest episodes of consolidation in – such as those undertaken by Ireland and Belgium between 1993 and the mid-2000s and also Ireland in the period 2013-2019 – combined high economic growth with a notable improvement in the primary balance so that both factors contributed to the reduction of government debt. In the case of Spain, during the accession to EMU debt declined by almost 30 percentage points of GDP, although this episode relied to a greater extent on economic growth rather than budgetary adjustment in comparison to the other consolidation episodes mentioned.

Table 1. Consolidation episodes in Europe.

	Period	Intial debt (% GDP)	Final debt (% GDP)	Change in public debt (accumulated, pp GDP)	Length (years)	
Sweden	1985-1990	59,7	39,3	20,4	6	
Belgium	1993-2007	135,2	87,3	47,9	14	
Ireland	1993-2006	90,1	23,6	66,5	13	
Spain	1996-2007	65,4	35,8	29,7	11	
Italy	1994-2004	119,7	105,1	14,6	10	
Netherlands	1993-2007	75,4	43,0	32,4	14	
Finland	1994-2008	56,2	32,6	23,6	14	
Sweden	1995-2008	68,7	37,5	31,2	14	
United Kingdom	1995-2001	44,5	34,1	10,4	6	
USA	1993-2001	70,4	53,2	17,3	8	
Germany	2012-2019	81,1	59,6	21,5	7	
Ireland	2013-2019	119,9	57,4	62,6	7	
Netherlands	2014-2019	67,9	48,7	19,1	5	
Austria	2012-2019	81,9	70,5	11,4	7	
Portugal	2016-2019	131,5	117,2	14,3	4	

Source: AMECO and own elaboration

	Debt reduction determinants (total contribution, pp GDP)				Other relevant variables (period average)			
	Nominal GDP growth	Interest	Primary balance	Stock-flow adjustment	Real GDP growth	Inflation	Cyclically-adjusted primary balance	Interest rate
	–	–	–	–	2,4	4,4	6,1	6,1
	-53,2	72,2	-62,6	-4,2	2,5	1,5	4,7	5,6
	-59,6	22,8	-46,0	16,4	7,4	4,2	2,8	4,9
	-40,8	29,9	-24,5	5,8	3,8	3,2	0,8	5,3
	-40,2	61,8	-31,5	-4,8	1,7	3,0	3,4	6,7
	-29,1	27,1	-26,0	-4,4	3,0	2,2	1,8	5,6
	-19,4	15,1	-39,7	20,4	3,8	2,1	4,1	5,7
	–	–	–	–	3,1	1,4	3,2	5,3
	–	–	–	–	3,5	6,6	1,6	6,9
	–	–	–	–	3,6	6,3	–	–
	-18,3	11,0	-19,1	4,9	1,5	1,8	2,1	1,8
	-59,4	18,0	-5,9	-15,2	8,6	2,1	0,2	3,1
	-12,3	6,7	-6,9	-6,6	1,8	1,4	1,2	1,9
	-19,7	16,9	-7,2	-1,4	1,4	1,8	1,0	2,6
	-21,6	14,2	-9,2	2,3	1,8	1,7	1,2	3,3

When consolidation needs are demanding, it is essential to undertake an in-depth review of the quality of public spending, which can increase fiscal space. Moreover, large fiscal consolidation accompanied by policies and reforms boosting productivity and potential growth can be much less costly. In this context, NGEU is a historic opportunity to achieve these simultaneous goals.

It is interesting to note that the literature identifies several institutional features that can be relevant when implementing fiscal consolidations, such as binding medium-term targets, the existence of independent fiscal institutions, adequate implication and coordination across levels of governments –particularly in countries highly decentralised–, timely and accurate fiscal and budgetary statistics and sound fiscal rules.

5.5.4. THE NECESSARY REVIEW OF THE EUROPEAN FISCAL FRAMEWORK

Reforming the European fiscal framework is necessary to ensure the sustainability of public finances and the proper functioning of the EMU. In February 2020, the EC launched a review of fiscal governance (EC, 2020). The reasons for this review identified at the time were based on the pre-pandemic experience and included: (1) the excessive complexity of the variety of rules and procedures existing (with constraints on the level and debt dynamics, on structural and nominal deficits and on expenditure growth some of them graduated depending on the economic cycle and the reforms implemented); (2) their inability to prevent procyclical fiscal policies and the creation of fiscal buffers in good times; (3) an excessive short-term focus of fiscal policy guidance and surveillance which accentuates the reliance on unobservable indicators subject to high variability and controversy; (4) the lack of political ownership leading to weak compliance and continuous backloading of commitments and finally, an insufficient attention to the quality of public finances in a period of large investment needs.

To all this can be added the rigidity of a framework that elevated to the Treaty numerical references for the deficit and debt ratios resulting from 'historical accidents' that may not be appropriate in the current macroeconomic context. The 60% reference for debt was the average debt level in Europe registered when the Maastricht Treaty was finalised, and the subsequent 3% reference for the budget deficit is the one that allowed to converge to this level of debt with a trend growth of 3% and an average inflation rate of 2% projected at that moment.

Against this backdrop, the EC relaunched the public debate on the review of EU economic governance in October 2021 with the declared ambition to build consensus for 2023, when the general escape clause will likely be deactivated. While broad-based political appetite for a profound legislative change seems unlikely, a significant reform is still viable within the current legal framework.

The Stability and Growth Pact has been subject to an incremental reform process reflecting the tension between two legitimate forces. On the one hand, the demand for flexibility to adapt fiscal policies to economic circumstances (as in the 2005 reform) or to other major contingencies (such as a severe crisis or persistent low growth). On the

other hand, the need to preserve sound and sustainable debt levels in the long term tried to be emphasized after the sovereign debt crisis with the operationalization of the debt rule and the introduction of incentives to build fiscal buffers in good times with the introduction of an expenditure rule in the preventive arm of the Pact. However, these reforms did not prevent pro-cyclical fiscal policies and increasing debt in many Member States.

While the need for reform is increasingly recognised, its nature remains debated. Many reform proposals have been made suggesting a simpler framework with three elements: a medium-term debt anchor, an expenditure rule as the intermediate instrument and a single escape clause (Benassy-Quéré, et al. (2018), European Fiscal Board, 2021). While numerical rules provide clear and recognisable goalposts for supervision and accountability of policy makers, they are not without problems since they are hardly able to contemplate all the circumstances that will make greater flexibility necessary. Against this backdrop, other authors support the idea of abandoning numerical fiscal rules or reference values in favour of fiscal standards – qualitative prescriptions that leave room for judgment together with a process to decide whether the standards are met (Blanchard, et al. (2020)).

At AIReF, we believe that, whether in terms of principles or in the form of numerical benchmarks, the central pillar of the reform of the European fiscal framework should place debt sustainability at the heart of the surveillance system. The debt-to-GDP ratio still plays a subsidiary role in the current framework and most of the surveillance emphasis is put on the correction of annual budget balances in nominal or structural terms. There is a clear need to strengthen the medium-term dimension of the surveillance framework and IFIs could play a relevant role in this regard.

As in the case of monetary policy, the fiscal framework must deliver budgetary discipline in the form of a commitment to a debt level target, as a proportion of GDP, in the medium term. Such debt targets could be established considering country specific factors that may determine both the debt target and/or the pace of adjustment. Debt dynamics and sustainability depend fundamentally on the differential between the interest rate and the growth rate, on the capacity to maintain a sufficient primary surplus, and on other country-specific factors that need to be considered when defining a realistic strategy.

Expenditure multi-year commitments for the legislature could be the operational rule to achieve the debt reference. Expenditure levels are directly observable and more easily measured. Moreover the bulk of government expenditures can be controlled by the relevant budgetary authorities. Thus, the monitoring of multiannual expenditure plans – net of new discretionary revenue measures – favours transparency and accountability. Some authors argue that an expenditure rule is not without complexity (Marinheiro, 2021), but an expenditure rule is more predictable than annual structural balance targets whose calculation is subject to much variability.

This strategy needs to be based on more robust Medium Term Budgetary Frameworks (MTBF). Many EU member states lack a transparent strategy to articulate fiscal

and budgetary policies of a multi-year nature. Although EU law asks member states to formulate fiscal plans for at least three years ahead in the Stability or Convergence Programmes, targets are set on a "rolling basis" meaning that they are changed annually in many cases, without effective ex-post compensations of slippages with concerning to fiscal or budgetary targets. Furthermore, fiscal measures for outer years are often unspecified, with the corresponding lack of information and transparency undermining the overall credibility of budgetary forecasts and fiscal targets (Rodríguez et al, 2021).

In this framework, IFIs would become a more relevant actor, since they would provide their country-specific knowledge and would contribute to reinforcing the commitment of each member state to the debt reduction strategy. In particular, independent fiscal institutions could assess the appropriateness of medium-term debt targets and whether they are based on prudent estimates of a country's growth and interest rates, as well as facilitate the analysis of different debt trajectories and their macroeconomic implications. For example, IFIs could elaborate probabilistic scenarios for the debt-to-GDP ratio, conditional on the evolution of its main determinants, i.e. growth and interest rates, and assess the degree of feasibility of the primary balances required to reach any specific path. IFIs could also provide the best possible evaluations of contingent liabilities implied by ageing populations and on the fiscal implications of fiscal risks related to climate change, health crisis or natural disasters. They could also monitor the implementation of annual expenditure plans to detect any sign of deviation at an early stage and, if this were the case, recommend its correction. The role of IFIs could be also crucial in the coordination between national and EU fiscal frameworks.

Since independent fiscal institutions remain highly heterogeneous and not all of them have sufficient resources to deal with the tasks arising from this possible decentralization, it would be desirable to strengthen the capacity and independence of the IFIs.

Finally, coordination at the euro area level is also necessary. First, the approval of the debt target and the expenditure rule could be made by the Council, which could also trigger an excessive deficit procedure when a manifest violation of the country-specific expenditure rule is detected. The European Fiscal Board could be strengthened in various dimensions including its formal independence to effectively focus on area wide fiscal dimensions.

Finally, the revision of the governance framework has triggered a growing demand for a differentiated treatment of public investment via a golden rule – particularly considering the challenges derived from ageing societies, digitalisation and the green transition.[4] Although over the next few years the bulk of public investment could be financed by the RRF in several Member States, there is a wider public investment challenge beyond NRRPs. Conceptually, the arguments for a differentiated treatment of investment in fiscal rules are substantial: (a) inter-generational fairness requires the cost of public investment be borne by future generations who will benefit from it; (b) in the presence of deficit limits and increasing social spending pressures, socially desira-

[4] This had been partially acknowledged in the EU fiscal framework with the so-called investment clause. Recourse to this clause has, however, only been modest so far (EC, 2020).

ble public investment projects may not be undertaken leading to underinvestment; (c) efficient investments increase potential growth and may to some extent be 'self-financing' by raising future tax income. Nevertheless, risks and practical limitations are also important. For example, a golden rule may create distortions with favoured investments (i.e. green investment) preferred to other forms of capital or current spending, such as education or innovation spending, which also have a significant impact on long term growth. Moreover, this could be a source of complexity and controversy as it is not easy to determine which investments and there would be clear incentives to re-define other spending as an eligeble investment. There is a case to apply a more microeconomic approach to the analysis of public policies with an equivalent functional outcome. IFIs or other independent agencies can play an important role and contribute to the quality of public finances by strengthening the focus on the evaluation of public policies. There are strong synergies between fiscal surveillance, fiscal sustainability, and spending reviews – thus, the reviewed EU fiscal framework should acknowledge and exploit these synergies.

Moreover, the unequivocal commitment to the promotion of national discipline requires comprehensive national fiscal frameworks which are essential for more decentralised countries.

6. CONCLUSIONS

The exceptionally large and coordinated policy response has been successful in significantly mitigating the economic damage of the COVID-19 crisis in Europe. The response to the crisis was carried out quickly and forcefully at both the national and EU levels. With the support of monetary policy, fiscal policy has proven its worth under stress. to the post COVID challenge is rebuilding fiscal margins to cope with the extraordinary challenges going forward. In the coming years, the Recovery and Resilience Facility, will help the Member States achieve a sustainable recovery, supporting the green and digital transitions.

In any case, the deterioration of long-term growth expectations associated to the demographic transition and low productivity growth in Europe, the surge of age-related and health care spending and investment needs related to digitalisation and climate change will complicate the task for bringing down high debt, despite the low levels of long-term interest rates prevailing.

The current high levels of debt make it necessary to design a medium and long-term fiscal strategy that will allow room for manoeuvre to face future challenges. In just fifteen years we have experienced two extreme shocks, which have shaken the foundations of the functioning of the economy and the situation of public finances. The perception that these extreme shocks may become increasingly frequent in an environment of globalization of trade and financial relations and extreme phenomena associated with climate change or health crises alone justifies the need for room for manoeuvre at the national level, complemented by growing international coordi-

nation at least within European institutions. Fiscal space must also be generated to address the investment needs associated with the challenges of digitization, climate change and addressing spending pressures associated with population ageing. NGEU represents an opportunity that cannot be missed and must be complemented by a comprehensive public finance assessment strategy, which can play a key role in finding fiscal space.

Moreover, the unequivocal commitment to the promotion of national discipline requires solid national and European fiscal frameworks. There is a need to clarify the fiscal governance framework that will be applicable as of 2023. A simpler and transparent medium-term framework with an increasing focus on debt sustainability is a necessary condition. The role of national IFIs could be enhanced as they are well placed to carry out assessments of national fiscal measures and debt sustainability analyses under different risk scenarios.

BIBLIOGRAPHY

AIReF (2021). Report on the 2021-2024 Stability Programme Update.

AIReF (2020). Spending Review. Hiring incentives in Spain. Executive summary.

Alloza M., M. Ferdinandusse, P. Jacquinot and K. Schmidt (2020). "Fiscal expenditure spillovers in the euro area: An empirical and model-based assessment." Banco de España Occasional Paper, 240.

Arce O., S. Hurtado and C. Thomas (2016). "Policy Spillovers and Synergies in a Monetary Union," International Journal of Central Banking, vol. 12(3), p. 219-277.

Banco de España (2021). Annual Report.

Bénassy-Quéré, A., M, Brunnermeier, H. Enderlein, E. Farhi, C. Fuest, P. Gourinchas and J. Zettelmeyer (2018). Reconciling risk sharing with market discipline: A constructive approach to euro area reform.

Blanchard, O., A. Leandro and J. Zettlelmeyer (2020) Redesigning EU fiscal rules: From rules to standards. First draft: September 24, 2019. This draft: August 30, 2020.

Blanchard, O. (2021). US inflation is running high. What should we worry about now? PIIE.

Buti, M., G. Giudice and J. Leandro (2020). Strengthening the Institutional Architecture of the Economic and Monetary Union. Centre for Economic Policy Research.

Card, D., J. Kluve and A. Weber (2018). "What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations," Journal of the European Economic Association, 16(3), Pages 894–931

Checherita-Westphal, C., and J. Domingues Semeano (2020). Interest rate-growth differentials on government debt: an empirical investigation for the euro area. ECB Working Paper, 2486.

Demmou, L. and G. Franco (2021), "From hibernation to reallocation: loan guarantees and their implications for post-COVID-19 productivity," OECD Economics Department Working Papers 1687, OECD Publishing, Paris.

Eichengreen, B., A. El-Ganainy, R., Esteves and K. Mitchener (2021). In Defense of Public Debt. Oxford University Press, 2021.

Eichengreen, B. and U. Panizza (2014). A surplus of ambition: can Europe rely on large primary surpluses to solve its debt problem?. Working paper 20316 NBER Cambridge Massachusetts.

European Commission (2021). From recovery to expansion, amid headwinds. European Commission Autumn 2021 forecast, European Commission, Brussels.

European Commission (2021a). Debt sustainability monitor, 2020. Institutional paper 143. European Economy. Brussels.

European Commission (2021b). One year since the outbreak of COVID-19: fiscal policy response 1_en_act_part1_v9.pdf (europa.eu)

European Fiscal Board (2021). Annual Report.

Fana, M., S. Tolan, S. Torrejon, C. Brancati and E Fernandez-Macias (2020). "The COVID confinement measures and EU labour markets," EUR 30190 EN, Publications Office of the European Union, Luxembourg. ISBN 978-92-79-18366-2, doi:10.2760/69199, JRC120578.

Goodhart, C., and M. Pradhan (2020). The Great Demographic Reversal: Ageing Societies, Waning Inequality, and an Inflation Revival. Palgrave Macmillan, London, UK.

International Monetary Fund (2021). Fiscal Monitor. Washington.

Rodriguez, L (2021) (coord). How to strengthen fiscal surveillance towards a medium-term focus?, Network of the EU Independent Fiscal Institutions (IFIs), paper prepared for the European Fiscal Board Annual Conference, 2021.

Romer, D. (2011). What have we learned about fiscal policy from the crisis?. Paper presented at the IMF conference on Macro and Growth Policies in the wake of the crisis, March 2011.

Wyplosz, C. (2019). Olivier in Wonderland. VOXEU.org

6. A RETURN TO WHAT FISCAL RULES?

Grégory Claeys and Maria Demertzis
Bruegel

6.1. ABSTRACT

The temporary suspension of the fiscal rules during the pandemic crisis offers a unique opportunity to revisit their effectiveness, and importantly review how suitable they are to meet the crucial challenges of the future. As fiscal policy is expected to play a more active role in the future, we must correct for at least the main faults of the current rules, namely their procyclical nature as well as their effective disincentivising of investments. We discuss how moving away from unobservable variables is the first step to improving the systems. We end by arguing that beyond fiscal rules we must rethink the whole fiscal framework in order to ensure that fiscal policy is effective and debt sustainability is not compromised.

6.2. INTRODUCTION

A rather broad consensus exists now in academic and policy circles[1] – that the current fiscal framework is flawed and in need of change. The main reasons are that over the years, the rules have become too complex to be implementable as they target multiple metrics and lack a proper enforcement mechanism. This makes them unpredictable and ultimately non-credible.

It is also agreed that the way the unexpected technical flaws in the design of the rules made fiscal policy procyclical both in good times and in bad, leading to an

[1] This includes also the European Fiscal Board advising the European Commission on these matters. See Thygesen et al. 2020.

altogether ineffective fiscal policy both from a debt sustainability and stabilisation perspective. Also, by failing to discriminate between expenditure components, these rules have penalised investments leading to the existence of significant investment gaps.

In addition, a new debate has emerged on the future objectives of the fiscal framework: on top of ensuring debt sustainability and macro stabilisation, fiscal rules could also try to influence the composition of fiscal policies in EU countries, which in turn affects debt sustainability as well. This debate is very much driven by the large investments needs for the green and digital transitions. There exist various ways on how to do that, both on the expenditure side, e.g. by incentivizing green public investment, and on the revenue side, e.g. through carbon taxes to boost private investments.

More generally, the role of "*good debt*" has been recently highlighted by Italy's prime minister Mario Draghi in order to finance expenditures that increase potential growth such as public investment, but also R&D, education, health expenditures, etc., (Draghi, 2021) but also to improve the stabilisation function fiscal policy (as different spending can have different multipliers). These arguments are supported by empirical evidence (with large cuts in public investment during consolidation episodes) and theoretical justifications to do this (negative externalities, free riding in achieving common priorities).

The suspension of the Stability and Growth Pact (SGP) until 2023 thus represents a unique opportunity to reform the rules in these directions, before they are reactivated. However, the limited timeframe available means reforms cannot involve Treaty changes. Only a detailed proposal of changes in secondary legislation made by the Commission in early 2022 could be discussed by member states and adopted before 2023. Even if a long-term discussion on the future of the fiscal and political union is warranted, the current discussion should focus on changes in fiscal rules that are both desirable based on first principles and that can realistically be achieved before the probable reinstatement of the SGP in 2023.

But before that, as rightly pointed out by the European Commission, European countries need to "*build a broad-based consensus on the way forward well in time for 2023*" (European Commission, 2021) on the objectives of the fiscal framework: they need to make sure that after 2023 the fiscal framework should ensure both sustainability and stabilisation, but also decide whether they also want the EU fiscal framework to influence the composition of fiscal policies and in which way.

Going forward the European fiscal framework will have to reflect a set of new circumstances:

- we face now historically high levels of debt levels, especially after COVID-19, but we also face historically low interest rates, which, at least for the moment, allows to use fiscal policy at a low cost.
- In the meantime, monetary policy is stuck at the effective zero lower bound and there is a need for fiscal policy to play a more important role to reach output potential and full employment.

- There is a window of opportunity to use r-g<0 to invest in order to green our economies, and deal with the digital transformation.

In what follows we first review how the role of fiscal policy might be changing but also how the current fiscal framework has failed to provide help in macroeconomic management.

6.3. WHAT WILL THE ROLE OF FISCAL POLICY BE?

When it was first built, the EU framework was intended to prevent fiscal indiscipline by member states and to stop it spreading across the eurozone. Its design reflected the prevailing economic orthodoxy in the 1990s on the role of fiscal policy. This emphasised automatic adjustments in tax revenues and spending to stabilise income, consumption and business activity over the business cycle.

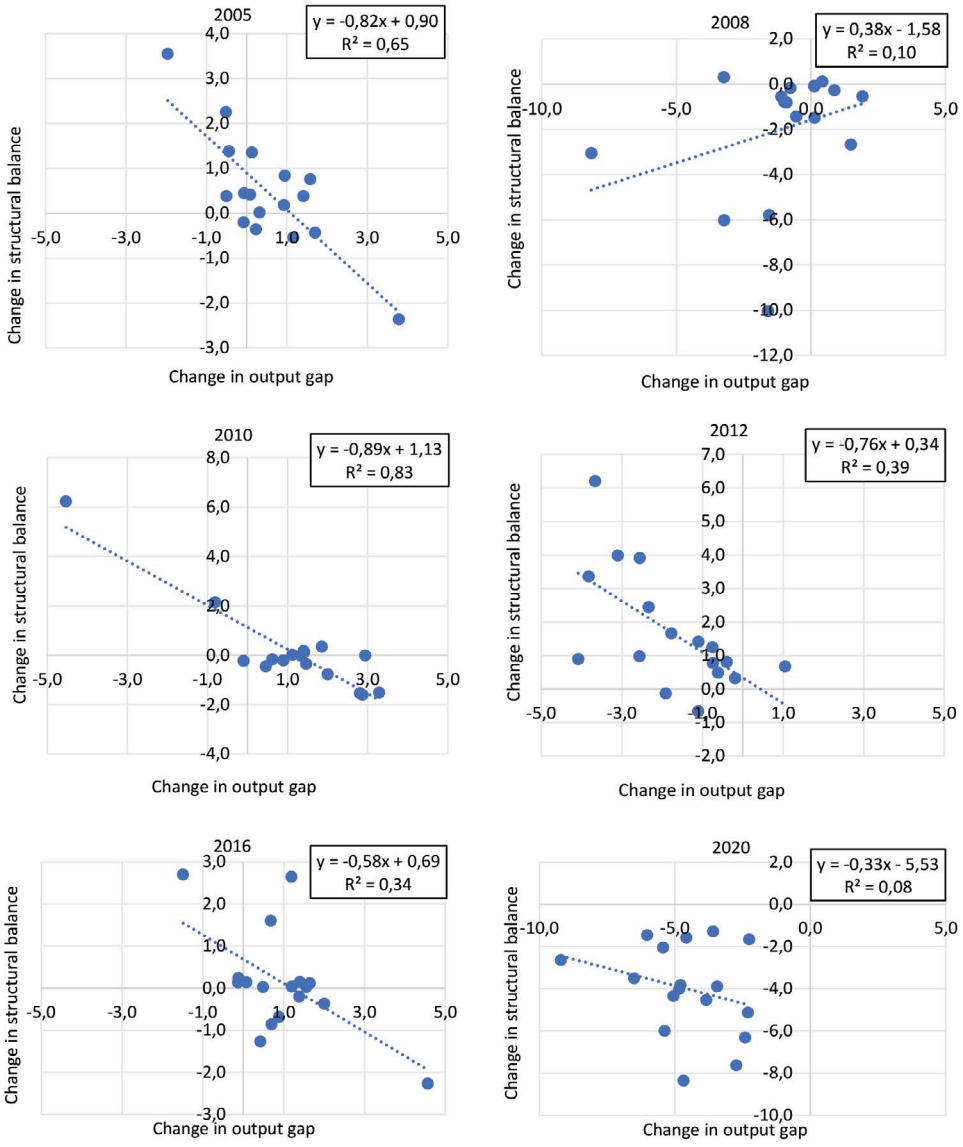
Any fiscal policy that attempted to go beyond these automatic stabilisers was likely to cause inflation. Consequently politicians, who could have an incentive to overspend, ought to be institutionally constrained. Today, however, after a global financial crisis and now a global pandemic, two once-in-a-lifetime shocks in the space of just over a decade, the economic context is very different. Both these episodes show that fiscal policy is about more than just automatic stabilisation, although at first policymakers in Europe were slow to recognise this — partly because of the grip exerted by the old orthodoxies, but mostly because of the fear of fiscal spillovers across borders. In each case the policy response, at the macro level, had to be sufficient to cushion the severity of an economic shock. This was not the case during the euro crisis, but during the pandemic, fiscal policy protected companies, as well as employment and households. The response to the crisis was both timely and on a sufficiently large scale, aided by the newly created European Central Bank's Pandemic Emergency Purchase Programme (PEPP), which helped keep the cost of borrowing low by avoiding liquidity crises in the sovereign bond markets such as the ones we witnessed during the euro crisis.

Any new framework will have to reflect this reality of the future role of fiscal policy, but it also needs to correct for a number of flaws. Looking back, we observe that fiscal policy has been largely procyclical in the past 20 years when it ought to be countercyclical and the immediate victim to any attempt to fiscally consolidate has been investment. We discuss this next.

6.3.1. EMU AND PROCYCLICAL FISCAL POLICY

Even if the use of these measures is sometimes questionable (especially in real time, as we will discuss later), confronting the historical yearly change in structural balance against the yearly change in output gap since the Maastricht criteria were established in1992, the procyclicality of fiscal policy becomes quite evident in euro area countries, as shown in Figure 1.

Figure 1: Yearly change in structural balance and output gap, percentage points.
(Selected years).



***Source**: Bruegel based on IMF World Economic Outlook.*

***Note**: Current euro area members are included prior to their adoption of the euro, meeting the Maastricht criteria in the years prior to adoption was a necessary step.*

There are two main observations to make. First, each country's position within the four quadrants is relevant. A traditional Keynesian view of fiscal policy would place countries in one of two quadrants: the first (++) or the third (–). In times of increase in the output gap (i.e., times of economic growth) an increase in the structural balance is associated with less accommodative discretionary fiscal measures. Similarly, in the third quadrant, when the output gap decreases and becomes negative, the structural balance should decrease as a result of the corresponding discretionary measures to stimulate demand. This was the case in 2020, with every single country in the third quadrant. However, this is not often the case. Since 1992, only around half of the euro area countries were in one of those two quadrants in any given year, and in 2012 (at the height of the sovereign debt crisis) only three were: Estonia, Finland and Malta. As we discuss later this was in part due to flawed recommendations by the European Commission at the time.

Second, the correlation between the change in the output gap and the change in the structural balance is also informative. We would expect this correlation to be positive, or in other words the greater the fall (rise) in the output gap, the greater the change in the structural balance. Figure 1 plots this relation for a selected number of years. This relation is weak and ambiguous before the introduction of the euro, but after 2002, the relation between those two changes is positive only in 2007 and 2008. That is, only in those two years did countries with the greatest deterioration in their output gap on average also reduce their structural balance more (indicating an increase in discretionary fiscal measures). In all other years between 2003 and 2020, countries with a greater annual fall in their output gap on average undertook less discretionary fiscal policy than those with an increase (or smaller decrease) in their output gap. The counter-cyclical measures adopted in 2008 were encouraging and unsurprising given the dire economic context, yet the situation reverted quickly and by 2010 the relationship was strongly inverted again.

Even in 2020, when every single euro area country saw a negative change in their structural balance in response to the COVID-19-induced economic downturn and a shift in attitudes on the need for expansive fiscal policy was evident throughout the EU, we observe a negative correlation. This means that countries where the economic impact of COVID-19 was comparatively lower (with a smaller decrease in their output gap vis-à-vis 2019) also generally implemented larger discretionary fiscal measures, evident in the deterioration of their structural balance. This also suggests that fiscal policy was not counter-cyclical enough during good times and that countries with higher debt-to-GDP ratios feared initially they didn't have enough buffer to implement strong discretionary measures.

6.3.2. PUBLIC INVESTMENT AND EUROPEAN FISCAL RULES

Public investment in many European countries remains very low compared to other developed economies, especially since the great financial crisis of 2008.

The popularity of balanced-budget rules in the 1980s and 1990s spawned a series of academic studies on the effects of fiscal consolidation on government fixed capital formation. This research consistently shows such consolidation programmes have a particularly strong negative effect on the level of public investments, which falls consistently more than other types of public expenditure. Roubini and Sachs (1989) find that capital expenditures are the first to be reduced, often drastically, during periods of restrictive fiscal policy given as they are the least rigid component of the budget. Similarly, de Haan *et al.* (1996) explain the decline of government capital formation by its disproportionate decline in times of fiscal tightening. Peletier *et al.* (1999) introduce a model that indicates that a balanced-budget rule induces below-optimal levels of investment, even as they concede exceptions for public investment are hard to introduce, primarily given difficulties classifying investment and the government propensity to exploit such exceptions.

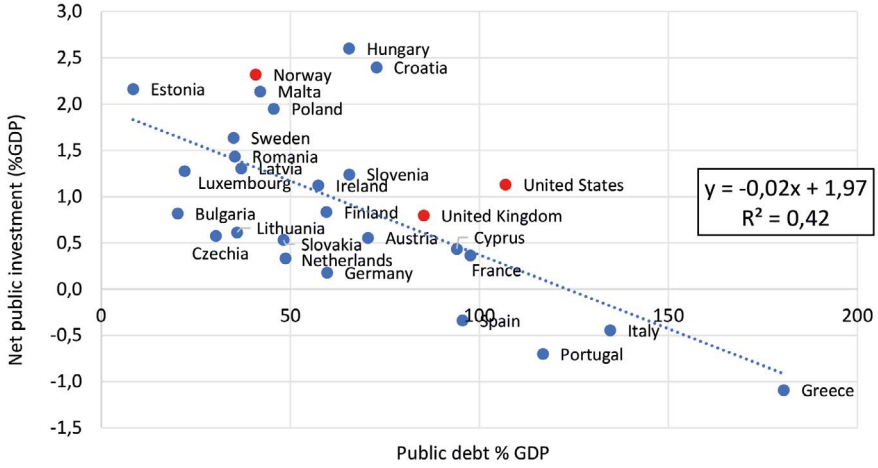
Data on fiscal adjustment programmes between 1960-94 exposes a similar pattern: Alesina and Ardagna (1998) show public investment as a share of GDP to be 16 percent lower in the two years following a successful adjustment programme. This was found to be even higher in countries which had high debt levels at the time: public investment fell by 40 percent in Belgium (1986-87) and 29 percent in Ireland (1985-86), and did not recover in the years following the adjustment. More generally, Blanchard and Leigh (2013) find not only that is fiscal consolidation associated with lower investment growth, but this decline is three times the size of the fall in consumption. Similarly, Romer and Romer (2010) show investment growth declines four times faster than consumption following a tax increase.

That said, some disagreement remains on the desirability of fiscal laxity or simply exceptions to budgetary prudence when it comes to public investment. For example, Kellermann (2007) found the social opportunity cost of debt-finance public investment was higher than that financed by taxes, indicating a benevolent government would raise the latter to fund investment.

In light of this literature, EU fiscal rules have received attention for their possible role stifling public investment. Turrini (2004) finds some evidence of this especially in the early days of the Maastricht criteria (although his results leave room for ambiguity). Most EU countries are characterised by low levels of public investment, in particular those with larger public debt. To take an example (but this is true over many years), Figure 2 exhibits an evident negative relation between levels of public debt and net public investment (gross investment minus the depreciation of capital stock) in 2019. Not only did investment not recover after the GFC, but in 2019 net public investment was still negative in Italy, Spain, Greece and Portugal, four member states that experienced substantial fiscal constraints during the sovereign debt crisis. More generally, large EU countries, like Germany, France, Italy and Spain, have much lower investment levels than other large economies such as the US or the UK.

As a result, numerous proposals have emerged in the aftermath of the sovereign debt crisis and even more so following the COVID-19 pandemic in order to increase member state capacity to undertake investments.

Figure 2: Net public investment and public debt in 2019. *% of GDP.*



***Source**: Bruegel based on European Commission AMECO database, Eurostat, IMF World Economic Outlook, April 2021.*

The sovereign debt crisis and the poor recovery of European public investment, in the periphery especially, but generally throughout the continent, resulted in several of these proposals. Truger (2015) call for a golden rule that allows for deficit-financed public investment to be included in the EU's fiscal rules, both for growth and intergenerational fairness purposes. He proposes a simple calculation that subtracts military expenditure and adds investment grants for the private sector to current net public investment calculations. Barbiero and Darvas (2014) similarly examine how net public investment recovered elsewhere but not in the EU following the 2008 crisis, and was particularly poor in fiscally constrained countries. They similarly lay out a set of proposals for an asymmetric golden rule to protect and incentivise public investment, to come hand in hand with improvements in budgeting, transparency and project assessment. Bogaert (2016) proposes a change in accounting within the SGP so that public investment becomes a core aspect of structural policy (and not a cyclical instrument) while maintaining much of the remaining current structure. It should be noted that other papers have also emerged arguing against a golden rule, including Bundesbank (2019) which examines Germany's unsuccessful experience in that regard (as a result the German golden rule was scrapped in 2011).

The COVID-19 pandemic has laid bare the need for a reform in the EU fiscal rules, before their current suspension ends. In light of the accelerated shift in the consensus over the merits of fiscal policy, it is unsurprising that calls for a bigger role for public investment have also grown. Darvas and Anderson (2020) present many of the arguments in favour of changing how public investment is treated in EU fiscal rules: intergenerational fairness, avoiding strategic underinvestment due to deficit limits, improved medium-term fiscal sustainability with higher potential growth, the spread of the cost

of public investment across years of use (as is done in corporate accounting). The authors also acknowledge some of the issues around a golden rule (difficulties classifying expenditure, possible spending distortions, protracted deficits), yet they firmly propose for a multi-year ahead expenditure rule, augmented with an asymmetric golden rule in times of recession. Thygesen et al (2020) call for growth-enhancing expenditure to be protected, after decades of declining growth-enhancing public expenditure necessary for improving the resilience of our economies. Bofinger (2020) similarly proposes the introduction of a golden rule in EU fiscal norms that excludes public investment from deficit targets and thus eases "the EU fiscal straitjacket." Finally, even if Martin *et al.* (2021) do not support a golden rule given the possible distortions in the mix of investment expenditure and other growth enhancing expenditure, they consider that Independent Fiscal Institutions (IFIs) and the European Commission should take into account the different impact of different kinds of expenditure on potential output and ensure that climate investments are not postponed.

6.4. GETTING TO BETTER FISCAL RULES

Generally, a reformed fiscal framework should be guided by a number of first principles, that will help make fiscal policy an effective macroeconomic management tool and ensure debt sustainability:

- The rules should be simpler, so that they are easier to communicate by policy makers and legislators so that they are understood by all stakeholders and by consequence assume ownership.
- The rules should move away from unobservable variables with high measurement errors in real time: this is particularly true of the structural deficit and the output gap. We will discuss this later in greater details.
- The rules should focus on large, unwarranted potentially dangerous deviations as required by Article 126(2) of the Treaty on the Functioning of the European Union (TFEU), and should not try to micromanage national fiscal policy on a yearly basis with adjustment requirements that are often below measurement errors.
- The medium-term targets of the framework should remain country-specific (like the current medium-term objective is country specific), while the long-term target, the 60% of GDP limit for the public debt ratio, could remain universal as it is stipulated by the TFEU (even if this number is not justified by economic theory or empirical research). Debt sustainability depends on country-specific parameters (r, g, politically acceptable primary surpluses in the future if needed), so medium-term targets should remain country specific too and take these variables into account. We appreciate that this could complicate the nature of the rules but there is no reason fiscal adjustments should be similar in very different countries.
- The rules should take a medium-term perspective to incentivize countries to

improve medium-term planning (for the moment medium term plans that are part of current framework are often a box-ticking exercise, as shown by the EU IFI network, 2021). The implementation of the rules should focus on medium-term debt target and not on yearly changes (see for instance Darvas *et al.* 2018).

- The rules should get rid of some of its most complex exceptions and make escape clauses easier to trigger (also at country level) and possibly more frequent.
- The rules should take the monetary policy situation intro consideration: when monetary policy is constrained by the zero-lower bound, fiscal policy not only needs to stabilise the economy (and help bring inflation towards the target) but is also able do it cheaply thanks to low long-term rates. Such an attempt would really make better use of fiscal-monetary cooperation, necessary for effective macroeconomic management.
- The fiscal framework should make clear that it is not aiming at being symmetric (to deal with negative demand externalities resulting from a country running a tighter fiscal policy than what would be desirable from the euro area perspective as a whole). This has proved to be impossible in practice (as it is difficult to ask a country to do more at the expenses of its own taxpayers to help its partners abroad). Instead, a central instrument could be agreed on to play that role, as a complement to the reform of the fiscal rules.

As we think about reforming the rules, two specific issues that could make an important difference, to improve the countercyclicality of the rules and to take into account the large investment needs of the future.

6.4.1. REDUCE THE USE OF MISMEASURED UNOBSERVABLE VARIABLES AND SIMPLIFY

In theory, the current fiscal rules, which have been adjusted over the years to take into account the business cycle, could do a good job, but in practice they face major hurdles (Claeys *et al.* 2016). A key indicator used in the current rules is the structural budget balance. This is the government budget balance corrected for the effects of the business cycle and one-off payments (such as bank bailouts).

According to the structural deficit rule, if the structural deficit is too high compared to the country's medium-term objective, then countries must adjust their budgets. In theory, when a recession hits, the actual budget deficit automatically deteriorates because of falling tax revenues and increased unemployment benefit payments. But if legislations do not change, the structural balance does not change and therefore the rule should not trigger austerity policies.

But in practice the structural budget balance is hard to estimate in real time. The estimate relies on uncertain assessments of the economic cycle (the output gap) and its impact on government revenues and spending. Estimated changes in the structural balance are typically revised by more than half a percent of GDP (Claeys et al. 2016,

Anderson and Darvas, 2020), which is more than the adjustment that the rules require. It seems inconceivable that recommendations for fiscal policies should be based on such an unreliable indicator, especially because during crises, measurement problems worsen at the moment when clear indicators are most needed. Unsurprisingly, academics and even finance ministers of several euro-area countries have expressed doubts in recent years about EU methods for estimating the cyclical position of the economy and its implications for analysing budgets.

Economic forecasts are also a major source of errors. Current fiscal rules rely on European Commission forecasts on growth and inflation, which often turn out to be wrong. During and in the aftermath of the euro crisis, the European Commission repeatedly forecast that the economy would return to growth and inflation quickly towards 2%, a fact that did not happen. As a consequence, policy recommendations based on these estimates and forecasts actually made the economic situation worse during the period 2010-15. Forecasting accurately is certainly very difficult, especially in uncertain times, and other forecasters, such as the IMF, the OECD or private institutions, did not do better than the European Commission. But it would be better to have fiscal rules which are less dependent on economic forecasts and mismeasurement-prone output gap estimates.

Another important issue is that even though countries can provide additional stimulus for one year by entering an excessive deficit procedure (EDP), when a recession lingers for several years, current fiscal rules at best allow for a deceleration of fiscal consolidation, when a sustained stimulus may instead be needed. Based on such rules, policy recommendations were largely mistaken already before the crisis and eventually worsened the economic situation in Europe during the crisis, as most euro area countries started to consolidate their public finances as soon as 2010, instead of waiting for the best time to do it. This is indeed what Figure 1 showed.

Another key problem with the current EU fiscal framework is the opaque web of "flexibility" clauses. This leads to never-ending bargaining between member states and the European Commission about the implementation of the rules, which undermines trust in them. Several politicians in countries that do not fully respect the rules regard the rules as inappropriate and openly disregard the rules, while politicians in countries that tend to comply with the rules worry that the rules are not enforced on their partners. In these circumstances, preserving the fiscal framework as it is today would be harmful.

One way of removing this procyclicality as we think about revising the Stability and Growth Pact and the Fiscal Compact is the following. First, the 3 percent deficit and the badly measured structural deficit should not be used anymore as operational targets for fiscal policy. Second, the fiscal framework should focus on a rule limiting the growth of nominal public expenditure, excluding unemployment insurance expenditure and one-off expenditures. According to this rule (explained in detail in Claeys *et al.*, 2016), the annual growth of nominal public expenditure should not exceed the sum of the country's potential real GDP growth plus the central bank's inflation target (2 per-

cent per year). This last element would increase its countercyclicality and help the ECB reach its target (as also pointed out recently by Lane, 2021). In bad times, this would reduce the incentive of governments to cut expenditures. Even if tax revenues fall and spending on unemployment increases, governments would still be allowed to support growth through deficits. In good times, this would dampen excessive booms, such as those in Ireland and Spain before the crisis, because governments would not be allowed to spend the extra tax revenues generated by bubbles. This limitation of expenditure would also take account of the level of public debt. Countries with high debt would have lower spending growth than those with low debt, in order to ensure long-term fiscal sustainability. Third, the opaque web of flexibility clauses in current fiscal rules should also be radically reduced. One way of doing that is by tasking the Commission with the help of the European Fiscal Board and EU Independent Fiscal Institutions (IFI) Network to assess when countries or the whole region can deviate from the rules in exceptional times, as it was done during the COVID-19 crisis.

Such an overhauled framework would be simpler, more transparent, and easier to monitor than the current system and would avoid relying on an unpredictable indicator. It would thus be more conducive to the two desirable objectives of sustainability and stabilisation. Incentive compatible rules will mean that countries will follow them, not because of fear of sanctions, but because they agree that the rule represents the best guidance for their fiscal policies to be supportive of growth and without jeopardising sustainability.

6.4.2. INCENTIVISE GREEN INVESTMENTS

Another important point to consider is how the European fiscal framework should try to influence the composition of fiscal policies of member states. In particular, how it could be adjusted to incentivize EU countries to green their economies and allow them to invest massively in green public investments that will be needed for the ecological transition.

Darvas and Wolff (2021a) estimate that additional public investment of the order of between 0.5 percent and 1 percent of GDP will be required annually during this decade to meet EU climate goals. They advocate for a green golden rule that excludes net green investment from the EU fiscal indicators used to measure fiscal rule compliance, and thus avoid underinvestment due to deficit constraints. Other global estimates of investment needs are summarised in Lenaerts *et al.* (2021) and include a those recently developed by the International Energy Agency which estimates annual investments globally stand at $2 trillion per year or 2.5 percent of global GDP and should rise to $5trillion by 2030 (and remain so at least until 2050). The International Renewable Energy Agency frontloads these investments, considering $5.7 trillion is required annually until 2030, while Bloomberg New Energy Finance estimates yearly investment requirements of between $3.1-5.8 trillion up to 2050. Finally, the European Commission estimates, only in the EU, meeting 2030 targets will require €360 billion in additional investment annually.

Corporations and households will be responsible for the majority of green investments, but public investment will also be needed because of the public-good nature of some of the investments (e.g., to deploy a sustainable transportation system, or to renovate public buildings and social housing to make them energy efficient). Given the relatively small size of the EU budget (despite the welcome addition of the Next Generation EU programme in the next 5 years), most of these public investments will still have to be carried out at the national level. But this means that decisions, and the allocation of funds will be in the hands of national governments and not under the control of the EU. So, if the European Commission wants to foster investment to accelerate the transition, it must find a way to encourage green public investment in member states. The main tool for the EU Commission to do this is the European fiscal framework (Claeys, 2019).

As discussed earlier, the European fiscal rules should be reformed to deter countries from slashing public investment when they consolidate their public finances and to ensure that they are able to take advantage of favourable interest rates to invest in public goods. One way to do that would be to include some form of golden rule in the European fiscal framework to allow the financing of investments through the issuing of debt or at least to change the way public investments are treated in budgets. This could be done by treating them in the same way that corporate investment is accounted for by smoothing investment expenditure over the whole service life of the investment (as in the expenditure rule proposed in Claeys *et al.*, 2016 and discuss in the previous section).

And yet, if an agreement cannot be found to reform thoroughly the European fiscal rules to make them more investment-friendly in general, a useful reform would be to authorise deficit-financed green investment during the transition. One way to put in place a form of "green golden rule" would be to revise the investment clause of the European fiscal framework by exempting public investments that help mitigate or adapt to climate change.

In fact, the current clause already allows for deviation from the structural balance medium-term objective (MTO) to finance investments "*with positive, direct and verifiable long-term effects on growth and on the sustainability of public finances*" (European Commission, 2019). Given the potentially high risk in the long run of climate change for public finances, it would not be a stretch to apply the clause to green investments.

However, other refinements would be necessary to transform the clause from a small and temporary exemption that can only be used in bad times to a more significant and permanent exemption for green investment from the rules, also in good times. Indeed, the current version of the investment clause is subject to the following conditions:

- The member state's GDP growth is forecast to be negative or to remain well below its potential (resulting in negative output gap greater than 1.5 percent of potential GDP).
- The member state remains in the preventive arm and an appropriate safety margin with respect to the 3 percent of GDP deficit reference value is preserved.

- The projects should be co-financed by EU funds, including through EFSI.
- The deviation should not exceed 0.5 percent of GDP, and in cumulative with the structural reform clause it should not exceed 0.75 percent of GDP.
- Co-financed expenditures should not substitute for national investments.
- The MTO should be reached during the 4-years of the Stability or Convergence programme.
- The exemption is granted for one-time only during the adjustment path towards the MTO.

As a result of these very restrictive conditions, only two countries, Italy and Finland, have ever used the investment clause (European Commission, 2018). The current investment clause is established in the Code of Conduct of the Stability and Growth Pact (SGP), modified for the last time in 2017 (Economic and Financial Committee, 2017). The clause actually provides guidance on the application of Articles 5.1 and 9.1 of Regulation (EC) 1466/97,[2] which is the legislation (amended in 2005 and 2011) authorising "*temporary deviations*" from the adjustment path towards the MTO in case of actions that have long-term positive budgetary effects. Given the more permanent nature of the current reason to invest (to accelerate the transition in the next 10 years), the revision of the SGP Code of Conduct will probably not be enough this time, and a revision of the Regulation will also have to be pursued to increase the flexibility.

However, to avoid any abuse of such a green investment clause by countries that might be tempted to apply the exemption to their current expenditures, two safeguards could be introduced in the new legislation:

- First, the maximum amount of green investment exempted could be related to the level of the 'green investment gap' in each country, which would be discussed and determined each year as part of the European Semester.
- Second, clear accounting rules would be needed to separate investment in the low-carbon transition from other expenditures. This should be facilitated by the introduction of an ambitious taxonomy for sustainable finance (which was introduced in July 2020).

Hence, well-defined green investments (to avoid greenwashing), which could be financed through the issuance of green bonds which currently sought-after in financial market, could be clearly separated from the rest of the budget and exempted from the rules.

This reform, limited to the investment clause, would not put an end to the debate about the European fiscal framework and would not solve its other flaws (in particular its harmful reliance on unobservable variables), but it would be a good first step, as it could help encourage EU countries to invest in decarbonisation.

[2] Regulation available here: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1997R1466:20111213:EN:PDF

6.5. BEYOND FISCAL RULES

Beyond the discussion on fiscal rules, the broader picture will require careful thinking of what the new role of fiscal policy is as we aim to meet two very important and long transitions, that of climate change and the digital transformation. But as we do not start with a clean slate, namely with high levels of debt that could weigh in on some countries ability to invest, we must think of a framework that will ensure debt sustainability, but also will make sure we meet our common targets.

The COVID-19 pandemic crisis led to a more decisive policy action at the national level, in comparison to the policy response after the financial crisis. But importantly, the pandemic crisis gave rise to a crucial innovation in the context of the EU fiscal architecture, with the creation of the Next Generation EU (NGEU) programme and the Recovery and Resilience Facility (RRF). This was innovative both in terms of the volume of funds (up to €800 billion between 2021 and 2026) but, most importantly, because it allowed for the first time a significant issuance of common debt to finance investments through grants.

The RRF, in its current form, is designed to be financed with long-term debt, to be repaid in the next 3 decades. The actual way of repaying it is not decided quite yet but the July 2020 agreement contained a provision to potentially introduce new "own resources," in other words a tax base at the European level to repay the debt, even if, as of now, the RRF and NEGEU program are a temporary one-off instrument.

However, we believe that the NGEU programme can be useful template for the future (as also argued in Demertzis *et al.*, 2022). An investment-focused centralised instrument with a borrowing capacity modelled on NGEU could indeed be used to reach the adequate level of expenditures geared towards common priorities such as the green transition.

In particular, if its size were to be significant enough, this could be a more effective way of making sure that all countries achieve common goals, compared to an incentivizing green golden rule that would exclude national climate investments from deficit calculations. The current governance structure of NGEU, with a tight control of the European Commission and the Council on spending plans, could guarantee that expenditures effectively target common objectives and would provide a more incentive compatible approach to identifying what is green, thus preventing greenwashing.

Indeed, the process put in place for NGEU and in particular for the assessment of the national Recovery and Resilience plans by the Commission has led to intense discussions between the Commission and EU countries about the content of the plans and on the investments financed thanks to EU borrowing to be sure that the plans fulfilled the objectives of the EU recovery programme (Darvas, 2021). It remains to be seen how the implementation of the plans will be carried out by countries in practice, but if the NGEU experiment is positive, such a governance system could be a good template to carry out investments to fulfil common objectives in the near future.

It is true that given its focus on investment and its slow disbursement, the NGEU is not the right tool for helping in the acute phase of any crisis, as the latter requires spend-

ing on protecting employment and providing unemployment benefits, short-term work scheme, support to companies, etc. Such spending is mostly done at the national level, given the current fiscal structures. But it could still be helpful in obtaining the adequate fiscal stance during the recovery phase and would in fact be complementary with the rules as it would reduce their stringency and potential negative impact on growth and public investment (Darvas and Wolff, 2021b).

REFERENCES

Alesina, Alberto and Silvia Ardagma. "Tales of Fiscal Adjustment." Economic Policy, October 1998, 13(27), pp. 487-545.

Anderson J. and Z. Darvas (2020) "New life for an old framework: redesigning the European Union's expenditure and golden fiscal rules" available at: https://www.bruegel.org/wp-content/uploads/2020/10/IPOL_STU2020645733_EN.pdf

Barbiero, F. and Z. Darvas (2014) "In sickness and in health: protecting and supporting public investment in Europe," Bruegel Policy Contribution 2014/02, available at: http://www.bruegel.org/publications/publication-detail/publication/812-in-sickness-and-inhealth-protecting-and-supporting-public-investment-in-europe/

Blanchard, O. and D. Leigh (2013) "Growth forecast errors and fiscal multipliers," American Economic Review, vol. 103(3), p117-20, available at: https://www.aeaweb.org/articles?id=10.1257/aer.103.3.117

Blanchard, O., A. Leandro, J. Zettlemeyer (2021) "Redesigning EU Fiscal Rules: From Rules to Standards," PIIE Working Paper 21-1, available at: https://www.piie.com/sites/default/files/documents/wp21-1.pdf

Bofinger, P. (2020) "Easing the EU fiscal straitjacket," Social Europe, 14 December, available at: https://socialeurope.eu/easing-the-eu-fiscal-straitjacket

Bogaert, H. (2016) "Improving the Stability and Growth Pact by integrating a proper accounting of public investments: a new attempt," Federal Planning Bureau Working paper 01-16.

Bundesbank (2019) 'European Stability and Growth Pact: individual reform options', Monthly Report, April, Deutsche Bundesbank, 77-90.

Claeys, G., Z. Darvas, and A. Leandro (2016) 'A Proposal to Revive the European Fiscal Framework, with Z. Darvas and A. Leandro. Bruegel Policy Contribution No 2016/07, available at: https://www.bruegel.org/wp-content/uploads/2016/03/pc_2016_07.pdf

Claeys, G. (2019) "The European Green Deal needs a reformed fiscal framework," Bruegel blog, 10 December 10, available at: https://www.bruegel.org/2019/12/the-european-green-deal-needs-a-reformed-fiscal-framework/

Darvas, Z. (2021) "An overview of the Recovery and Resilience Plans," Testimony before the European Parliament's Committee for Budgetary Control (CONT), 25 October, available at: https://www.bruegel.org/2021/11/an-overview-of-the-recovery-and-resilience-plans/

Darvas, Z., P. Martin and X. Ragot (2018) "European fiscal rules require a major overhaul," Bruegel Policy Contribution 2018/18, available at: http://bruegel.org/2018/10/european-fiscal-rules-require-a-major-overhaul/

Darvas, Z. and G. Wolff (2021a) "A green fiscal pact: climate investment in times of budget consolidation," Policy Contribution 18/2021, Bruegel, available at: https://www.bruegel.org/2021/09/a-green-fiscal-pact-climate-investment-in-times-of-budget-consolidation/

Darvas, Z. and G. Wolff (2021b) "The EU's fiscal stance, its recovery fund, and how they relate to the fiscal rules," Bruegel Blog, 4 March, available at https://www.bruegel.org/2021/03/the-eus-fiscal-stance-itsrecovery-fund-and-how-they-relate-to-the-fiscal-rules/

de Haan, J., J.-E. Sturm and B.-J. Sikken (1996) 'Government Capital Formation: Explaining the Decline." Weltwirtschaftliches Archiv, 132(1), pp. 55-74.

Demertzis, M. M. Domínguez Jiménez and N. Viegi, (2022) 'Improving effective fiscal coordination in EMU," The Cambridge Handbook on European Monetary, Economic and Financial Market Integration, Adamski, de Haan and Amtenbrink (eds), forthcoming in CUP.

Draghi, M. (2021) "Prime Minister Draghi's speech at Accademia dei Lincei" available at https://www.governo.it/it/node/17425

Economic and Financial Committee (2017) "Code of Conduct of the Stability and Growth Pact," available at: http://data.consilium.europa.eu/doc/document/ST-9344-2017-INIT/en/pdf

European Commission (2018) "Commission Staff Working Document Accompanying The Document Communication From The Commission To The European Parliament, The Council, The European Central Bank, The Economic And Social Committee, The Committee Of The Regions And The European Investment Bank On The Review Of The Flexibility Under The Stability And Growth Pact," SWD(2018) 270 final, available at: https://ec.europa.eu/info/sites/default/files/economy-finance/swd_2018_270_en.pdf

European Commission (2019) "Vade Mecum on the Stability and Growth Pact," European Economy Institutional Paper No. 101, available at: https://ec.europa.eu/info/publications/vade-mecumstability-and-growth-pact-2019-edition_en

European Commission (2021) "Communication From The Commission To The European Parliament, The Council, The European Central Bank, The European Economic And Social Committee, The Committee Of The Regions, The EU economy after COVID-19: implications for economic governance," COM(2021) 662 final, available at: https://ec.europa.eu/info/sites/default/files/economy-finance/economic_governance_review-communication.pdf

EU Independent Fiscal Institutions Network (2021) 'How to strengthen fiscal surveillance towards a medium-term focus?, available at :
https://ec.europa.eu/info/sites/default/files/lucia_rodriguez_paper_network_of_eu_ifis_-_how_to_strengthen_fiscal_surveillance_towards_a_medium-term_focus.pdf

Kellermann, K. (2007) 'Debt financing of public investment: On a popular misinterpretation of "the golden rule of public sector borrowing." European journal of political economy, 23(4), 1088-1104.

Lane, Philip R. (2021) "The future of the EU fiscal governance framework: a macroeconomic perspective," Panel intervention at the European Commission webinar on "The future of the EU fiscal governance framework," 12 November.

Martin, P., J. Pisani-Ferry, X. Ragot (2021) "A new template for the European fiscal framework" 26 May 2021, voxEU, available at: https://voxeu.org/article/new-template-european-fiscal-framework

Peletier, Ben D., Dur, Robert A. J. and Swank, Otto H. (1999) "Voting on the budget deficit: Comment" American Economic Review 89(5), 1377-1381, available at: https://www.aeaweb.org/articles?id=10.1257/aer.89.5.1377

Romer, C., and D. Romer (2010) "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," American Economic Review, June.

Roubini, N., and Sachs, J. (1989) "Government spending and budget deficits in the industrial countries." Economic policy, 4(8), 99-132.

Thygesen, N., R. Beetsma, M. Bordignon, X. Debrun, M. Szczurek, M. Larch, M. Busse, M. Gabrijelcic, E. Orseau, and S. Santacroce (2020) 'Reforming the EU fiscal framework: Now is the time," voxEU, 26 October, available at: https://voxeu.org/article/reforming-eu-fiscal-framework-now-time

Truger, A. (2015) "Implementing the golden rule for public investment in Europe: Safeguarding public investment and supporting the recovery," WWWforEurope Policy Paper No. 22, WIFO, available at: https://www.wifo.ac.at/wwa/pubid/57898

Turrini, A. (2004) "Public investment and the EU fiscal framework," European Economy - Economic Papers 202, Directorate General Economic and Monetary Affairs, European Commission, New life for an old framework: redesigning the European Union's expenditure and golden fiscal rules PE 645.733 43 available at: https://ec.europa.eu/economy_finance/publications/pages/publication_summary739_en.htm

7. SOVEREIGN DEBT IN EMU, SHOULD WE WORRY?

Alicia Coronil Jónsson,
Chief Economist Singular Bank

The COVID-19 crisis has generated the largest global synchronized crisis since 1870 and it has also accelerated major socioeconomic, commercial, technological, and geopolitical transformations, which were already taking shape before the start of the pandemic.

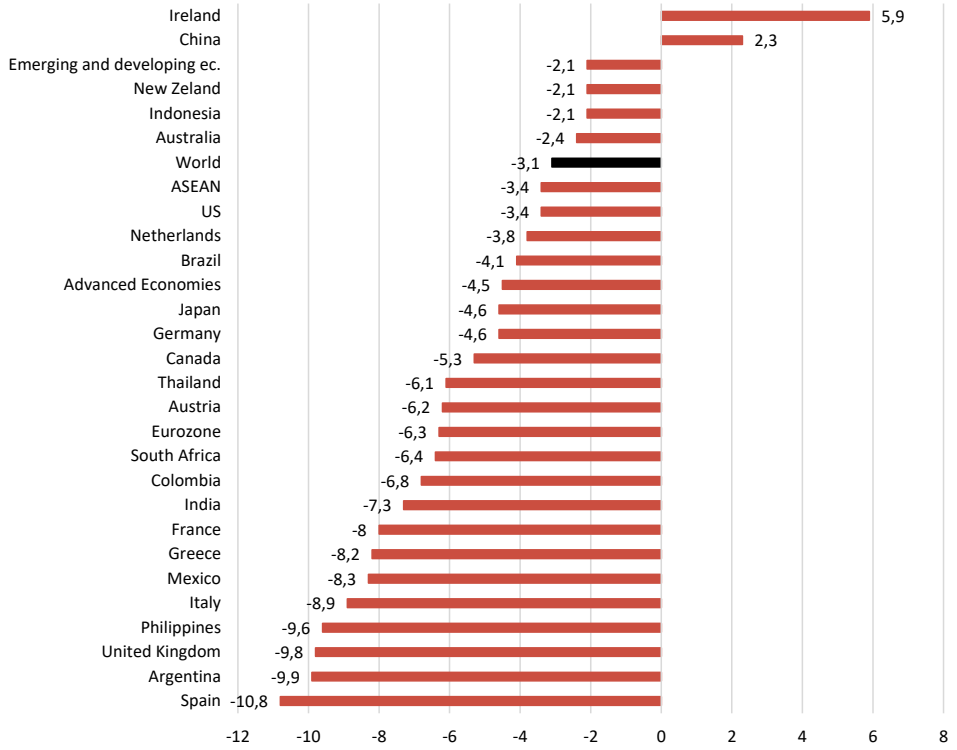
The pandemic has caused an unprecedented recession in peacetime. Its duration and final impact are unknown at the moment, mostly given the successive waves that have occurred since its onset and the uncertainty about its evolution pattern, especially after the spear of the delta and omicron variants since June and November 2021. The COVID-19 crisis constitutes a *twin crisis* as it led to a health emergency and it generated a significant loss of wealth at a time when the world economy was on a path of making headways in reducing poverty levels in emerging and developing economies.

In this sense, beyond their important emotional consequences and in terms of loss of human life, the historical analysis of previous pandemics reflects the transfer of their economic costs through different channels. For instance, in the case of the 1918 flu, in which an estimated 50 million people lost their lives, and similar social distancing measures were adopted to those of the first wave of COVID-19 pandemic, different studies place the loss at 6% of GDP and 8% of private consumption (Barro et al., 2020). At the same time, industrial production contracted an annual average of 18% for two years (Correira et al., 2020).

In this way, the Global Coronavirus Crisis not only represents the largest contraction since World War II, with an estimated fall in global GDP of 3.1% in 2020 (IMF) but also forecasts in the current base scenario that world production in 2024 will be 2.8% lower than its previous estimate that was calculated before the disruption of this *exogenous shock.*

All this is in a context in which the main economies (figure 1), with the sole exception of China and Ireland in the case of the Eurozone, had suffered significant drops in their national GDP last year, with Spain (-10.8% annually), Argentina (-9.9%) and the United Kingdom (-9.8%) in the lead of the OECD countries that suffered the most.

Figure 1: Real GDP 2020, selection of economies. *% Annual growth.*



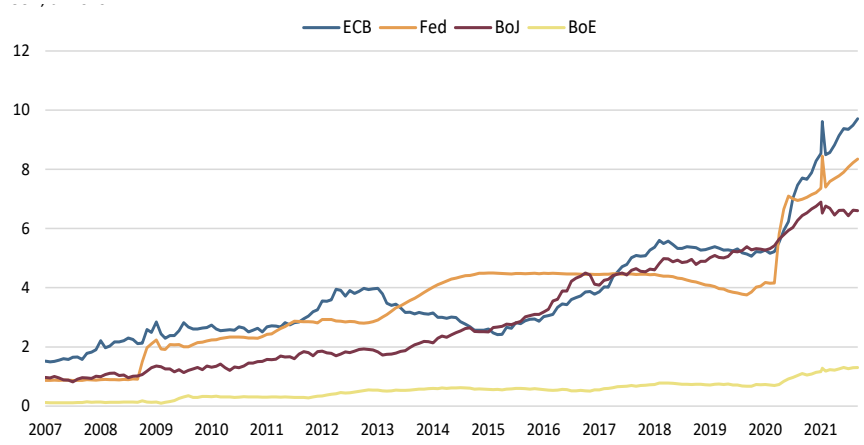
Source: Singular Bank based on IMF, 2021.

A circumstance that is linked to its socioeconomic impact in terms of employment. According to the International Labor Organization (ILO), in 2020, the health crisis caused the loss of 8.8% of the total hours worked in the world, equivalent to 255 million full-time jobs. However, the introduction of layoffs (temporary redundancy plan or ERTE in Spanish), mainly in advanced economies, made it possible to curb the soaring number of unemployed people by 114 million. This situation will not be any better this year since the ILO forecasts that there will be 100 million fewer full-time jobs compared to the end of 2019, contingent on the final dynamism of the economic recovery.

Despite this, the actions of the economic authorities have been key to mitigating the impact of the health crisis. In other words, avoid further job destruction and

business closures (unfavorable business demography), which could jeopardize the potential growth of countries in the future and create social tensions in the medium term. Since March 2020, governments have adopted fiscal stimulus worth 16 trillion dollars (approximately 19% of world GDP in 2020) with the aim of mitigating the impact of the COVID-19 crisis on businesses and the labor market. At the same time, the main central banks worldwide have recorded an aggregate increase of 7.5 trillion dollars in their balance sheets (figure 2). According to the IMF forecasts, this combined action made it possible to reduce the contraction of annual world GDP to 3.3% in 2020, compared to the initial projections that forecast an annual fall of around 10%.

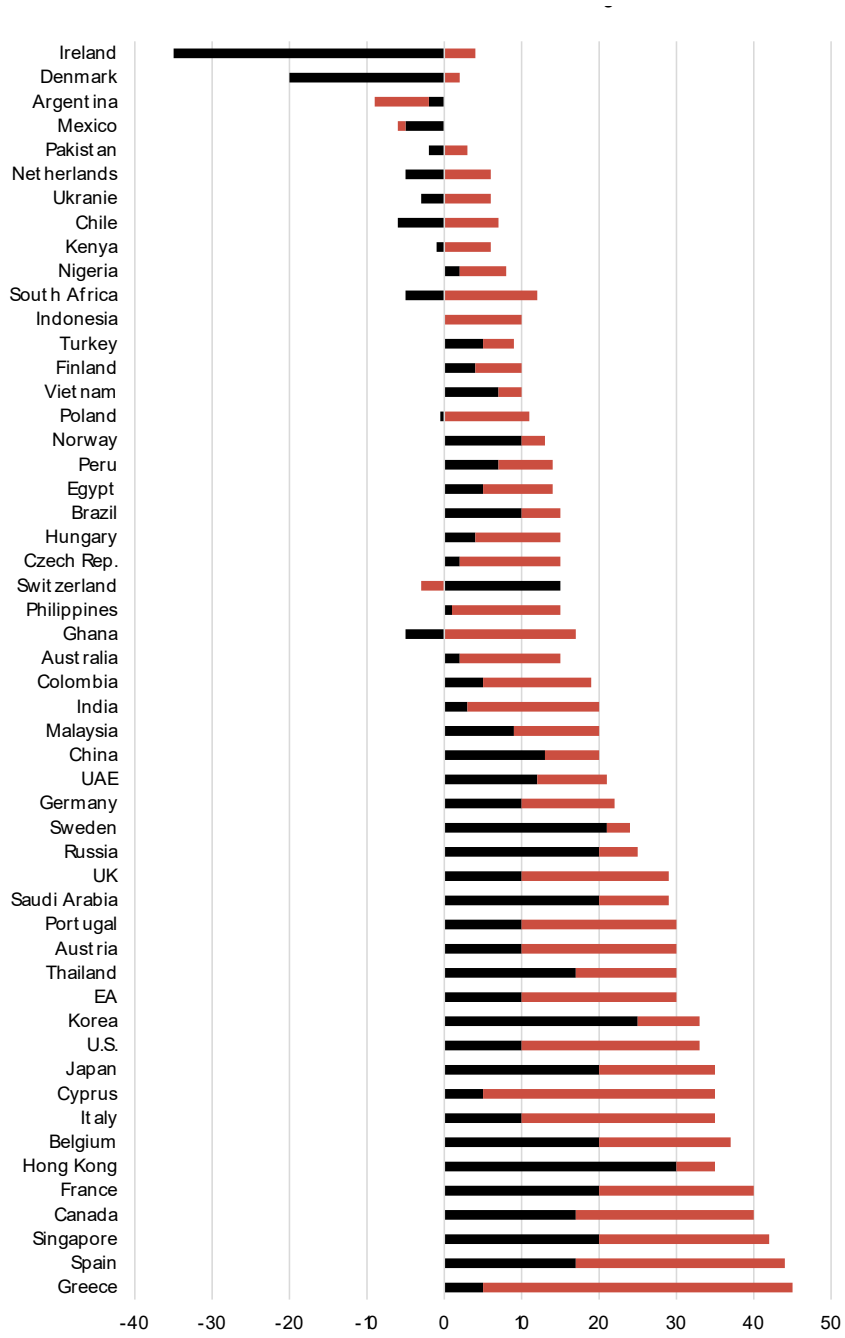
Figure 2: Central bank balance sheets, total assets. *USD, trillions.*



Source: Singular Bank based on IMF, 2021.

The fiscal response has led to a deterioration of the budget balance situation and a significant increase in public debt. All this in an environment prior to the coronavirus crisis marked by high levels of indebtedness from both the private sector and the general government. Specifically, according to the latest data from the Institute of International Finance (2021), at the end of the second quarter of this year, total global debt continued to increase to represent 353% of world GDP, approximately 34% higher than its pre-COVID-19 level (319.5% of world GDP in 2019). However, between April and June (Q2 2021), in 51 of the 61 countries analyzed, a slight reduction in debt was observed as a result of the economic reopening and the economic recovery, which across the board has not allowed them to return to their pre-pandemic level. Currently, only 5 countries have global debt levels lower than those of 2019 (figure 3). In the case of Denmark and Ireland it is due to the reduction of private sector debt, while in Argentina and Mexico due to its correction in the public sector.

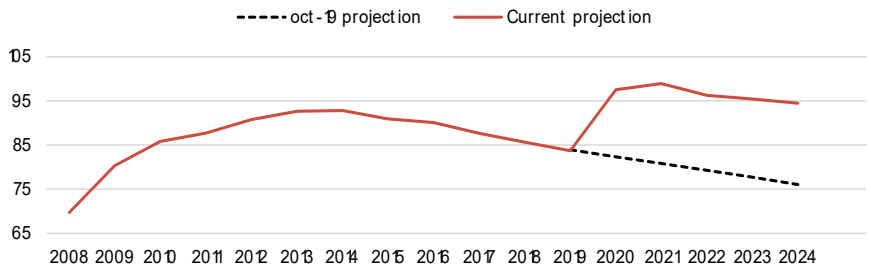
Figure 3: Sharp surge in debt-to-GDP ratios since 2019. *Percentage points.*



Source: Singular Bank based on IIF, 2021.

In the case of public debt, the largest increases have occurred in advanced economies, with an average increase of 20% compared to the end of 2019. In the Eurozone as a whole, the drop in business activity, the fall in tax collection, and the unprecedented increase in public spending to mitigate the impact of the pandemic on the social and business domain has caused public debt to soar to 98.3% of GDP in the second quarter of 2021, after reaching its peak of 100% in the first quarter due to the double recession suffered by the European monetary zone. Thus, it is 14.7% above its records prior to the onset of the health crisis (figure 4).

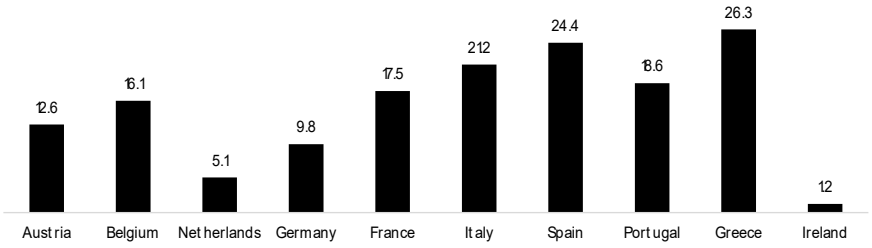
Figure 4: Projection Path of Goverment gross debt, Eurozone. *% GDP.*



Source: Singular Bank based on IMF, 2021.

The increase of government gross debt reflects how the pandemic has reversed the path of fiscal consolidation started in 2014, and it also shows its progressive expected correction in the medium term. After reaching record highs of 92.1% in 2014 of GDP, the IMF's macroeconomic scenario forecasted public debt to hit 76.1% of GDP in 2024.

Figure 5: Annual change in Goverment gross debt, 2020 vs 2018. *Percentage points.*

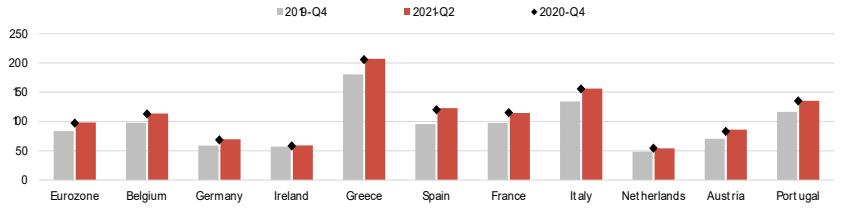


Source: Singular Bank based on IMF, 2021.

At the same time, a heterogeneous increase in the public debt-to-GDP ratio has been observed among the member states of the European monetary zone (figure 5), with the highest increase compared to its figures at the end of 2019 in Spain (27.3%), Greece

(26.7%) and Italy (22%). All this in a context in which the highest debt-to-GDP ratios prior to the onset of the COVID-19 pandemic were in Greece (180.5%), Italy (134.3%), and Portugal (116.6%). Although, figures for Belgium (97.7%), France (97.5%), and Spain (95.5%) were fairly high too (figure 6).

Figure 6: Goverment consolidated gross debt, main economies. Eurozone. *% GDP.*

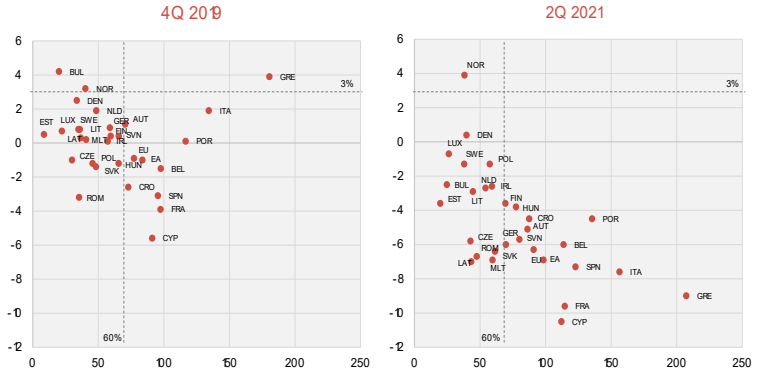


Source: Singular Bank based on Eurostat, 2021.

In turn, the rebound in public debt of the German economy was lower than the average for the Eurozone, increasing by 10.8% to hit 69.7% of GDP at the end of the second quarter of 2021 (based on Eurostat data). In contrast, debt levels remained practically stable in the case of Ireland, increasing slightly to 59.1% compared to 57.2% at the end of 2019.

In this way, the pandemic has increased the number of countries in the European monetary zone that do not meet the target set by the Stability and Growth Pact (SGP) of 60% public debt-to-GDP ratio from 8 countries in 2019 to the current total of 12 countries. However, it is to be noted that the 4 new countries that have recently exceeded the set target as a result of the health crisis do it in considerably small deviation in the case of Slovenia (61.5% of GDP), Finland (69.4%), and Germany (69.7%).

Figure 7: Gross debt and budget balance. *% GDP.*

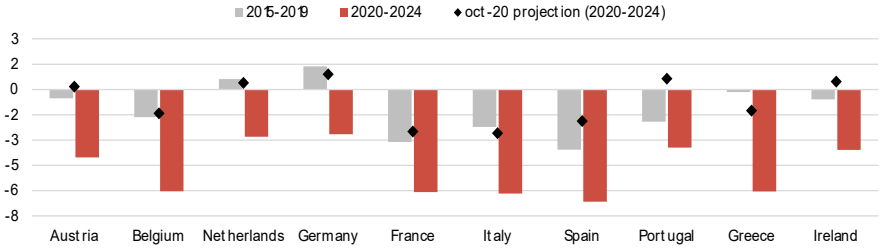


Source: Singular Bank based on Eurostat, 2021.

So, the spread among the Eurozone member states has increased to 187.6% between the lowest level represented by Estonia (19.6% of GDP) and the country with the highest level of indebtedness represented by Greece (207.2%) (figure 7). Not only can this affect future negotiations if the European Commission's fiscal policy reform proves to be successful, but also place the greatest risks of financial stability in the southern European countries once again.

As a whole, the fiscal measures adopted by the Eurozone member states to minimize the socioeconomic consequences of the COVID-19 crisis have had a negative impact on their budgetary balance in average to the tune of 5% of GDP in 2020 and could reach 4% in 2021 (figure 8).

Figure 8: Budget balance forecast, main economies Eurozone. *% GDP.*



Source: Singular Bank based on IMF, 2021.

However, akin to the evolution of public debt, the budgetary deterioration has also been significantly heterogeneous among the member countries of the European monetary zone. This circumstance is explained by the asymmetric drops in GDP recorded between the different economies and the divergences in their budgetary balances. In 2019, 15 of the 19 Eurozone member states had a public budget surplus, with Greece having stood out with 3.9% of GDP. Although, this was not to last, as the situation has quickly regressed due to the health crisis.

Specifically, in 2020, the highest levels of public budget deficit were recorded in Greece (-10.5% of GDP) and Spain (-11.0%) due to their high exposure to the tourism sector and the significantly large number of small-sized companies, among other things. At the same time, a significant upturn in France (-9.2% of GDP) and Italy (-9.5%) was highlighted, as their governments have adopted fiscal measures equivalent to 28% and 48.7% of their GDP, respectively. As for Germany and Ireland, the public budget deficit stood at around 5.0% of GDP, below the average for the European monetary area of 7.2%.

However, the unprecedented expansionary fiscal policy to reduce the initial impact of the pandemic, stabilize financial markets and guarantee considerably favorable financing conditions for governments, companies, and households would not have been possible without the actions of the European Central Bank (ECB). A combination of

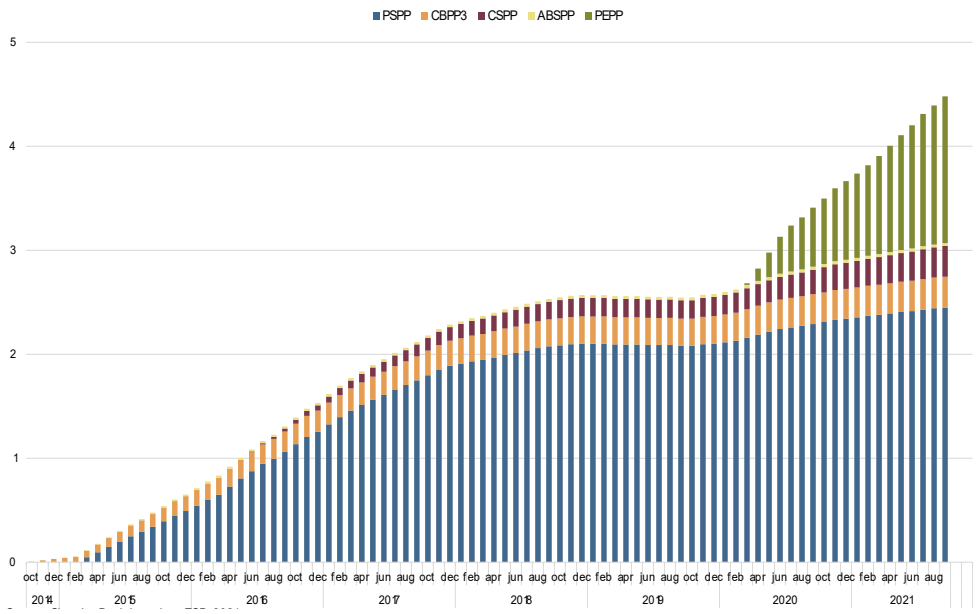
measures has allowed the economic authorities to avoid problems of financial fragmentation in the Eurozone and greater consequences on the real economy. Hence, the approval of the Asset Purchase Program (APP) called Pandemic Emergency Purchase Program (PEPP) in March 2020, whose maximum amount after successive extensions derived from the evolution of the health crisis amounts to €1.85 trillion, with an expected maturity in March 2022.

All this is in a context in which **the ECB has maintained its previous asset purchase program (APP)** within the package of unconventional monetary policy measures that also includes TLTROs (targeted long-term refinancing operations for credit institutions). The APP began to be implemented in mid-2014 and is made up of:

- Corporate Sector Purchase Program (CSPP)
- Public Sector Purchase Program (PSPP)
- Asset-backed Securities Purchase Program (ABSPP)
- Third Covered Bonds Purchase Program (CBPP3)

Until September 30 (figure 9), **the total assets accumulated under these programs (including the PEPP) on the ECB's balance sheet amounted to €4.5 trillion**, representing 38% of the Eurozone GDP (calculated by using the GDP of Q2 2020 to Q2 2021).

Figure 9: Evolution of ECB´s Asset Purchase programes. *€ Trillions.*



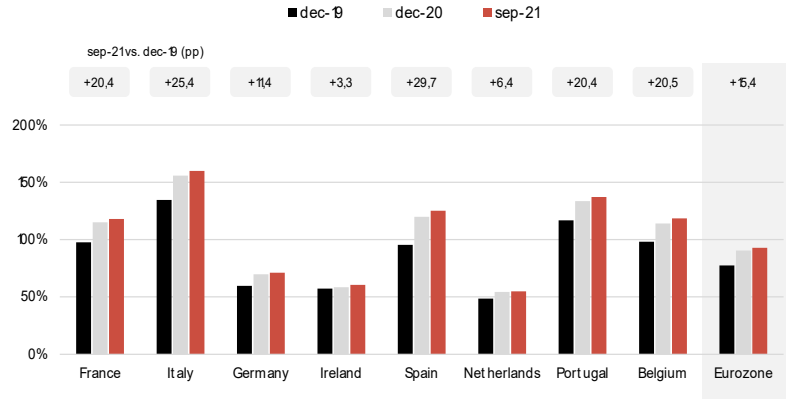
Source: Singular Bank based on ECB, 2021.

In the case of the **PEPP,** since its creation, **it has concentrated most of the monthly asset purchases carried out by the ECB**. Its net amount has oscillated **between €60,000 and €120,000 billion per month** depending on the evolution of the economic situation and the financial conditions of the European monetary zone throughout the pandemic. In contrast, the net monthly purchases of the four APP programs amount to the tune of €20,000 billion.

The involvement and the actions of the ECB during the Global Coronavirus Crisis have been vital in keeping the yields of sovereign bonds at low levels. In particular, purchases made during the pandemic have helped finance the unprecedented expansionary fiscal policies of Eurozone member states. This role of the monetary authority **has avoided tensions in financing costs in countries with higher levels of public debt**, such as Spain, Italy, Greece, and Portugal. All this is in a situation in which **the public debt-to-GDP ratios have increased significantly as of 2020, with Spain (+30%) and Italy (+25%) standing out**. At the same time, in France, Portugal, and Belgium, they have increased by around 20%.

By contrast, **in Ireland and the Netherlands, the increase in public debt has been limited to 3% and 6%, respectively** (figure 10). In the case of the Irish economy, its evolution is explained by becoming the only country in the Eurozone that recorded an increase in annual GDP of 5.9% in 2020.

Figure 10: Debt-to-GDP ratios in the Eurozone. *Percentage points.*



Source: Singular Bank based on ECB, 2021.

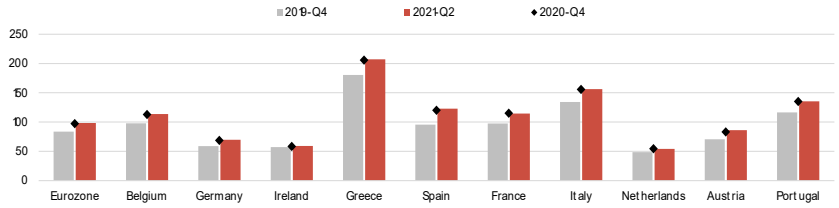
In this context, the ECB's bond purchases between 2020 and 2021 have practically covered the net issuance of government debt, contributing to its financing at very low-interest rates. In the group of eight countries analyzed[1] (France, Italy, Germany,

[1] Goverment debt net issuance: computed as the annual variation of the outstanding government debt securities at december 2020 and september 2021 (based on Eurostat). CB Bonds Purchases: computed as

Ireland, Spain, the Netherlands, Portugal, and Belgium), purchases by the ECB under the PSPP and PEPP programs have represented 96% of the total net debt issued in 2020, reaching 140% since the beginning of this year.

In this way, the monetary authority has indirectly acquired 100% of the net debt issued by Belgium in 2021, 99% by France, 93% by Spain, and 86% by Italy (figure 11).

Figure 11: Goverment consolidated gross debt, main economies. Eurozone. *% GDP.*



Source: Singular Bank based on ECB, 2021.

In the short and medium-term, the ECB's decisions on the design and continuity of its purchase programs and the tone of its monetary policy, as well as the negotiations within the European Commission on the fiscal rules of the Stability and Growth Pact (SGP), will be key to the evolution of sovereign debt interest rates. All of this is coupled with the future capacity for budgetary consolidation of the Member States with higher levels of public debt, which will be determined by the dynamism of economic growth, the success of national recovery plans, and structural reforms that boost productivity, among others, the economic policy measures.

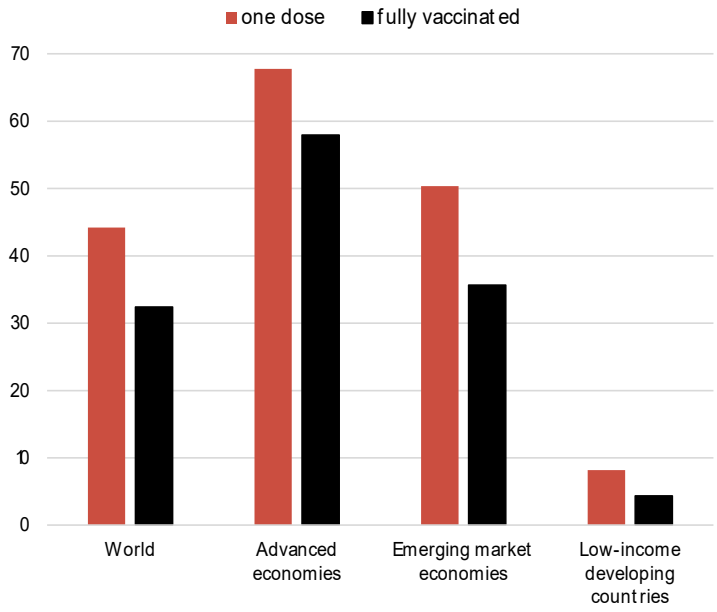
7.1. MEDIUM-TERM BASE SCENARIO

The update of the macroeconomic scenario of the International Monetary Fund (IMF) has confirmed the loss of momentum in the global economy, explained as of the third quarter by the impact on the economies of the Asia-Pacific region due to the spread of the delta variant and the slower rate of progress in the asymmetric delivery in the vaccination schedules. Specifically, compared to the average of 60% of the population administered the complete immunization schedule in advanced economies (figure 12), this percentage reaches 40% in emerging economies and only 5% in developing countries with lower incomes.

A circumstance that deepens the divergences in the recovery path and highlights the need to accelerate its development to achieve greater control of the health crisis by the end of 2021.

the accumulated purchases of sovereign bonds by the ECB through its asset purchase programmes PEPP and PSPP in 2020 and January to September 2021 (based on ECB).

Figure 12: The Great Vaccination divide. *% of population*



Source: Singular Bank based on IMF, 2021.

All this is happening against the backdrop of a situation that is marked by other overlapping risks with great impact on the recovery dynamism, of which the most notable are: the pandemic, the growing inflationary supply tensions, and China.

The evolution of China's GDP has confirmed the slowdown in its growth due to the epidemiological situation, the tightening of mobility restrictions, the sluggishness of domestic demand, the imbalances around its real estate sector, and the energy crisis. The combination of these factors has slowed down the quarterly progress in the business activity below its growth trend prior to the Global Coronavirus Crisis and the annual 6% target set by their government.

China losing dynamism in its power as the growth strategy under the principle of common prosperity, set in motion by its president Xi Jinping to reduce social imbalances and the high levels of debt racked up in recent decades, gives rise to new unknowns. The tightening of regulation on key sectors not only ties business objectives to those of the government but can also go in the opposite direction to the necessary reforms to guarantee a socioeconomic and welfare model that converges with that of advanced economies, despite the challenges they face. The Chinese economy accounts for 30% of the annual growth achieved in world GDP. Hence, the future growth path of the Asian power is of paramount importance due to its impact on the growth of trade and the global economy.

At the same time, since the beginning of 2021, in a global situation marked by the successive waves of the coronavirus and the developments in the vaccination programs, and the reopening of economies, inflation has risen above expectations in both advanced economies and emerging economies. This fact is explained by the combination of demand factors and the persistence of supply shocks generated by the health crisis. Specifically, the sustained recovery in private sector consumption has been accompanied by bottlenecks in the value and supply chains, the increase in the cost of transporting goods and basic raw materials, and the recent energy crisis, mainly in Europe and China.

The average inflation of the OECD countries as a whole continues its upward trend that began at the end of 2020, exceeding the level of 5,8% per year. A trend mainly explained by the significant rise in the cost of energy of 27,7% year-on-year at the end of the third quarter, its largest increase since June 1980, which has been driven by the sharp rise in the price of crude oil, natural gas, and coal. In the case of Dutch natural gas (a key player in Europe), its price has increased by around 500% since the beginning of the year, and a barrel of Brent by approximately 60%. At the same time, there has been a surge in food prices, also driven by the rise in the price of its main raw materials and the cost of freight transport, among other factors.

As such, the increase in demand, supported by the reopening of the economies and the retained savings of households since the beginning of the pandemic, together with the persistence of supply shocks, have placed inflation in the Eurozone and the United States at record highs of the last decades.

The mounting inflationary supply pressures have been transferred to the evolution of the sovereign debt markets in Europe and the United States, which have experienced high returns in profitability since the beginning of the year, especially in the longer maturity yield curves. All this after recording significant drops in 2020, in an environment marked by volatility derived from the disruption of the pandemic and the unprecedented expansionary monetary policy of the main central banks.

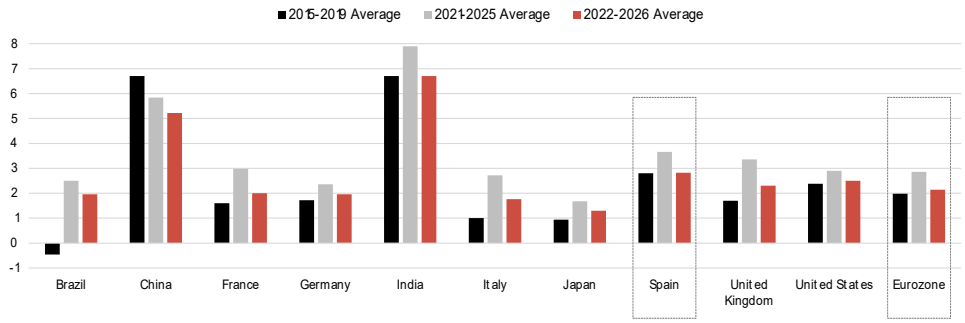
The rise in inflation expectations in the coming months and the adoption of a less accommodative message from the monetary authorities have raised yields again. Specifically, the ECB has announced the reduction in the purchase rate of PEPP bonds, placing it in recent weeks at €16 billion compared to an average of €20 billion in September, before announcing this measure. However, the European monetary authority maintains the scenario of the transitory nature of the current rise in inflation, forecasting that they will normalize in the medium term at levels close to the 2% target of the ECB. A future trend that will be subject to when the normalization of global value chains occurs, to the moderation of the price of energy and the rest of basic raw materials, and given that there will be no second-round inflation effects and a de-anchoring of consumer price expectations.

This combination of factors, which, together with a long covid scenario and others of a geopolitical and environmental nature, increases the risk of less intense and prolonged recovery. A fact that not only could have negative implications on business activity and the labor market but also gives rise to new questions about the budgetary

prospects and fiscal consolidation of the European monetary zone member countries that have higher levels of public debt.

In this sense, the latest IMF forecasts predict a recovery in global production levels by the end of 2022, while employment levels could remain below their pre-pandemic levels in approximately 30% of advanced and emerging economies. All this in an environment in which, isolating the initial impact of the pandemic and the recovery in production in 2021, the growth path would tend to be at levels similar to those prior to the health crisis both in the US and in the main Eurozone member states (figure 13).

Figure 13: Real GDP growth. *% Average annual rate.*



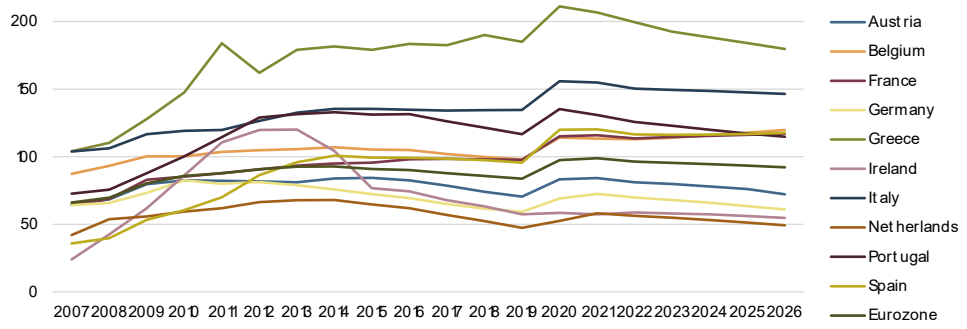
Source: Singular Bank based on IMF, 2021.

An economic dynamism that would be insufficient to place the level of public debt in its pre-pandemic levels in the next 5 years (figure 14). The only exception among the main economies of the Eurozone would be in Germany and Ireland, given their previous budgetary situation, while they would remain at very high levels in the case of Belgium, France, Spain, Portugal, Italy, and Greece. There is growing concern on the sustainability risks of public debt in some countries and the threat of a surge in inflation that anticipates the normalization of the ECB monetary policy and higher interest rates paid on sovereign debt, with consequences for economic growth and the ability of States to repay their public debt. This scenario could generate doubts over the sustainability of their finances, driving up their risk premiums and, ultimately, unleashing a new sovereign debt crisis.

The sustainability of public debt depends on four key elements: the initial level of debt, the fiscal balance (surplus or deficit), the interest payments generated by the debt and the economic growth. At the same time, there is a key relationship between growth and the interest rate. Starting from an initial level of debt, GDP growth reduces the debt burden relative to the total resources in the economy, while interest charges raise the total amount to be repaid. Thus, the greater the economic growth relative to the interest rate, the easier it will be to reduce the debt burden.

Meanwhile, in the absence of a real fiscal and monetary union, the public debt sustainability depends on many additional factors as the vision and commitment of government, the political stability, the investor confidence and the willingness of the population to support structural reforms and fiscal adjustment.

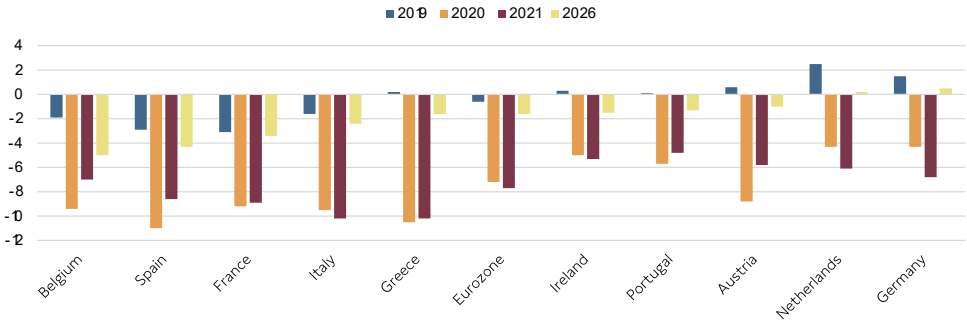
Figure 14: Path General government gross debt. *% GDP.*



Source: Singular Bank based on IMF, 2021.

All this, coupled with the fact that, in 2026, Spain, France and Belgium would continue to present higher public deficit levels than in 2019, in all cases above the 3% of GDP target (figure 15). A circumstance that could be explained by the increase of a structural nature in the absence of structural reforms in the last decade. At the same time, Portugal, Italy, and Greece would regress in the levels of fiscal consolidation achieved since the sovereign debt crisis in Europe, placing their public deficit between 1.3% and 2.4% of GDP.

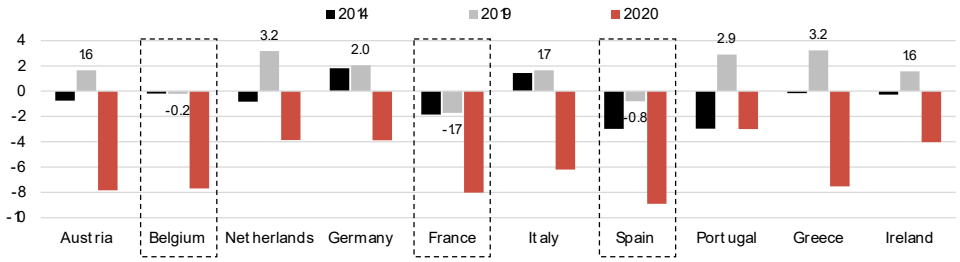
Figure 15: General government net lending/borrowing in 2026. *% GDP.*



Source: Singular Bank based on IMF, 2021.

The case of Greece stands out among the main Eurozone countries that reversed their primary budget deficit situation between 2014 and 2019 (figure 16). Before the disruption of the health crisis, it had a primary budget surplus of 3.2% of GDP, compared to the negative balance of 0.2% of GDP recorded 5 years earlier. However, in this period, its level of public spending decreased by around 3%, mainly due to the significant reduction in spending on defense (-24%), housing services (-22%), general public services (-18%), education (-5%) and environmental protection (-4%).

Figure 16: Primary budget surplus/deficit, main econimies Eurozone. *% GDP.*



Source: Singular Bank based on IMF, 2021.

At the same time, Italy managed to slightly increase its primary budget surplus from 1.4% to 1.7% of GDP between 2014 and 2019, supported by the reduction in general public service expenses of approximately 13%.

7.2. A PROPOSAL FOR A NEW ECONOMIC ENVIRONMENT

A scenario that reflects both the limited future margin of fiscal policy action in the face of future economic crises, and also its negative implications in terms of growth, sustainability and convergence of the European project.

In this sense, the enormous heterogeneity of the budgetary and indebtedness situation of the member countries of the Eurozone may add new elements of discrepancy within the debate started by the European Commission on the reform of the budgetary discipline rules of the European Union, which set as objectives a public deficit of no more than 3% of GDP and a public debt of 60% of GDP. Faced with the inability to reduce the burden of debt to this level in the case of economies with short and medium-term ratios above 100% of GDP, the European Stability Mechanism (created by the European Council in 2011) has proposed to raise the target to 100% of GDP in the case of public debt, provided that it is accompanied by a rule that sets the ceiling for public spending that adapts to annual economic growth and does not exceed potential growth.

Other proposals by Blanchard, Leandro and Zettelmeyer´s state that fiscal rules would be replaced by standards. The authors argue standards are common in national

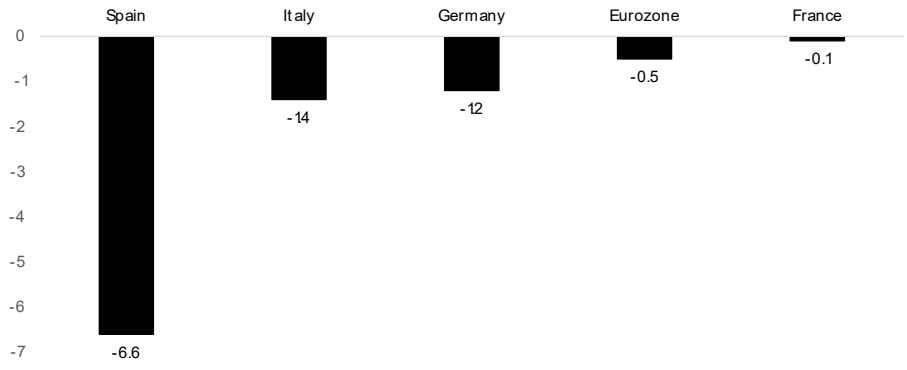
and EU legislation. As they point out the *EU legislation could also state criteria that would inform the minimum speed of fiscal adjustment in the event that debt is not considered sustainable with high probability, including the state of the economic cycle, market conditions, and the level of interest rates* (Blanchard, Leandro and Zettelmeyer, 2021).

In addition, nowadays the national parliaments are unlikely to work in the context of a monetary union with significant cross-country externality. That made necessary to promote an alternative based on a pair of institutions, one responsible for fiscal surveillance and another one for adjudication of compliance with the fiscal standards, a role that could take place in the European Council or in an independent judicial institution such as the European Court of Justice (Blanchard, Leandro and Zettelmeyer, 2021). This new fiscal EU framework would require a treaty change with the consensus of the member states.

At the same time, the European Fiscal Board defends that the Eurozone needs a standing Central Fiscal Capacity (CFC), a reformed fiscal framework, and a golden rule for investment. The CFC should be based on a Union budget financed with is own resources and with borrowing capacity (Martinez, C. 2021). So fiscal framework should be reformed by adopting a country-specific debt anchor, an expenditure rule to replace the debt brake, and preserving the general escape clause. The golden rule, in addition should growth-enhancing investment be protected from spending limits (Carrión Alvárez, 2021).

All this is in a situation in which the data for the third quarter 2021 have confirmed the divergence that is taking place in the pace of recovery among the main economies of the Eurozone (figure 17), especially in the case of Spain. Spanish GDP remains 6.6% below its previous level at the end of 2019, while the monetary zone as a whole or France have practically recovered their business activity levels prior to the start of the pandemic.

Figure 17: GDP lost since the begining of the pandemia. % *Respect GDP level at 4Q 2019.*



Source: Singular Bank based on Eurostat, 2021.

A fact that, together with the rise in inflation above the main Member States, forecast a delayed recovery in Spain, with greater structural damage and financial risks in the future if the ECB modifies its interest rate policies before those estimated by the persistence of current inflationary tensions. At the same time, the economic policy decisions included in the General State Budgets place the Spanish economy as one of those with the greatest risk of deepening and widening the size of the structural deficit in the long term. Among them, the indexation of pensions to the current inflation rate, the highest in the last three decades, in an environment marked by the structural and growing deficit of Social Security, the aging of the population, and the beginning of retirement of the baby boom generation as of 2023.

Beyond the inability to reduce the current levels of indebtedness in most of the Eurozone member states through the economic growth path forecasted in the baseline scenario by international organizations, its sustainability is strongly contingent on the current and future demographic pattern. All this without forgetting a possible environment of progressive normalization of monetary policy and the risk of adopting fiscal policies that discourage private activity and reduce attractiveness for foreign direct investment (FDI), and that could boost the shadow economy.

The aging and greater longevity of the population represents an unprecedented challenge in the current design of the Welfare State. Not only will it generate higher spending in terms of pensions and health and social services, but it also gives rise to unknowns about its impact on the evolution of productivity and the dynamism of economies and their potential growth. Between 2018 and 2033, according to forecasts by CaixaBank Research, in a scenario with no increase in the employment rate or migratory flows, the reduction in the labor force in the case of Spain would reduce average annual GDP growth by 0.4% and the GDP per capita by 0.2%, while if immigration and employment increased in all segments of the labor force, GDP growth and GDP per capita would increase by 0.4% and 0.1%, respectively.

An analysis aligned with the main conclusions of the OECD that indicates that the current design of the pension and social spending system could increase fiscal pressure by nearly 8% of GDP on average between 2021 and 2060. At the same time, a permanent 1% increase in global interest rates would add between 1% to 1.5% of GDP to fiscal pressure in countries with the highest net debt position, such as Greece and Italy (OCDE, 2021). Hence, there is no doubt that it is time to carry out a strategy of structural reforms with a long-term vision, credibility and not dependent on the political cycle. In this sense, the pandemic should be a catalyst to rethink the design of the Welfare State and adapt it to new circumstances and socioeconomic challenges. For this reason, it is vital due to its fiscal implications to design measures that cover all areas of the economy, following the experience of countries that have a more sustainable growth path and greater budgetary stability in the face of economic crises.

From a labor point of view, it is necessary to add greater elements of flexibility to the labor market in those countries with the highest unemployment and youth unemployment rates, such as Spain, Italy, or Greece. At the same time, it is essential to

improve the effectiveness of active employment policies to facilitate the transition of the long-term unemployed or those with a lower level of training to the sectors that are creating employment. All this is coupled with an improvement in the quality of the educational system, with a greater role of vocational education and training (VET) and public-private partnership. According to the OECD, these measures could increase GDP per capita by 7% until 2060, which would have positive effects in terms of reducing public spending and improving tax collection.

At the same time, it is essential to adapt the pension system to the new demographic reality. Greater longevity and quality of life must be accompanied by a delay in the retirement age and by mechanisms that allow working life to be extended voluntarily beyond that age, following the experience of the Nordic countries that opted for it in the 90s. These reforms must be accompanied by a new financing model for the system that includes private capitalization. These measures could, in the long-term, in countries such as Spain, France, and Belgium, reduce the long-term tax burden by between 4 and 5 percentage points.

In the same way that it is necessary for countries with a higher level of public debt to improve the effectiveness of Public Administration, eliminate duplications, increase public-private collaboration in the provision of services and introduce criteria for evaluating public spending typical of the business sector. At the same time, a tax policy must be designed that avoids raising the tax burden and whose pillars are to expand the tax bases, reduce the shadow economy and encourage innovation and growth of companies and the attraction of foreign investment, especially from technological and productive centers.

A set of structural reforms that must also reflect the commitment to fiscal consolidation both at the national level and with the European project. Therefore, it is time to create a new fiscal framework preventing the adoption of national decisions that are linked to the electoral cycle, and guaranteeing their design with a long-term strategic vision.

Therefore, the future sustainability of the debt in the Eurozone is subject to the reformist commitment of the Member States and its willingness to make possible a Europe that converges in its socioeconomic model towards those that show a greater intergenerational and budgetary balance and resilience in the face of economic crises.

REFERENCES

Barro, R., J. Ursua, and J. Weng (2020): "The coronavirus and the Great Influenza Pandemic: lessons from the 'Spanish flu' for the coronavirus' potential effects on mortality and economic activity," NBER Working Papers 26866.

Blanchard O., Leandro A. and Zettelmeyer J. (2021): "Ditch the EU's fiscal rules; develop fiscal standards instead," VOX EU-CEPR, April 2021.

Carrión, M. (2021): "Eurozone fiscal reform in light of Covid-19: a review of existing proposals," Funcas, March 2021.

Correia, S., S. Luck, and E. Verner (2020): "Pandemics depress the economy, public health interventions do not: evidence from the 1918 flu," mimeo.

European Independent Fiscal Institutions (2021): "European Fiscal Monitor," June 2021.

Institute of International Finance (2021): "Reassessing the Pandemic Impact," September 2021.

OECD (2020): National Accounts of OECD Countries, General Government Accounts, 2020.

OECD (2021): The long game: Fiscal Outlooks to 2060 underline need for structural reform, October 2021.

PART III
ISSUES IN REGULATION

8. NON-PERFORMING LOANS: FROM "TSUNAMI" TO OPTIMISM AND THEN "WAVE"? - DEALING WITH NPLS IN COVID TIMES

Reiner Martin[1], Piroska Nagy Mohácsi[2], Elina Ribakova[3], Jonathan M. Fortun Vargas[4]

Initial fears of rapidly worsening bank asset quality and an ensuing "NPL tsunami" from the pandemic have not materialised to date, thanks to the "whatever-it-takes" policy mix that governments across the world have implemented. In addition to fiscal and monetary policies, this included, for the first time, the system-wide use of anti-cyclical regulatory policies to strengthen bank balance sheets, incentivize bank lending, and mitigate asset quality deterioration. In the European Union, EU-level fiscal and competition/state aid rules have been temporarily suspended/relaxed in support for the all-out crisis management. But in what is a highly uncertain economic recovery, many policy makers and banks still expect increases in NPLs as the pandemic's massive policy stimulus is starting to be withdrawn. We propose several measures to swiftly deal with any possible material rise in NPLs. These go beyond the NPL actions foreseen so far by the European Commission and the ECB: we suggest a fast-track approach to honour calls on existing government guarantees and further measures to facilitate secondary NPL markets in Europe. Such measures should include the facilitation of NPL securitization schemes and revisions in the EU regulatory and state-aid framework to make Asset Management Companies again a more feasible option for high-NPL EU countries. In addition, the idea of funding such vehicles at the European level should be revisited. Finally, European regulators and supervisors should adapt a "forward guidance" on

[1] Lead Economist, Joint Vienna Institute (JVI).

[2] Visiting Professor, London School of Economics and Political Science (LSE).

[3] Deputy Chief Economist, Institute for International Finance (IIF).

[4] Economist, Institute for International Finance (IIF). Authors' note: The views and opinions expressed in this paper are those of the authors and do not necessarily reflect the official policy or position of their employers. Assumptions made in the analysis are not reflective of the position of any entity other than the authors.

post-pandemic NPL policies to effectively communicate their approach in the context of an uncertain and uneven recovery.

8.1. INTRODUCTION

When the Covid-19 pandemic spread throughout the globe in the Spring of 2020, the lockdowns, social distancing measures and travel bans implemented to prevent the spread of the virus quickly resulted in sharp decline in economic activity everywhere. Although policy makers in the European Union (EU) reacted relatively swiftly and decisively to this challenge, the potential impact of the Covid-induced deep recession on asset quality in the euro area, the EU and beyond soon became a major concern.

Unlike many previous crises, this one was *not* triggered by economic or financial imbalances such as over-indebtedness of governments or households, excessive current account deficits, asset price booms turning into busts or unintended consequences of financial engineering. Covid-19 is a very severe but truly exogenous and simultaneous shock to the economy and the financial system around the world. As the World Bank's Chief Economist Carmen Reinhart noted, referring to her earlier work on economic crises: "This time truly *is* different" (Reinhart 2020).

A unique element of the unprecedented anti-cyclical *policy mix* that policy makers around the world implemented was the effective inclusion of financial macro and micro prudential policies in the their policy mix: in addition to large-scale fiscal and monetary expansion, financial macroprudential and micro regulations were explicitly geared towards easing bank capacity to lend and protecting bank asset quality.

The main reasons for this decision were that EU regulators and supervisors quickly realized that banks would have to play a vital role in managing the crisis, yet the economic implications of Covid-19 were a major threat to their asset quality. Corporate loans were expected to be the first asset class to become "problematic" as a result of the pandemic, in particular loans in the most affected, Covid-sensitive sectors such as tourism and hospitality. With the recession unfolding and unemployment rising, corporate loans in other sectors as well as household loans (mortgages and consumer loans) were expected to follow. Without offsetting measures, the pandemic would have ultimately engulfed the entire loan book of the banking system – a veritable NPL "tsunami" in the making.

Being confronted with this scenario, policy makers, regulators and supervisors in the EU and the euro area took numerous measures to ensure that the European banking sector would not be hit by such a "tsunami" of NPLs. With the banking sector challenges of the Global Financial Crisis (GFC) and the euro area sovereign debt crisis still fresh on policy-makers minds, there appears to have been a general consensus that the well-functioning of the European banking system would be crucial to support both the economy during the pandemic and to swift recovery. The policy of unprecedented fiscal and monetary easing, along with equally unprecedented regulatory forbearance, was successfully put in place in both the advanced and emerging parts of Europe and the world.

Although the geographic focus of this chapter is on the euro area and the EU, it is important to recall that asset quality developments in this region resonate across "wid-

er Europe," in particular in the countries of South Eastern Europe and other parts of Emerging Europe. Although several countries in these regions are not (yet) part of the EU, their banking sectors are closely linked to that of the EU. Substantial parts of the banking systems in emerging Europe are owned by EU parent banks. In addition, there is substantial cross-border lending and more generally, there are very close economic ties, e.g. in the form of trade links and labour migration. Last not least, some of the "neighboring countries" that are candidate and potential candidate countries in South Eastern Europe, already apply the existing EU and euro area rulebook relating to NPLs. Emerging Europe outside the eurozone also benefitted greatly from the European Central Bank's currency and repo operations to ensure necessary euro liquidity particularly in the early days of the pandemic. These helped enable anti-cyclical stimulus measure in emerging Europe which they could not mount during earlier crises. Significant changes to asset quality in the EU banking sector will therefore have a substantial impact on these countries too, and, to a lesser extent, the other way around.

In the remainder of this paper, we first recall the "NPL landscape" in the euro area and the EU at the start of the pandemic. The situation in early 2020 was substantially better than a few years prior but NPLs were still an important challenge for some parts of the continent, and the new resolution system remained largely untested. This is followed by a tentative assessment of the impact of the pandemic on asset quality in the EU so far. We close with proposals for change to the available options to manage and resolve the very likely emergence of NPLs that go beyond those that the European Commission and the European Central Bank's Single Supervisory Mechanism (SSM) currently envisage.

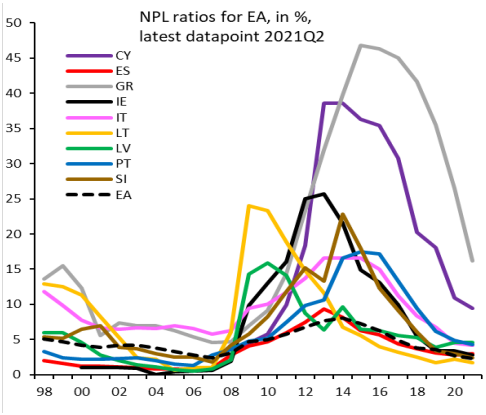
8.2. THE NPL LANDSCAPE ON THE EVE OF THE PANDEMIC

By the time when the Covid-19 pandemic started, the euro area and the EU had made a lot of progress in dealing with the previous wave of NPLs resulting from the GFC and the euro area sovereign debt crisis. NPL levels had fallen substantially from their peaks, banks were better capitalized, regulators had introduced more stringent and consistent definitions for problem assets and supervisors tightened their approach towards NPL management. Progress was also made towards improving the resolution system, though it remained a mix of national and EU-level measures with emphasis on the former and was never seriously tested. Overall, the euro area NPL ratio peaked in 2014 at just over 8% before declining to 3.6% in 2019. In some euro area countries, however, NPL ratios remained substantially higher (Figure1).

These achievements were hard earned. In the immediate aftermath of the GFC, some CESEE EU countries, notably in the Baltics experienced a substantial rise in NPLs when externally financed booms ended abruptly. Shortly afterwards, a number of mainly southern European euro area countries became "NPL hotspots" in the wake of the sovereign debt crisis.[5]

[5] For an assessment and comparison of how NPLs were treated during the Asian crisis in that region and during the GFS and the Eurozone sovereign debt crisis in Europe, see Fell et al (2021).

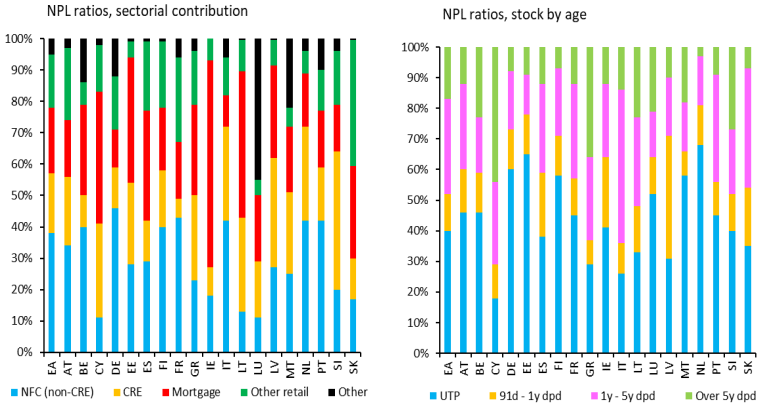
Figure 1: NPL ratios in the euro area and selected euro area countries, 1998-2021.



Notes: EA refers to the euro area in the constant 2019 composition. EA6 is the weighted average figure for Cyprus (CY), Greece (GR), Ireland (IE), Italy (IT), Portugal (PT), and Slovenia (SI). Other highlighted countries in the chart are Spain (ES), Latvia (LV), and Lithuania (LT).
Sources: IMF and ECB data. Authors' calculations.

When assessing the "NPL starting position" for the euro area in 2020, it is important to look in more detail at the structure of euro area NPLs and cross-country differences. In 2019, corporate and commercial real estate lending accounted for about 55% of all euro area NPLs. The remainder was more or less evenly split between mortgages and other retail loans. Differences between the euro area countries were, however, pronounced.

Figure 2: NPL ratios by sector and maturity, 2019.



AT= Austria, BE = Belgium, CRE = commercial real estate, CY = Cyprus, DE = Denmark, EA = euro area, EE = Estonia, ES = Spain, FI = Finland, FR = France, GR = Greece, IE = Ireland, LT = Latvia, LU = Luxembourg, MT = Malta, NFC = non-financial corporations, NL = Netherlands, PT = Portugal, SI = Slovenia, SK = Slovakia.
Source: ECB supervisory data. Authors' calculations.

Looking at the NPL stock by age, slightly less than half of the euro area NPL stock in 2019 had been in default for more than 1 year but differences between euro countries were again quite pronounced. The share of Unlikely to Pay (UTP) loans[6] in total problem loans ranged from under 20% to almost 70%. At the same time more than half of the NPL stock in Cyprus, Greece, Italy, and Latvia was older than 1 year, suggesting that the NPL resolution process in these countries was quite slow.[7]

The gradual decrease in European NPL levels since the middle of the last decade was partly due to the relatively strong economic recovery and a rebound in credit growth. In addition, European policy makers, regulators and supervisors launched and implemented a comprehensive set of measures to improve NPL management and resolution. The European Banking Authority (EBA)[8] agreed in 2013 to a uniform EU-wide definition of NPLs (EBA 2013). This significantly strengthened the measurement and comparability of NPLs. The ECB's Comprehensive Assessment (CA) of the euro area banking system in 2014, comprising an asset quality review and a solvency stress test for 130 significant euro area banks, helped to clarify the true extent of the euro area NPL problem at the time (ECB Banking Supervision 2014).

The Single Supervisory Mechanism (SSM, often referred to as ECB Banking Supervision) established in 2014 focused on the euro area NPL problem early on. In March 2017, the SSM published its guidance to banks on NPLs (ECB Banking Supervision 2017), outlining the measures, processes, and best practices banks should incorporate when tackling NPLs and urging banks with high NPL ratios to treat this as a priority. In 2018, ECB Banking Supervision also clarified supervisory expectations for NPL provisioning (ECB Banking Supervision 2018). In addition, the ECB published a number of contributions focusing on the secondary NPL market, including an analytical framework to look at information asymmetries between potential buyers and sellers (Fell et al. 2016), the possible role of national Asset Management Companies (AMCs) (Fell et al. 2017),[9] and securitization schemes (Fell, Moldovan, and O'Brien 2017).

Many of these initiatives were incorporated into the "EU Council Action Plan on NPLs" (July 2017),[10] covering a wide range of policy objectives and recommendations on supervisory tools, macroprudential approaches, secondary NPL markets and targeted structural reforms.

[6] UTP loans continue to be serviced with a delay of less than 90 days and are considered nonperforming based on other data about the borrower's expected ability to repay the loan.

[7] The likelihood that such "old" NPLs can be resolved without substantial losses is particularly low.

[8] EBA is the EU agency in charge of coordinating banking sector regulation and supervision across the EU.

[9] This led to the subsequent development of the EU's "AMC Blueprint" (European Commission 2018).

[10] European Council (2017). For the state of the implementation of the Action Plan prior to the Covid-Pandemic see European Commission (2019).

Figure 3: Main elements of the EU Action Plan on NPLs.

Supervision	Macroprudential Approaches	Secondary markets	Insolvency frameworks
• **Clarify supervisory powers** as regards bank provisioning policies • **Consider prudential provisioning backstops** for new NPLs • **Implement NPL guidance for LSIs** and non-SSM EU member states • **Guidelines on loan origination** • **Guidelines on loan tape monitoring**	• **Develop macroprudential approaches** to prevent the re-emergence of system-wide NPL problems • **Develop blueprint for national AMCs,** consistent with EU legal framework (State aid rules, BRRD)	• **Issue disclosure requirements on asset quality** • **Strengthen data infrastructure;** develop standardized NPL data templates • **Consider setting-up of NPL transaction platforms** • **Remove impediments to transfer NPLs to non-banks.** Simplify licensing requirements for third-party loan servicers	• **Benchmark national loan enforcement regimes and insolvency frameworks** • **Develop focus on insolvency issues in the 'European Semester'** • **Analyze possibility of enhancing protection of secured creditors**

Source: European Commission.

By late 2019, the implementation of the EU Action Plan was well advanced, except for actions related to benchmarking and improving insolvency frameworks. The range of measures to improve the European "NPL framework" contributed to an overall decline in NPL stocks and helped to increase activity on the secondary NPL market.

NPL market transactions started to gain traction in the second half of 2016 (KPMG 2016). Most transactions took place in larger NPL markets like Italy and Spain, but some transactions were also recorded in smaller euro area countries and emerging Europe, particularly by subsidiaries of EU-based parent banks under the umbrella of the Vienna Initiative. Moreover, the secondary NPL market increasingly diversified in terms of both asset classes and the types of loans to be traded and securitized.

Overall, the European NPL situation at the start of the pandemic had greatly improved compared to the middle of the last decade. The stock of NPLs had declined significantly and the regulatory and supervisory framework had been substantially strengthened. That notwithstanding, NPL levels were still elevated in a number of countries and the implementation of the reform agenda had not been fully completed.

8.3. IMPACT OF COVID-19 ON NPLS: NO TSUNAMI TO DATE

As the pandemic hit and the world economy plunged into a deep (though brief) recession, the general expectation was for a rapid worsening of bank asset quality with an NPL tsunami.

Yet the expected NPL shock has not materialized and at the time of writing this paper, the level of NPLs is the lowest on record in almost everywhere in Europe, thanks

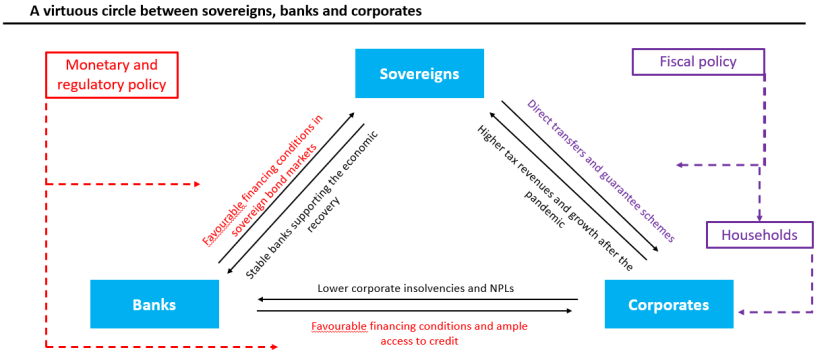
to the successful adoption of the "whatever-it-takes" policy mix, which included specific anti-cyclical bank regulatory measures.

EU regulators and supervisors quickly realized that without offsetting measures, corporate loans, including, but not limited to the most affected sectors such as tourism and hospitality, and household loans would have become quickly problematic with economies in recession and unemployment raising.

Being confronted with this scenario, policy makers, in the EU and the euro area took numerous measures to ensure that the European banking sector would not be hit by a "tsunami" of NPLs. With the banking sector challenges of the Global Financial Crisis and the euro area sovereign debt crisis still fresh on policy-makers minds, there appears to have been a consensus that the well-functioning of the European banking system would be crucial to support the economy during the pandemic and to support a swift recovery.

A range of measures taken by the EU countries have had both direct and indirect effects on NPL. A mix of fiscal, monetary, and regulatory responses created a virtuous circle[11] between sovereigns, corporates, households, and banks (Figure 4). The aim was to maintain adequate liquidity for businesses and households; mitigate the immediate impact on bank balance sheets of the sudden freeze in economic activity; and then incentivise bank lending in support of the recovery. Because of the different forms of population confinement, such as lockdown measures and social distancing, a wide range of sectors was affected.

Figure 4: COVID-19 related support measures.



Source: ECB and authors.

The possible liquidity shortages and difficulties in the timely payment of financial and other commitments, for both businesses and households, would not only have reduced economic activity but could also have had a significant impact on banks as delays in the repayment of credit obligations lead to a larger number of defaults and increased

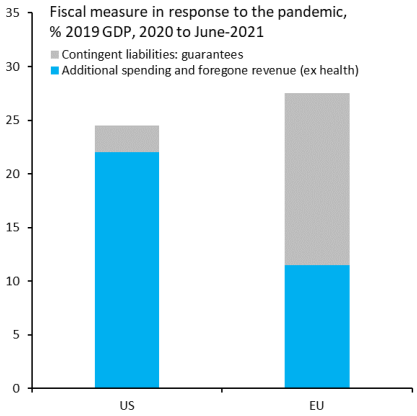
[11] Schnabel (2021).

own-funds requirements. This would possibly have had a second-round effect in the form of potential tensions in the credit market, with a magnified and even stronger adverse effect on the economy.

Unprecedented large fiscal and monetary anti-cyclical policies, suspension/relaxation of a series of EU fiscal and state aide and competition rules, along with easing macro prudential regulations, played a crucial role in providing support to banks, households, and corporates. Central banks cut rates and expanded their liquidity programmes. The European Central Bank continued to provide longer-term refinancing operations (TLTRO) III and introduced the pandemic emergency purchase programme (PEPP).

Direct and indirect fiscal support by the EU member states ranged between a few percentage points of GDP to double digits of GDP. Overall, the EU member states provided a total of about 27% GDP in 2020-21 to date (as a share of 2019 GDP), and the share of guarantees/contingent liabilities has been higher than direct fiscal support (Figure 5). Furthermore, EU countries supported, specifically, employment and therefore household incomes providing up to 70-80% of employees' earnings. As mentioned, the EU has suspended its fiscal rules and relaxed its state aid/competition rules. In the US, in contrast, the share of government guarantees has been small, with most of the support extended directly to firms and households to be able to adjust. The overall size of direct and indirect fiscal support in the EU and the US have been broadly comparable at about 25-27 percent of GDP in the matter of 18 months.

Figure 5: Fiscal support measures in the EU and the US, 2020-21.



Sources: IMF Fiscal database June 2021 and EIB data. Authors' calculations.

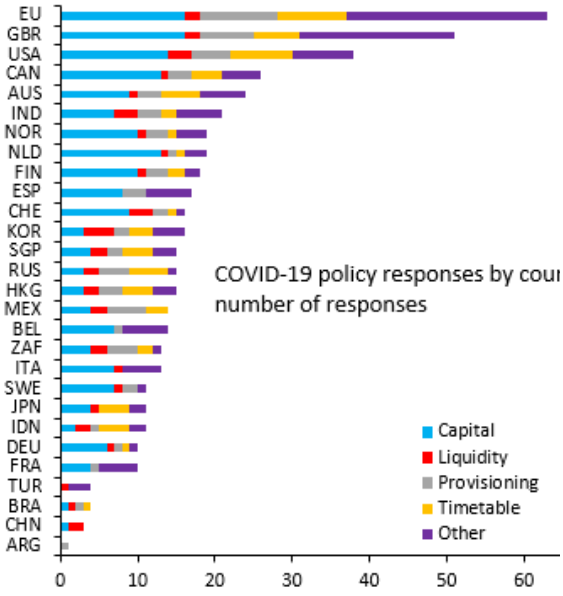
Early in the crisis, the EU relaxed competition and state aid rules and adopted a Temporary Framework to enable member states to provide support to their economies.[12] The framework allowed for direct government support, including guarantees

[12] European Commission (2020a) https://ec.europa.eu/commission/presscorner/detail/en/ip_20_496

of up to €800,000 (later the ceiling was increased to €1.8 million per company) as well as subsidized public loans, and other state aid measures. At the same time, the EBA published guidelines on legislative and non-legislative moratoria considering the COVID-19 shock specifying the criteria that moratoria must fulfill so that the automatic reclassification and reassessment of distress are not applied.[13] Guidelines were later amended and expanded to broaden their reach.

EU authorities also implemented a wide range of regulatory measures aimed at supporting banks and their ability to provide credit. Over 500 measures were announced as part of the response by global standard setting bodies, five G20 members and other leading financial jurisdictions, totaling 34 jurisdictions and authorities (Figure 6). The EU was among the leaders in the total number of measures aimed at supporting its financial systems.[14] Micro- and macroprudential authorities focused on measures to boost banks' capital, liquidity, provisioning and other NPL related measures, as well as changes to implementation schedules and reporting requirements.[15]

Figure 6: Total number of bank regulatory measures by jurisdiction and type.



Source: IIF data. Authors' calculations.

[13] https://www.eba.europa.eu/regulation-and-policy/credit-risk/guidelines-legislative-and-non-legislative-moratoria-loan-repayments-applied-light-covid-19-crisis

[14] Iwamoto and Rismanchi (2020).

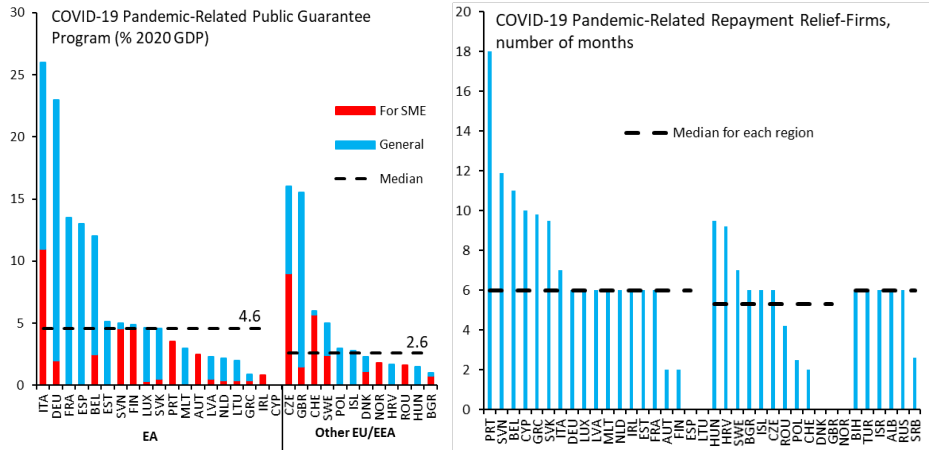
[15] For a review of the macroprudential policy response in the CESEE EU countries see Eller, Martin and Vashold (2021).

As mentioned, a unique feature of fiscal support in the EU has been heavy reliance on ***government guarantees*** to incentivize lending with risk sharing under unprecedented economic uncertainty. The support measures targeted those businesses in need and those that have limited alternatives to access liquidity from elsewhere, e.g. capital markets. As a result, public guarantee measures were more often aimed at small and medium-size enterprises (SMEs), including micro businesses and the self-employed, which account for large shares of employment and economies in some EU countries, and sectors particularly hard-hit by the pandemic.

In addition, member states used ***debt moratoria*** on loan repayments with the aim of providing financial relief to borrowers by allowing suspension or postponement of payments within a specified period. Debt moratoria were either legislative (decided at national level) or non-legislative (bank/private sector driven). Eligibility criteria varied from country to country and included sectoral exposure, residency (e.g. only domestic exposures are eligible), and performance or repayment capacity assessment.

Use of guarantees and moratoria, however, varied greatly among countries. Italy had among the highest share of public guarantee program of 25% of GDP – with almost half going to SMEs –, compared to 4.6% median for euro area (Figure 7). Germany, and outside the euro area Great Britain and the Czech Republic also used sizeable guarantees. Regarding moratoria, Cypriot banks reported that almost 50% of their total loans to households (HHs) and non-financial companies (NFCs) were under moratoria. Banks in Hungary and Portugal also reported extended use of moratoria, as more than 20% of their reported loans to NFCs and HHs were under moratoria. Length of moratoria also varied greatly by country.

Figure 7: Pandemic-related public guarantees and debt moratoria in Europe, 2021.

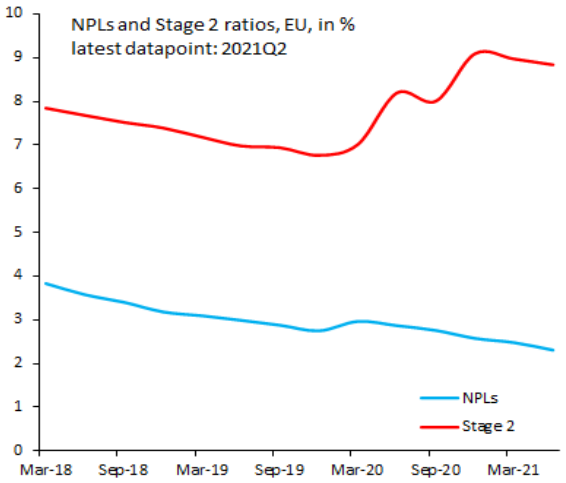


Source: IMF data. Authors' calculations.

How effective have public guarantees been? Data from the Vienna Initiative's CE-SEE Banking Survey (EIB, 2021) suggest *critical* importance. At some point during the pandemic, in the Central-Eastern European region as much as 80% of parent banks and their subsidiaries have taken advantage of government guarantees, and virtually all banks considered these the most important enabling factor for loan extensions. Moreover, among countercyclical regulatory policies banks considered the flexibility of NPL treatment the most important supportive policy action.

The overall result of the above fiscal and regulatory measures and the economic recovery has been a continued *decline* in overall NPL levels in the EU to date – in stark contrast to the widely feared NPL tsunami just a year ago. Not only that the NPL tsunami did not materialise – NPLs in fact have declined after a temporary tick-up around the March 2020 market stress (Figure 8). Banks have begun to release NPL provisions made at the onset of the pandemic. Policies have worked. That said, total Stage 2 loans started to increase, possibly foreshadowing problems to come (see below).

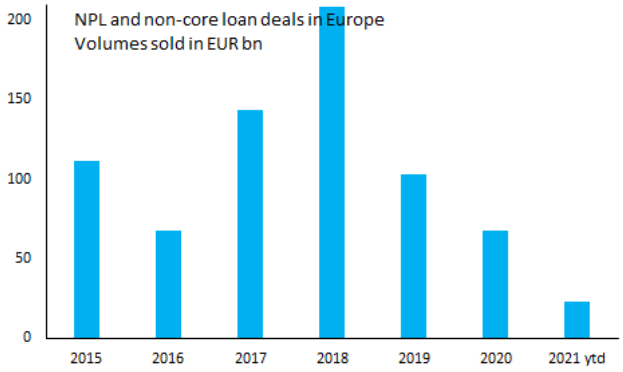
Figure 8: Non-performing loans and Stage 2 loans, 2019 - June 2021.



Source: EBA and authors. Authors' calculations.

Reflecting these developments, the secondary NPL market has slowed during the pandemic until now. While Europe's NPL market is not homogenous—some markets have remained busy, such as Italy and Greece—overall European NPL activity has slowed during the pandemic. The combination of long-term falls in NPL levels and the COVID-19 lockdown saw NPL and non-core loan deal activity for 2020 down 34% year-on-year at €67.7 billion, making the period the least active since 2016 (Figure 9).

Figure 9: Secondary NPL market development in Europe, 2015-2021.



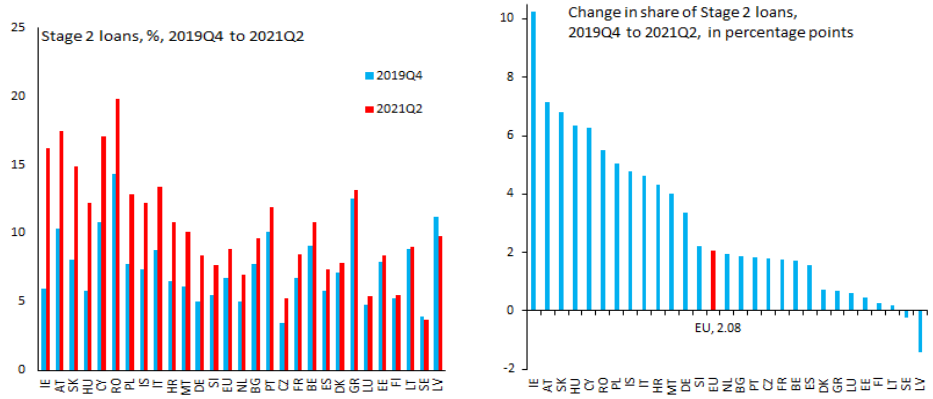
Source: KPMG data. Authors' calculations.

8.4. FROM "NPL ANGST" TO OPTIMISM – AND BACK?

Yet there are several signs that things are changing and a deterioration in NPLs is expected:

First, the level of "Stage 2" loans – underperforming loans with increased credit risk relative to origination but not yet "non-performing" – has *increased* during the pandemic, and recently stabilized at a level almost 2 percentage points higher than at the beginning of 2020 (Figures 8 and 10). The diverging move of NPLs (declining) and Stage 2 loans (rising) can foreshadow that NPLs can increase in the near future.

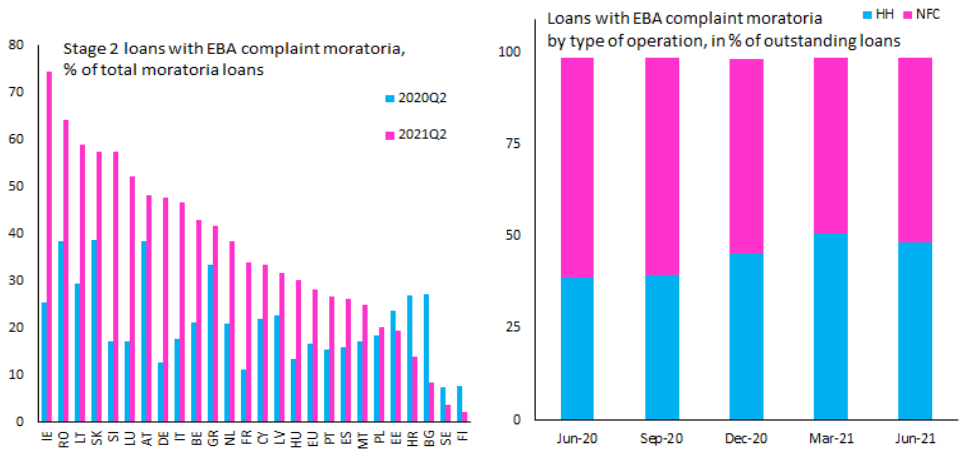
Figure 10: Share of Stage 2 loans.



Sources: EBA and authors. Authors' calculations.

There are sizeable differences in Stage 2 loans across countries (Figure 10). The highest *level* of Stage 2 loans is recorded in Romania (over 20%), followed by Austria, Sweden and Ireland (which also saw the biggest *increase*). Stage 2 loans which are still under moratoria are also the highest in Ireland, and many other countries also record levels in excess of 50% (Figure 11). The share of household loans under moratoria has risen to 50% during the pandemic. This can be an indication of distress, yet possibly also the fact that many debtors have taken full advantage of the schemes.

Figure 11: Share of Stage 2 loans under debt moratoria.



Source: EBA, and authors. Authors' calculations.

Second, with the recovery underway, the extraordinary policy measures that have shielded asset quality since the start of the pandemic will be withdrawn. Vaccination programs are rolled out across Europe, growth and employment are recovering and markets stabilize although demand/supply imbalances giving now rise to inflationary pressures in many countries. Though new COVID variants such as currently "Omicron" can unfortunately delay the recovery process, the Covid crisis should get under control in the foreseeable future and the withdrawal of the extraordinary macroeconomic and regulatory support will start. Although early data indicate that the expiration of some of the support schemes has not brought about major disruptions (ECB, November 2021) it is still expected that European NPL stocks increase as insolvency moratoria, employment protection schemes, overall fiscal support and central bank liquidity support measures unwind. This is particularly relevant in Emerging Europe where several central banks have started monetary policy tightening in the face of rising inflation.[16]

[16] EBRD, Vienna Initiative (2021).

Third, a specific concern for bank balance sheets is that more than half of European banks' exposure is to sectors that were particularly hard-hit by the pandemic.[17] These sectors include hospitality, retail trade, and real estate. In addition, in some countries, asset prices, including housing, have soared (see below) which is likely to result in a correction further down the road. Overall, some banking surveys suggest that many banks expect NPL worsening in the coming period (EIB, 2021).

Fourth, as highlighted in the ECB's recent Financial Stability Review (November 2021), dealing with NPLs under multi-creditor loans[18] will require transparent data management and coordinated solutions that can be costly and time-consuming to implement.

Finally, fifth, initial conditions matter. Countries with worse starting conditions (relatively high debt levels and a relatively large NPL stock), higher economic reliance on sectors most affected by COVID, and higher government guarantees will face particular challenges.

What are the main risks to bank asset quality? Against the backdrop of reasonable but still below-peer European bank profitability (ECB, November 2021), we see the following near- to medium- term risks on the horizon that policy makers need to carefully manage:

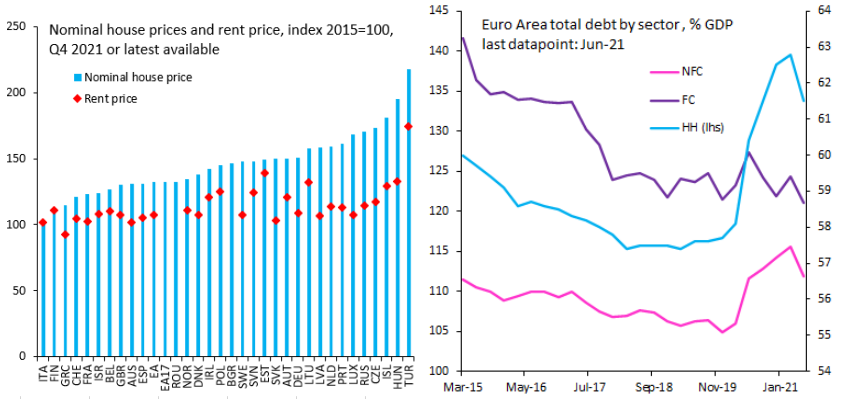
1. *Soaring asset prices*, including housing prices, which can put pressure on prices of collaterals. In virtually all European countries housing prices have increased (Figure 12, left hand chart), in some cases by very significant amounts. This is both a rising financial stability risk and a political risk inasmuch as access to first time buyers (typically young adults) continues to deteriorate.
2. *Increased private sector indebtedness*, which, together with expected interest rate rises, will increase debt repayment difficulties. Since the start of the crisis, household debt in OECD countries has jumped by about 4 percentage points of GDP, and corporate debt by 7 percentage points of GDP (Figure 12, right hand chart).
3. *There is an increased risk of "zombification" of firms.* Recent research by Bruegel economists (2021) finds that countries and regions that have been most affected by the pandemic are those where pre-pandemic levels of "zombie" firms were already higher. Less productive firms were also harder hit by the COVID-recession (in the services sector such as hotels, restaurants etc). This, together with the fact that business bankruptcies have remained well below pre-pandemic levels suggest that the share of unproductive "zombie" firms is higher today than before the pandemic.
4. *Insufficient policy focus on easing the protracted supply side constraints*, which may result in sustained inflationary pressures, and necessitate premature monetary tightening from the viewpoint of economic recovery.
5. *Premature stimulus withdrawal.* In advanced Europe we see less of a risk for this,

[17] Shekhar et al. (2021).

[18] Multi-creditor loans involve loans related to non-financial firms that have borrowed from multiple creditors.

though state aid and competition rules would need to be extended beyond 2021 to support any NPL resolution should the need arise.

Figure 12: Housing prices and private sector indebtedness.



Source: OECD data. Authors' calculations.

8.5. A DIFFERENT CRISIS AND A DIFFERENT APPROACH TO NPL RESOLUTION?

As discussed in the previous sections, policy makers in the EU and the euro area reverted to an unprecedented mix of fiscal, monetary and bank regulatory policy to stem the negative economic and financial effects of the Covid-pandemic. As a first, regulators and supervisors made widespread use of temporary exemptions to support these countercyclical efforts. These were largely successful although we may still see a substantial rise of NPLs once policy support measures are fully withdrawn. The use of large-scale public support during the acute phase of the crisis raises, however, the question of whether the resolution of future NPLs is also likely to benefit from enhanced public support.

This question is particularly relevant for two well-established resolution approaches for distressed assets: securitization and Asset Management Companies (AMCs), often referred to as "bad banks."[19] Both approaches normally require public support, mostly in the form of guarantees which, from a fiscal perspective, are contingent liabilities of the guaranteeing sovereign.[20] The use of such guarantees has been substantially and increasingly constrained by EU competition and state aid rules. This was a development

[19] This term is rather unfortunate, given that AMCs are not normally banks, i.e. do not hold a banking license.

[20] Another resolution approach involving state guarantees are asset protection schemes (APSs). These are mainly used in situations characterized by widespread uncertainty about the general health of the financial sector. Given all the support measures already deployed, this is unlikely to be the case in the post-Covid years.

that arguably prevented the establishment of large-scale AMCs in some of EU Member States that were most affected by high NPL levels before the start of Covid. The restrictive European approach towards public assistance of NPL resolution stands in contrast to practices in other parts of the world, notably Asia, where (public) AMCs operate in many countries on a permanent basis (Fell et al, 2021).

Publicly supported and appropriately structured securitization schemes for NPLs can change the risk-return profile on secondary NPL markets and increase the confidence of potential investors in the performance of these financial instruments. This form of public support may also signal to investors a commitment of the sovereign to structural reforms facilitating NPL valuations, e.g. legal changes reducing the time and costs to recovery, thus further stimulating the general secondary NPL market.[21] The scheme does not require any upfront investment by the government although the public guarantee is a contingent liability for the government and constitutes a fiscal risk.

After many years of very limited activity in EU NPL securitization markets, the Italian and Greek NPL securitisation schemes ("GACS" in Italy, launched in 2016, and "Hercules" in Greece, introduced in 2019) helped to reduce NPL stocks in these jurisdictions. Although it took some time for GACS to gain traction, its success illustrates the potential of this approach. In 2019, the EU introduced a uniform set of rules for such securitization schemes and in 2021 the regulatory treatment of NPL securitization schemes was further streamlined with a view to making this NPL resolution approach more attractive.[22]

Notwithstanding the progress made, the European Commission still requests such schemes to be designed in a way that they are free of state aid. This requires in particular that:[23]

- The risk for the state remains limited, e.g. by restricting the guarantee to the senior tranche of the notes sold in a securitisation scheme;
- The risk distribution is tested and confirmed by the market before the State assumes any risk, e.g. by requesting that the guarantee only becomes effective if more than half of the non-guaranteed and riskier tranches have been sold to private market participants;
- The state's remuneration for the risk is based on a market benchmark and corresponds to the level and duration of the risk the State takes in granting the guarantee.

Whereas these restrictions help to limit the risk for the sovereign and help to en-

[21] For further details, see Fell, Moldovan, and O'Brien (2017).

[22] Regulation (EU) 2021/557 amending the SR and Regulation (EU) 2021/558 amending the CRR ("the Quick Fix Regulations") were published in the EU Official Journal on 6 April 2021 and came into force on 9 April 2021.

[23] European Commission (2021). State aid: Commission approves prolongation of market conform asset protection scheme for banks in Greece. 9 April 2021. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_1661

sure a level playing field from a state aid perspective, they have a limiting impact on the usability of NPL securitization schemes. Limiting the guarantee to the least risky tranches sold in the securitization scheme, limits e.g. the governments' ability to make it marketable. In the event of a substantial worsening of the NPL landscape in the EU, a fresh look at the costs and benefits of the current set-up may be warranted. The ECB has specifically argued for a more flexible approach to state-aid in dealing with asset quality deterioration (ECB May 2021).

Turning to systemic (banking-sector wide) AMCs, such vehicles have a proven record in making significant and rapid contributions to the clean-up of banking sectors suffering from NPL problems. Examples include AMCs established in Sweden in the early 1990s (Jonung 2009) and, more recently, in Ireland (2010), Spain (2012), and Slovenia (2013). Government-owned or supported AMCs usually acquire distressed assets at a price commensurate with their long-term economic value rather than their (temporarily depressed) market value. The success of systemic AMCs depends on their design and the prevailing economic circumstances. Experience suggests that successful AMCs focus on particular asset classes, that the transfer price is based on realistic asset valuations, that their governance structure is well-designed and – importantly – that they operate in a sound macroeconomic and financial environment.

In the EU, government-sponsored, systemic AMCs operate within the EU legal framework governing state aid to the financial sector, in particular the Bank Recovery and Resolution Directive and the State Aid communications of the European Commission.[24] These rules and their interplay were clarified in the "AMC Blueprint" (European Commission 2018) which discusses many important aspects that are relevant for successfully setting up and running of system-wide AMCs.

Despite the publication of the blueprint and the inclusion of systemic AMC's as a possible NPL resolution option in the 2017 EU NPL Action Plan, no such vehicle has been set up in the EU since 2013. This is partly due to the general downward trend in NPL levels observed until 2019 but it also shows that in particular the state aid requirements for such a scheme remain a substantial hurdle. In 2017, the EBA first launched the idea of a pan-European AMC. It was not picked up at the time due to a mix of operational concerns, NPL markets across the EU are quite diverse and a pan-European AMC would face a highly complex task, and arguably more importantly, about loss mutualization and risk-sharing between high and low-NPL countries. These concerns are still valid and so are the original level playing-field concerns, motivating EU state aid rules relating to AMCs. However, the head of the ECB's SSM reflected the idea of an EU-level ACM during the pandemic (FT, 2020).

That said, the prospect of a sizeable, Covid-induced increase in NPLs in the EU should be a good enough reason to take another look at how AMCs could be used to

[24] See Communication from the Commission on the treatment of impaired assets in the Community banking sector (Impaired Assets Communication, 2009/C 72/01) and Communication from the Commission on the application, from 1 August 2013, of state aid rules to support measures in favor of banks in the context of the financial crisis (Banking Communication), OJ C 216, 30.7.2013, 1–15.

speed up the NPL resolution process in the EU, at the national and possibly at the European level. For both resolution approaches, EU-wide state aid rules need to be flexibly adapted. We do not advocate outright and general exemption of state aid rules (which may run the risk of moral hazard), but a transparent case-by-case approach to their application in the case of AMCs and NPL securitisation. The current reconsideration of the EU's fiscal rules for the post-pandemic era provides an opportune context to signal the need for transparent flexibility in state aid rules in the case of systemic AMCs. That consideration may in the end include a Covid-exemption in recognition of the extraordinary nature of this crisis.

While the above-mentioned political and operational concerns about an EU-level AMC remain in place, it would be advisable to re-consider the set of costs, benefits and requirements for such an institution, in particular if it turns out that the increase in NPLs in Europe turns out to be more severe that what is currently foreseen in a "baseline scenario."

8.6. CONCLUSION WITH PROPOSALS

Low NPL levels to date have been the result of the "whatever-it-takes" COVID policy play. The COVID pandemic policy response of unprecedentedly large fiscal and monetary stimulus and regulatory forbearance have successfully avoided a global economic meltdown. Not only advanced countries but, to a lesser extent also emerging markets managed to mount sizeable anti-cyclical policies, creating a positive *international virtuous cycle* as well. Overall asset qualities have been maintained or even improved despite an initial sharp contraction in GDP, and asset prices have soared.

An equally unique global scientific cooperation produced several successful vaccines in less than one year from the identification of the virus, creating the path to relaxing lockdowns and a rapid economic recovery.

Yet as much as the outcome of the crisis response, the outlook for recovery and asset quality too is fraught with high uncertainty. The vaccine roll-out has been uneven across countries – yet no one is safe until everyone is safe under a pandemic and in this important aspect uncertainty is weighing on recovery prospects. The legacy of the truly unparalleled crisis management is also uncertain. As economy recovery is underway and markets stabilized, how will economies react to the unwinding of those extraordinary policies that are still in place? How will policies deal with the challenge of hitherto unheard-of supply constraints, overall shortages and rising inflationary expectation as well as labour shortages particularly in low skilled segments? Will international cooperation, including by central banks, continue to now mitigate negative spillovers, capital flow volatility and possible market overreactions?

Moreover, there are some clear near-term challenges on the horizon that need to be carefully managed, as we highlighted them. Chief among those are soaring asset prices, including housing prices, which can put pressure on prices of collaterals and increased private sector indebtedness. The persistent problem of "overbanking" in Europe and

increasing competition from fintech/bigtech may also put pressure on bank balance sheets in the medium- to long-run.

Under such unprecedented policy and market uncertainty, it is too early to give a reliable assessment of the impact of the pandemic on NPLs and ensuing policy recommendations. The veritable *decline* in NPLs, instead of a widely feared "tsunami," has been a positive surprise to date, but the net impact of economic recovery and reversing accommodative policies and regulations on asset quality is just highly uncertain. Some claim that the impact will be clearly negative (Kasinger et al, 2021) and policy makers largely agree. Also, any large asset price reversals will put pressure on assets that back mortgages and business loans, putting at risk bank balance sheet quality.

Against such heightened uncertainty stand the pre-Covid much improved health of the banking sector and a much better prepared regulatory system and framework. The NPL resolution infrastructure is also in much better shape, with more appropriate regulatory requirements, better and credible oversight, higher provisioning, and better preconditions for active trading in the secondary NPL market. That said, not all reforms were fully implemented before the pandemic started: most worryingly, the pan-European banking resolution system is still in infancy and its elements have not yet been tested.

The European pandemic crisis response's unique feature has been a heavy reliance on government guarantees. To recall, more than half of fiscal packages across Europe were government contingent liabilities in the form of loan guarantees. In case of an NPL "shock" in the future, this can result in more public money being used to facilitate NPL resolution. This is partly out of necessity and due to the existence of market failures and partly due to the fact that the banking system is now seen as part of the crisis solution rather than the main problem.

Against this background, we propose a number of policy steps:

- **Policy makers must recognize that asset deterioration in the aftermath of the pandemic will be predominantly the result of exogenous shocks to the financial sector.** Without belittling the risk of corporate "zombification" as a result of policy support to firms that are not viable in the long-run, "the benefit of doubt" should normally prevail and forbearance and support should be the first line of action.
- **That said, at this point is appears that even if NPLs start rising in most affected sectors such as tourism and other services, the probability of NPLs becoming a major systemic risk in the near future is not high. However, all this is *policy dependent.*** There are non-negligible risks of policy mistakes such as premature stimulus withdrawal particularly if new and more threatening Covid-variants continue to emerge; lack of focus on rapidly solving supply constraints; and in the EU lack of flexibility on state aid rules to support NPL resolution with government involvement. Encouragingly, some policy support schemes that expired recently caused no distress.
- **Speed is of the essence**. In case of a rapid emergence of NPLs, policy makers, regulators and banks should act fast and decisively to assess and ultimately re-

move non-performing assets from balance sheets. This is a clear lesson from previous crises (GFC and sovereign debt crisis in Europe) as well as Japan

- **Any call on already existing government guarantees should be accepted and honoured through a fast-track process. This should be subject to verification of the involved bank's ability to first absorb the loss**. In Europe, more than half of the pandemic fiscal packages were given in the form of loan guarantees. Should these be called on, governments would need to act swiftly and transparently. The time is *now* for governments to prepare for such fast-track procedures. Transparency is needed to avoid any reputational and/or moral hazard problems.
- **Facilitating secondary NPL markets is of paramount importance.** Governments should look into ways of removing any obstacles for the smooth functioning of such markets. This includes also further steps to facilitate the use of NPL securitisation schemes.
- **The ECB should maintain its currency swap and repo operations with emerging European central banks.** These have been highly effectively to limit market overreaction during the pandemic and will be needed as policy tightening in the advanced world gets underway while country economic recoveries in emerging Europe are in different stages.
- **Asset Management Companies.** In the wake of the Asian crisis and more recently the twin GFC and eurozone debt crisis, AMCs were helpful in some countries to swiftly remove NPLs from bank balance sheets. Since then, the regulatory burden to set up such vehicles has increased. In the wake of the COVID crisis, the EU regulatory framework should be revised with a view of making AMCs again a more feasible option for high-NPL EU countries, including a flexible adaptation of state aid rules. In addition, in preparation for a more substantial NPL increase than currently expected, reconsider AMCs at the EU level and design specific measures to overcome the challenges for AMCs at the EU level.
- **Finally, we call for "forward guidance" on NPL management that is conditional on economic recovery.** The ECB/SSM and EBA, and the competent country authorities should step up their communication strategy to include asset quality/NPL issues.

REFERENCES

Altomonte, C., M. Demertzis, L. Fontagné and S. Mueller (2021) "COVID-19 financial aid and productivity: has support been well spent?" Policy Contribution 21/2021, Bruegel.

Bank of International Settlement (BIS), Quarterly Review, September 2021.

EBA (2013), final draft technical standards on NPLs and Forbearance reporting requirements, October 2013. www.eba.europa.eu/eba-publishes-final-draft-technical-standards-on-npls-and-forbearance-reporting-requirements

ECB (2021a), Financial Stability Review May 2021.

ECB (2021b), Economic Bulletin, 6/2021, November 7, 2021.

ECB (2021c), Financial Stability Review, November 2021.

ECB Banking Supervision (2014). Aggregate Report on the Comprehensive Assessment, October 2014. https://www.bankingsupervision.europa.eu/ecb/pub/pdf/aggregatereportonthecomprehensiveassessment201410.en.pdf

ECB Banking Supervision (2017), Guidance to banks on non-performing loans, March 2017. www.bankingsupervision.europa.eu/ecb/pub/pdf/guidance_on_npl.en.pdf

ECB Banking Supervision (2018), Addendum to the ECB Guidance to banks on non-performing loans: supervisory expectations for prudential provisioning of non-performing exposures, March 2018. www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.npl_addendum_201803.en.pdf

M. Eller, R. Martin and L. Vashold (2021), CESEE's macroprudential policy response in the wake of the COVID-19 crisis, in "Focus on European Economic Integration" 1/21, pp. 55-69, March 2021.

Enria, Andrea (2020), ECB: the EU needs a regional "bad bank," The pandemic is a chance to clean-up and strengthen Europe's crisis-weakened banks, October 26, 2020. https://www.ft.com/content/cc3a9a51-4d9a-4c73-9ff0-9f623ecf4065

European Bank for Reconstruction and Development (EBRD), Vienna Initiative NPL Monitor, H1 2021 (November 2021).

European Commission (2018), AMC Blueprint – SWD (2018)72final, March 2018. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD:2018:72:FIN

European Commission (2019), Fourth progress report on the reduction of non-performing loans (NPLs) and further risk reduction in the Banking Union, June 2019. https://ec.europa.eu/info/publications/190612-non-performing-loans-progress-report_en

European Commission (2021), State aid: Commission adopts Temporary Framework to enable Member States to further support the economy in the COVID-19 outbreak, March 2020. https://ec.europa.eu/commission/presscorner/detail/en/IP_20_496

European Commission, Action Plan: Tackling Non-performing Loans ((NPLs) in the aftermath of the COVID pandemic, December 16, 2020.

European Council (2017). Council Conclusions on Action Plan to Tackle Non-Performing Loans in Europe. Brussels: European Council. www.consilium.europa.eu/en/press/press-releases/2017/07/11/conclusions-non-performing-loans/ and https://data.consilium.europa.eu/doc/document/ST-9854-2017-INIT/en/pdf

European Investment Bank (EIB), Vienna Initiative Banking Survey, (Spring 2021).

J. Fell, M. Grodzicki, J. Lee, R. Martin, C-Y.Park, Peter Rosenkranz (eds), (2021), Non-performing Loans in Asia and Europe – Causes, Impacts, and Resolution Strategies, Asian Development Bank (ADB), November 2021.

J. Fell, M. Grodzicki, R. Martin and E. O'Brien (2016), Addressing market failures in

the resolution of nonperforming loans in the euro area, Financial Stability Review, European Central Bank, Nov. 2016. www.ecb.europa.eu/pub/pdf/other/sfbfinancialstabilityreview201611.en.pdf

J. Fell, M. Grodzicki, R. Martin and E. O'Brien (2017), A role for systemic asset management companies in solving Europe's non-performing loan problems, European Economy, Issue 2017.1. http://european-economy.eu/2017-1/a-role-for-systemic-asset-management-companies-in-solving-europes-non-performing-loan-problems/

J. Fell, Moldovan, and O'Brien (2017), Resolving non-performing loans: a role for securitisation and other financial structures? May 2017. www.ecb.europa.eu/pub/pdf/fsr/art/ecb.fsrart201705_03.en.pdf?914a0eb2f9b52060b52c82e12afa1a05

Lehmann, A. and R. Martin (2020) "Economic recovery after COVID-19 requires a clear vision for a healthy banking sector," Bruegel Blog, 16 December. https://www.bruegel.org/2020/12/economic-recovery-after-covid-19-requires-a-clear-vision-for-a-healthy-banking-sector/

KPMG (2016). European Debt Sales Report. Amstelveen, Netherlands: KPMG International Cooperative.

Reinhart, Carmen M. (2020): "This time is truly different," Project Syndicate, March 23, 2020.

Shekhar A, Mai Chi Dao, Andreas A. Jobst, Aiko Mineshima, and Srobona Mitra, with guidance from Mahmood Pradhan (2021). COVID-19: How will European banks fare? IMF, August 2021.

Schnabel, I., (2021): "The sovereign-bank-corporate nexus – virtuous or vicious?," speech at the LSE conference on Financial Cycles, Risk, Macroeconomic Causes and Consequences, January 2021, https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210128~8f5dc86601.en.html

Takahiro Iwamoto, Katie Rismanchi (2021): "Taking Stock: An aerial view of the bank prudential regulatory response to COVID-19 in 2020," February 2021. https://www.iif.com/Publications/ID/4282/Taking-Stock-Aerial-View-of-the-Bank-Prudential-Regulatory-Response-to-COVID-19-in-2020

9. FINANCIAL TOOLS TO TACKLE THE CLIMATE TRANSITION

Antonio Carrascosa
Director of EY Financial Stability Chair, University of Navarra

9.1. INTRODUCTION

Climate-related risks have been described in different ways. TCFD (2017) divides those risks into two large categories: transition risks and physical risks. In the first category, they include policy risks (derived from policy actions adopted in the field of climate change); legal risks (litigation); technology risks (new technologies will affect the competitiveness of many companies and institutions and the demand for their products and services); market risks (shifts in supply and demand for certain commodities, products, and services as climate-related risks increase); and reputational risks (change of customer or community perceptions over the role of a company or institution on sustainability). In the category of physical risks, there are acute risks (event-driven) and chronic risks (related to longer-term shifts in climate patterns). Physical risks include risks related to climate (extreme meteorological phenomena and chronic climatic patterns) and the environment (water problems, lack of resources, loss of biodiversity, etc.).

To meet the global targets set through the Paris Agreement and the United Nations Sustainable Development Goals is challenging, because it means that 95% of the electricity supply must be low carbon; 70% of new cars, zero emission; and the CO2 intensity of the building sector must be reduced by 80% by 2050.[1] From a financial perspective, to meet the 1.5 °C target requires an increase in annual investment in clean energy projects and infrastructure to nearly $ 4 trillion by 2030 (IEA 2021).

[1] Portilla et al. (2020).

A key feature of sustainability is its global nature. That is why global initiatives (United Nations -UN- or Financial Stability Board -FSB-) are needed. Without ambitious commitments from all the polluting countries, especially the largest ones, emission reduction objectives can be unreachable.

The market economy undoubtedly undervalues certain environmental activities. Economic theory itself includes the concept of externalities to identify circumstances in which not all the costs or benefits related to the production or consumption of goods or services are reflected in its market price, resulting in excessive production or consumption (negative externalities) or insufficient production or consumption (positive externalities).[2] Despite evidence that a Pigouvian tax is theoretically the most powerful mechanism for absorbing negative environmental externalities, this paper will examine how the authorities are exploring different financial policies.

According to FSB (2020), the effects of climate-related risks on the financial system are subject to a wide uncertainty. The effects are spread over long term, and actions (and lack of actions) today may affect the severity of risks in the long run. In principle, if we wait to take measures some years, the consequences of climate change, in the long term, could be much more negative.

If physical and transition risks lead to systemic risk and jeopardise financial stability, the impact on banks and other financial institutions could be highly significant.

We will see in this paper that sustainable finance is cross-sectoral: banks, insurers, asset managers, private equity, etc. should be involved. And the scope of work is wide: prudential, conduct, taxonomy, disclosure topics and so on. We will start by describing global financial initiatives on climate risks, in particular from UN and FSB, and we will move on to the description and assessment of the main European financial actions against climate change (the Action Plan on Sustainable Finance, the EU Taxonomy, the EU Green Bond Standard, proposals on prudential banking regulation, the EU Emission Trading System, the EU Carbon Border Adjustment Mechanism, climate-related stress tests and so on). The final remarks of this paper, before conclusions, will focus on the challenges that the climate transition could bring about.

9.2. GLOBAL FINANCIAL INITIATIVES ON CLIMATE RISKS

9.2.1. UNITED NATIONS

In September 2019, during the annual United Nations General Assembly, the Principles of responsible banking were launched by UN Secretary General and 132 founding signatory banks. Since the launch, that number has exceeded 240 (around 40% of the global banking industry).

[2] Calculating the costs of pollution and other externalities is extremely difficult, because of the lack of adequate data. See Nordhaus (2021).

There was an agreement on six Principles (UNEP-2019-): signatories will align their business strategy to be consistent with and contribute to the targets expressed in the Paris Climate Agreement and the Sustainable Development Goals; participants will increase the positive impacts and reduce the negative ones on environment from their activities, with the commitment of setting and publishing targets with those impacts; banks will work responsibly with their customers to encourage sustainable practices; signatories will proactively engage and partner with relevant stakeholders to achieve society's goals; participants will develop an effective governance and a culture of responsible banking to implement these Principles; and signatories will periodically review the implementation of these Principles, being transparent about their contribution .

UNEP (2021a) has published recently a progress report on the implementation of the mentioned Principles, with some interesting findings: 94% of signatories have identified sustainability as a strategic priority for their organisation (65% have implemented sustainability within financing, sales and origination processes and 63% have integrated it into the investment process); 53% of banks have incorporated sustainability into their risk management framework; 16% of banks have fully integrated sustainability aspects in IT management and customer analytics (and 53%, partially); 93% of banks have begun to establish impact analysis systems, with 29% reporting that they have completed their initial impact analysis; 56% of banks have an engagement policy or process with customers and clients in place; 80% of banks have established a governance system that incorporates the Principles and 92% have established sustainability structures at an operational level; 90% of banks have measures in place to promote a culture of sustainability among employees; and 30% of signatories have already put in place third party assurance of their Principles reporting.

UNEP (2021a) has identified the main challenges of banks to meet the Principles: improve the availability and quality of data to track and measure progress (including improvement of corporate disclosure and management of available data); strengthen impact analysis of their activities, products, and services across their portfolios; and link all targets to the outcomes of impact analyses (too many banks are setting targets not linked to portfolios and some of the existing targets do not show clear links to identified significant impacts).

The Net-Zero Banking Alliance (NZBA)[3] was launched on 21 April 2021 as the banking component of the Glasgow Finance Alliance for Net Zero (GFANZ), a coalition of leading financial institutions that are part of the UN's Race to Zero campaign that is committed to accelerate and mainstream the decarbonisation of the worldwide economy, and reach net zero by 2050. Other similar initiatives are: the Net Zero Asset Managers Initiative, the Net-Zero Asset Owner Alliance, the Paris Aligned Investment Initiative, the Net-Zero Insurance Alliance, the Net Zero Financial Service Providers Alliance, and the Net Zero Investment Consultants Initiative.

Comparing NZBA with the above-mentioned Principles, while both are convened by

[3] UNEP Finance Initiative (2021b).

UN, the Principles provide an overarching sustainable framework for banks worldwide, covering a wider variety of topics, and the NZBA is the mechanism by which members deliver the climate element of the Principles, enabling these banks to align their portfolios to the 1.5-degree target.

9.2.2. FINANCIAL STABILITY BOARD

The Group of 20 (G20) Finance Ministers and Central Bank Governors asked, in 2015, the FSB to review, with public and private participants, how the financial sector could deal with climate risks. In response to the G20's request, the FSB established the industry-led Task Force on Climate-related Financial Disclosures (TCFD) in December 2015 to design a set of recommendations for consistent disclosures that will help financial market participants understand their climate related risks.

TCFD (2017) set up the core elements of climate-related financial disclosures around four thematic areas: governance, strategy, risk management, and metrics and targets. They identified the need to get better techniques, including data analytics, to improve the quality of climate-related financial disclosures. That is why moving those issues into annual financial filings is a necessary step.

After this first significant step, climate-related risks have become one of the key elements of the ordinary FSB agenda. The role of the FSB tackling those risks is related to the global nature of sustainability (all sectors of the global economy will be affected; global markets are needed for sustainable finance products; and major financial institutions operate on a cross-border basis). That is why sustainability policies would benefit from a global approach led by the FSB.

The FSB proposes measures in the field of disclosures, data, vulnerability analysis and regulatory and supervisory practices and tools. On disclosures, they propose international standards and corporate disclosures on corporate climate related financial risks with international consistency (International Financial Reporting Standards -IFRS- will play a key role in the development of these standards).[4] On data, goals are: to have granular and comparable data for monitoring climate-related financial risks globally and to develop metrics that adequately translate climate outcomes into financial impacts. With regards to vulnerabilities analysis, the goal is to systematically assess climate-related financial vulnerabilities and potential financial stability impacts (developing and refining the necessary analytical tools). On regulatory and supervisory practices and tools, it is required consistent[5] approaches and tools to address environmental

[4] In November 2021, IFRS Foundation announced that they were setting up the International Sustainability Standards Board (ISSB) to develop global standards to improve the consistency, comparability and reliability of sustainability reporting.

[5] The concern on the regulatory and policy fragmentation is shared by the Institute of International Finance (IIF). This fragmentation means complexity and inconsistency of the resulting standards and requirements, making more difficult the achievement of goals. In IIF-EBF (2020), 65% of the financial institutions in the survey believed that green regulatory market fragmentation was a big source of concern

risks, from an entity perspective and from a systemic one. This supervisory and regulatory approach should be fully integrated within the overall supervisory and regulatory framework to address financial risks.

Recently, the FSB announced that they are exploring the use of Pillar 3 of the Basel Framework to promote a common disclosure baseline for climate-related financial risks across internationally active banks (going forward on granular data for banks and their counterparties, and on defined risk metrics).

The FSB believes that a global approach is compatible with a proactive role of national authorities, as we can see, for example, in the bank solvency rules: Pillar 1 (global minimum standards) includes national discretion and options; and national authorities can take measures to address outstanding risks under Pillar 2 (supervisory review). Likewise, a harmonized approach is compatible with proportionality of measures. Bank solvency rules have also many examples of that proportionality, with standards for global systemic institutions, for national systemic banks and for smaller ones.

9.3. EUROPEAN FINANCIAL ACTIONS AGAINST CLIMATE CHANGE

9.3.1. INTRODUCTION

The European Union is leading global commitments against climate change. For example, its commitment to cut emissions by 2030 has been increased to 55%. Sustainability has also played a prominent part in the extraordinary measures implemented to deal with the pandemic: the recovery and resilience mechanism will channel at least 37% of these resources into green (or sustainable) national projects.

In March 2018 the European Commission launched the Action Plan for a Sustainable Growth,[6] setting a European strategy on green finance and a work plan with three main goals: redirect capital flows to the sustainable investment; manage the climate and social risks; and promote transparency and a long-term approach in the economic activity. More concretely, the Plan aimed at developing an EU classification system (the so-called EU taxonomy); an EU Green Bond Standard; methodologies for EU climate benchmarks; and guidance to improve corporate disclosure of climate-related information.

A key element of the Action Plan is the disclosure of information about sustainability by firms and institutions. The European authorities have approved several rules in recent years with the purpose of strengthening that disclosure.[7] In general, the objective

and will have a material impact on the market environment for sustainable finance.

[6] See European Commission (2018).

[7] EU Directive 2014/95 issued on October 22, 2014 by the European Parliament and Council which amended Directive 2013/34 about the disclosure of non-financial information and information about diversity by certain big companies and specific groups; EU Regulation 2019/2088 issued by the European Parliament and Council on November 27, 2019 about the disclosure of information related to sustainability

is to ensure that the disclosed information (precontractual and periodic reports) is trustworthy and comparable.

In July 2020, the Commission adopted the Strategy for Financing the Transition to a Sustainable Economy, trying to improve the financial sector's resilience and its contribution to sustainability. And in July 2021, a new Commission package included a comprehensive set of measures aiming at achieving EU's climate targets.

9.3.2. THE EU TAXONOMY[8]

An essential regulatory action is the approval of the EU taxonomy in the Regulation published in the Official Journal of the European Union on 22 June 2020. It includes a detailed definitions of environmental objectives (mitigation of climate change; adaptation to climate change; sustainable use and protection of water and marine resources; the shift towards a circular economy; pollution prevention and management; and protection and recovery of biodiversity and ecosystems) and sets out some criteria to be applied to decide whether an economic activity is environmentally sustainable: mainly, a substantial contribution to one or more of the mentioned environmental objectives, without significantly harming any of the other environmental objectives. The taxonomy helps investors in their investment decisions, supports firms in the process of decarbonization and minimizes the greenwashing risk.[9]

The mentioned Regulation sets out that any undertaking which is subject to an obligation to publish non-financial information (by Directive 2013/34/EU) shall include in its statement information how and to what extent the undertaking's activities qualify as environmentally sustainable. In particular, the disclosure shall cover the proportion of their turnover, capital expenditure and operating expenditure derived or related to environmentally sustainable economic activities.[10]

A well-defined taxonomy can mitigate the risk of greenwashing by facilitating verification. In the current EU taxonomy legislation, verification is not addressed, although the use of external review is a key element of the EU green bond standard.

EU taxonomy is binary, in the sense that activities are either taxonomy compliant or not. A binary approach in which only the greenest of activities is labelled as such could deter polluting firms from investment to improve their performance. Thus, it makes sense for taxonomies to incorporate, when possible, greater granularity in the design

in the financial services sector; and EU Regulation 2020/852 issued by the European Parliament and Council on June 18, 2020 to create a framework for facilitating sustainable investments, which amended EU Regulation 2019/2088.

[8] See more details in European Commission (2021a) and EU Technical Expert Group on Sustainable Finance (2020).

[9] For example, an issuer of green bonds can exaggerate on the environmental impact of the projects financed with the bonds.

[10] According to Ehlers, Gao and Packer (2021), signalling environmental benefits of business activities does not necessarily imply a similar signal at the entity level. That is why "activity-based taxonomies can be supplemented by reporting of the materiality of sustainable activities from the entity perspective."

of screening criteria.[11] Although the Commission is focused now in developing a green taxonomy, it could extend it to cover economic activities that are significantly environmentally harmful ("brown" activities) and activities that do not have a significant impact on environmental sustainability (low impact activities). As mentioned, reducing the negative impact on environment of brown activities can make a substantial contribution to one or more environmental objectives.

EU Technical Expert Group on Sustainable Finance (2020) considered that "incremental improvements can be positive and may be captured in other sustainability reporting requirements, but they are not considered aligned for the taxonomy. Identifying an environmentally harmful economic activity as partially green carries significant risks, such as leading the market to believe that any performance improvement is good enough even if the underlying activity and its potential performance is ultimately inconsistent with environmental goals over the medium to long term." Nevertheless, for the future, that group supports a brown taxonomy.

Fabian, N. (2021), chairperson of the European Commission's Platform on Sustainable Finance, has pointed out likely developments of the taxonomy. Firstly, if an activity included in a wider one has obvious environmental benefits, it could be included in the taxonomy unless the global activity has a negative environmental impact (for example, fitting energy efficient windows); secondly, some sectors have low emissions (e.g. education and health), therefore their measures to encourage sustainability would have a relatively low impact, but their efforts should, nonetheless, be acknowledged in the taxonomy; and thirdly, it could be considered to include the environmental efforts of activities with very high levels of emissions (for example, the manufacturing of trucks with high fuel consumption) in the taxonomy.

The Commission has now to come up with the list of environmentally sustainable activities by defining technical screening criteria for each of the mentioned objectives through delegated acts. A first Delegated Act on sustainable activities for climate change adaptation and mitigation objectives was adopted by the Commission on 4 June 2021 and it will apply from 1 January 2022. Thirteen sectors accounting for 80% of all European emissions have been included (renewables, transport, forestry, manufacturing, buildings, insurance, etc). This Delegated Act is a living document and that means that new sector and activities can be added.[12] New Delegated Acts will be adopted on agriculture and some energy sectors not yet included (gas and nuclear energy), as well as on activities making a substantial contribution to the other four environmental objectives.[13]

In practice, banks have many challenges managing the taxonomy: first, climate risks

[11] Ehlers, Gao and Packer (2021).

[12] Some taxonomy-aligned activities could also lose their eligibility if there is a tightening of the criteria.

[13] All the decisions and proposals of the European Commission are based on science-based technical advice. The Commission established a Technical Expert Group on Sustainable Finance in July 2018. This group is the predecessor of a permanent expert group, the Platform on Sustainable Finance, set up in 2020, which brings expertise from the public sector, industry, academia, civil society and the financial industry.

have different features, compared to financial risks, for example, long term horizon, uncertainty on the occurrence of material events and lack of relevant data. Second, banks have to try to keep the eligibility of many clients for financial operations and they need processes and data, but the taxonomy for four objectives has not been published yet. Moreover, small and medium enterprises (SMEs), self-employed workers and agricultural activities are out of the taxonomy. Third, banks need to get through technical information on productive activities of customers to be funded. Fourth, according to the taxonomy, you have to classify and report on flows and stocks. To assess on stocks is quite difficult, because in the origination of those operations, requirements were completely different. Fifth, the principle "do not significantly harm" is difficult to assess because the criteria are not fully clear and easy to manage. And sixth, in the management and reporting of operations, it is sometimes complicated to get information to decide on the sustainability of them. For example, certificates of energy efficiency are easily available, but for other activities to get this information is more difficult. In Spain there are regional registers without a complete homogeneity in the requirements.

Considering other jurisdictions, we can mention a global initiative focused on the comparison of sustainable taxonomies and aiming at mitigating fragmentation of global green definitions: the International Platform on Sustainable Finance (IPSF). It was set up in October 2019 on the margins of the International Monetary Fund/World Bank annual meetings[14] and looks for voluntary adoption of common ground taxonomies, without imposing global standard to any jurisdiction. In IPSF (2021) there is a detailed comparison of EU and China's green taxonomies trying to identify common ground.

9.3.3. EU GREEN BOND STANDARD[15]

The EU is a leader in this emerging market, with 51% of global issuance in 2020 from EU companies and public institutions, and 49% of global green bonds denominated in euros. Nevertheless, current green bond issuance in the EU still only represents 2.6% of total EU bond issuance. Consequently, further strong growth of this market is needed. That is why providing a trusted standard for green bonds could help companies and public authorities to use them to raise funds on European capital markets.[16] According to the European Commission, this will boost the Capital Markets Union and the EU's financial markets as a hub for sustainable finance.

One of the goals of the European Action Plan for a Sustainable Growth was to develop an EU Green Bond Standard. The Commission proposed on 6 July 2021 a Regula-

[14] The 18 members (Argentina, Canada, Chile, China, European Union, Hong Kong, India, Indonesia, Japan, Kenya, Malaysia, Morocco, New Zealand, Norway, Senegal Singapore, Switzerland and United Kingdom) represent 55% of greenhouse gas emissions, 50% of the world population and 55% of global GDP.

[15] See European Commission (2021b).

[16] From an issuer view, the preference that some investors show for green bonds, reflected in some sort of issue premium ("greenium"), could be reinforced with the development of this EU Standard. Aramonte and Zabai (2021) think that this greenium could signal market overheating.

tion to create that standard. It is intended to be voluntary and is based on the detailed definitions of green economic activities in the EU taxonomy.

European green bonds would be checked by an external reviewer to ensure that the bonds are compliant with the Regulation, especially the taxonomy-alignment of the funded projects. These reviewers would be registered with the European Securities and Markets Authority –ESMA– (subject to the compliance of some requirements on transparency, professional qualifications and conflicts of interest). The application of this standard would minimize for investors the risk of greenwashing.

The standard draft follows market best practices on transparency. In particular, private issuers would be subject to the following requirements: before issuing the bond, issuers would be required to publish a "factsheet" with the specific funding goals of the bond (this factsheet would be subject to a "pre-issuance review" by a registered external reviewer); after the issuance, issuers would publish yearly reports showing how they are allocating the proceeds of the bond to taxonomy-aligned projects; and after the allocation of funds, the issuer would require a "post-issuance review" (for some banks, this review should be yearly). Finally, an additional requirement in the proposal: to publish at least one report on the overall environmental impact of the bond.

ECB (2021b) highlights some relevant topics on the proposed standard: the standard should be mandatory for newly issued green bonds within a reasonable time period, while outstanding green bonds could maintain their designation as green for a very long time period; sanctions established in the proposed Regulation could not be sufficient where the issuer does not comply with the taxonomy; when rules on the bond standard are amended, the applicable rules at the moment of the bond issuance should be valid for the entire lifetime of the bond (without modifying the allocation of proceeds); and in the green asset ratio (mentioned in section 9.3.4), only issuer's net exposure to the underlying green asset would count (not the cumulative value of the loans and the bond).

The EU standard does not aim at regulating relevant financial details of these bonds: firstly, these bonds are usually backed by the issuer's entire balance sheet and that means that investors in these green bonds do not depend on the returns of the assets they intend to invest in, but on the overall performance of the issuer. Secondly, prospectuses of these bonds usually state that the issuer will honour such commitments whenever possible; that the issuer may not be able to invest in green assets for different reasons; and that the reviewer might have an unfavourable opinion. Neither of these instances would constitute an event of default that could, for example, trigger the early repayment of the bond. Default (and the ensuing fallout) would only be linked to the bond's financial aspects, not to its green credentials. This means that the commitment to investing in green assets is a matter of good faith rather than legally binding. It is clear that, for the time being, the ramifications of failing to fulfil green commitments are reputational rather than legal, but this does not mean that this risk need not be managed, because if it is not, future green issuances and their investor base will suffer.[17]

[17] Carrascosa, A. and J.L. Simarro (2021). In the case of sustainability-linked bonds, the failure to meet green pledges implies a step-up in interest payments, raising the issuer's borrowing costs. In reality, such

9.3.4. PRUDENTIAL BANKING REGULATION AND CLIMATE-RELATED FINANCIAL RISKS

There is an intense debate on the possibility of recalibrating the capital requirements applicable to banks for sustainable investments. Following the recent review (2019) of the prudential regulation framework, the Capital Requirements Directive and Regulation (CRDV and CRRII), the European Banking Authority (EBA) was mandated to assess a special prudential treatment of exposures related to assets with sustainable objectives as components of the so-called pillar 1 (i.e. with possible impact on the minimum capital requirements for all banks). The final results of that analysis are expected in 2023. Before possible proposals, the Commission will examine the ongoing work at international level, for example within the Basel Task Force on Climate-related Financial Risks.

For the time being, the regulators have taken a prudent path: firstly, pillar 3 (transparency), asking banks to explain their risks and policies so that the market can decide; and secondly, pillar 2, banks will assess themselves and the supervisor will decide whether to apply surcharges to pillar 2 based on the risk guidance issued by the Single Supervisory Mechanism (SSM). On possible changes to pillar 1 requirements, works are being carried out by supervisors and regulators.

On 27 October 2021, the European Commission has proposed a review of EU banking rules to make EU banks more resilient to the transition to climate neutrality. The proposal includes clear requirements to identify, measure, manage and monitor sustainability risks in the general risk management frameworks; widens the scope of climate disclosures to all institutions (not only to large listed ones), in a proportionate way; empowers supervisory authorities to incorporate these risks in the Supervisory Review and Evaluation Process and in stress testing (by authorities and by banks); and requires institutions to have robust governance arrangements and plans signed off by the management body to deal with these risks.

Some of these regulatory alternatives can be analysed from the point of view of prudential banking regulation. Primarily, an overarching principle: when granting a loan, financial risks (particularly, credit risk) are fundamental. Before considering whether a loan meets certain environmental goals, the bank should weigh up the financial risk of the operation. That means that higher capital requirements are advisable when the probability of default on loans increases due to specific environmental risks that may arise during the term of the financial operation provided by the bank. Likewise, capital requirements should be lower when this probability falls. For example, will the probability of default be lower because the housing being bought with a mortgage is more sustainable? It is not sure that borrowers' capacity to pay is closely linked to their preference for sustainable housing. Therefore, in this instance, capital requirements should not be reduced. The conclusion would be different, however, if the collateral for the loans (green assets) is better because of more favourable long-term price expectations for these assets. The final conclusion will depend on both factors.

penalty is not very significant.

The first proposal to be considered[18] is to penalize "brown" credit exposures (greater risk weighting, which would increase the capital required for such financing) as a way to reduce the supply of credit and the production of those activities. This makes, in practice, the weighted average cost of capital of banks more expensive and, consequently, banks would be less willing to lend for each interest rate. As banks consider multiple factors in the granting of credit (credit history of borrowers, guarantees offered, relationship with borrowers in other banking services, etc.) the aforementioned higher cost of financing for banks would not have to be automatically transferred to the brown borrower through an increase in the interest rate.

Assuming that there is an increase in interest rates, does this necessarily mean a reduction in the volume of credit for those brown activities? No. This will depend on the elasticity of credit demand from these firms (i.e. the possibilities of getting alternative financing). High elasticity would mean no reduction in the volume of financing to those companies and, therefore, the regulatory penalty may not have an adverse effect on the production of goods (or services) of those brown companies. Companies with a more rigid demand for credit (generally, small and medium-sized ones) would become more expensive to finance, but the volume of bank credit obtained would not vary significantly (its substitution is not feasible). Moreover, if the demand for brown goods is relatively inelastic, the reduction in the production of that good may not be very significant (despite the increased financial costs of these companies). The result would be the opposite if demand is very elastic (that is, there are close substitutes for these brown products).

Therefore, the requirement for more capital for brown loans does not guarantee the reduction of brown activities. The implementation of these regulatory changes should be carried out with caution, since, regardless of their impact on the productive activities of brown companies, it can also affect the profitability of banks, through the impairment of loans to these companies (many of them with high outstanding bank debt). There is also a level playing field problem: if the penalty for this financing is extended only to banks and not to other financial intermediaries, the problem for banks could become even worse, affecting negatively to the global financial stability. On the other hand, if these exposures are not penalized, we could be exposing banks to more environmental risks, affecting negatively financial stability, especially in the long term.[19]

Very recently, it has been estimated[20] that losses related to the most polluting companies could reach 10% of bank balance sheets in the event of a credit rating downgrade associated with a higher carbon price resulting from compliance with the Paris agreements. Another conclusion of ECB (2021a) is that losses arising from physical risks (associated with the most polluting companies) will show up significantly within 15 years if a disorderly environmental transition scenario prevails. In such scenarios, losses from credit risk could represent between 1.60% and 1.75% of risk-weighted assets over a 30-

[18] See Carrascosa (2021).

[19] European Systemic Risk Board (2020).

[20] ECB (2021a).

year period. These values are much higher than those recorded in the adverse scenarios of conventional stress exercises (with a shorter time horizon).

The second proposal to be discussed is the introduction of a supporting factor for green activities (applying a lower risk weighting to such exposures). The conclusions would be: according to the theory, the willingness of banks to lend would be greater for each interest rate; in reality, this lower cost of financing would not have to be automatically transferred to the green borrower through a reduction in the interest rate, since, as we have mentioned, the bank can consider other variables: credit history of borrowers, guarantees offered, relationship with borrowers in other financial services, etc.; the increase in the volume of credit for these activities will depend on the elasticity of the credit demand of these companies (the greater the elasticity, the greater the increase in credit); and the impact on the production of green goods will depend on the elasticity of demand for these products (the greater the elasticity, the greater the increase in such production).

Again, the increase in green activities is not guaranteed by this measure.[21] As green loans in banks' portfolios are still in the minority, regulatory support for such financing does not appear to be sufficient to achieve the European Union's sustainability targets.

Other measures that are under way can significantly affect bank credit, for example, the establishment of metrics for the homogeneous monitoring of how and to what extent banks' activities can be considered sustainable, from an environmental point of view, according to the European taxonomy. Among these indicators, the ratio of green assets stands out. In a recent pilot study of the EBA,[22] the calibration of this ratio among the banks participating in the study has given a very low result (8%).

The pressure of these measures on the lending activity of banks will be increasing, given the strong reputational impact of unfavourable compliance indicators. In this case, the pressure from customers who are more sensitive to environmental issues could be as or more effective than prudential regulation in penalising brown lending activities and supporting green ones.

As the European authorities are trying to modify banks behaviour on sustainability (reducing emissions from its direct operational footprint and, especially, increasing funding for sustainable initiatives), we could expect some guidance on money rewards to executives. Nowadays, an increasingly higher number of companies have introduced these incentives, mainly as a consequence of pressures from institutional investors. How to equate relatively short tenures of executives (average of 10 years in the S&P 500) with long term climate targets (up to 2050)?[23] Some possibilities: to pay chief executives with shares that they must hold after they leave; to avoid short-term climate targets (related,

[21] Note that a basic objective of macroprudential policy is to limit systemic risk by increasing capital requirements to respond to speculative bubbles in some sectors driven by bank credit. In the case of green assets (not far from that possibility of a bubble), the regulatory response being discussed is just the opposite: reduction of capital requirements for those activities.

[22] EBA (2021).

[23] Hill (2021).

for example, to operational efficiency); targets should be easy to understand, quantify and measure (easing objective assessments); companies should be transparent on the assessment of these targets and incentive schemes; not to set too many targets in the incentive schemes; and so on.

9.3.5. EU EMISSION TRADING SYSTEM[24]

The system was set up in 2005[25] to reduce emissions, to promote investment in innovative, low-carbon technologies and to address the risk of carbon leakage.[26] It is essential to reduce carbon emissions, but to do so through innovation rather than output reduction (the higher price on emissions is an incentive for companies to invest in the reduction of the emissions intensity of their output).[27]

The EU ETS sets up limits emissions from around 10,000 installations in the power sector and manufacturing industry, as well as airlines operating between the countries of the Union and EEA-EFTA states. It covers around 40% of the EU's greenhouse gas emissions.

The ETS works on the "cap and trade" principle. That means a cap is set on the total amount of certain greenhouse gases that can be emitted by the installations covered by the system. This cap is reduced over time, so total emissions fall.[28] Within the cap, installations buy (mainly, in auctions) or receive for free[29] emissions allowances, which can be traded.

Every year, an installation must surrender enough allowances to cover fully its emissions to avoid fines. If an installation reduces its emissions, it can keep the spare allowances to cover its future needs or can sell them to another installation that is short of allowances. If a participant has insufficient allowances, then it must either take measures to reduce its emissions or buy more allowances on the market (they buy if the cost of making reductions is higher than the cost of those allowances).

[24] See European Commission (2015).

[25] The legal framework is the Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union. The last revision of that Directive was approved in 2018 (Directive 2018/410/EU) to meet the new EU emissions reduction target.

[26] That is, companies based in the EU could move carbon-intensive production abroad to take advantage of lax standards, or EU products could be replaced by more carbon-intensive imports.

[27] Calel and Dechezleprêtre (2016). They have compared regulated firms with unregulated ones located in the same country, operating in the same sector and of similar size, and they have found that the EU ETS increased low-carbon innovation (as measured by patent filings at the European Patent Office) by 10% in regulated firms relative to nonregulated firms.

[28] From 2021 to 2030, the cap on emissions decreases annually at a linear reduction factor of 2.2%, a more ambitious reduction path.

[29] This allocation tries to manage the risk of carbon leakage, if these companies pay the full cost of all the pollution allowances they need. From 2013 to 2020, almost 60% of the total amount of allowances were auctioned, while the remaining allowances were available for free allocation. Free allocation is decreasing every year.

The ETS covers the following sectors and gases: 1. Carbon dioxide (CO2) from electricity and heat generation; energy-intensive industry sectors (including oil refineries, steel works, and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals); commercial aviation. 2. Nitrous oxide (N2O) from production of nitric, adipic and glyoxylic acids and glyoxal. 3. Perfluorocarbons (PFCs) from production of aluminium.

Participation in the ETS is mandatory for companies in these sectors, but in some sectors, only installations above a certain size are included; certain small installations can be excluded if governments put in place fiscal or other measures that will cut their emissions by an equivalent amount; in the aviation sector, until 31 December 2023, the ETS will apply only to flights between airports located in the European Economic Area.

The revision of the ETS in 2018 focused on: increasing the pace of annual cap reduction to 2.2% as of 2021; reinforcing the Market Stability Reserve (the mechanism operating since January 2019 to reduce the surplus of emission allowances in the carbon market and to improve the ETS's resilience to future shocks);[30] continuing the free allocation of allowances; and helping industry and the power sector meet the innovation and investment challenges of the low-carbon transition via dedicated funding mechanisms – the Innovation Fund and Modernisation Fund–.

When emissions allowances are auctioned, at least 50% of revenues should go to fund measures to tackle climate change in the EU. Actually, around 78% of revenues, in 2013-2019, were used for climate and energy related purposes.

The features of the market (especially, a progressively lower limit on the total number of allowances available) ensure a positive value of the allowances, but generate an upward trend for the carbon price, especially when some polluting energy sources are used much more intensely to avoid electricity shortages. The strong increase in the demand for allowances cannot be met with a similar movement in the supply. A higher price of carbon is an incentive to reduce emissions, but it explains part of the recent strong increase in electricity prices in Europe.

9.3.6. THE EU CARBON BORDER ADJUSTMENT MECHANISM[31]

The Carbon Border Adjustment Mechanism (CBAM) is a climate measure that should support the EU's ambition on climate mitigation. As climate change is a global problem, we need global solutions.[32] If EU climate ambition faces less stringent environmental policies in non-EU countries, there is a strong risk of carbon leakage, undermining global climate efforts. The CBAM has been designed, according to the European Commission, in compliance with World Trade Organization (WTO) rules, and should

[30] Market imbalances can also be tackled with the approved faster reduction of the annual emissions cap.

[31] See European Commission (2021a).

[32] G20 Finance Ministers agreed, in their meeting of 9-10 July 2021, to enhance international coordination on the use of carbon pricing mechanisms.

equalise the price of carbon between domestic products and imports. As a potential EU own resource, revenues from CBAM will contribute to the EU's budget.

In this system, EU importers will buy carbon certificates corresponding to the carbon price that would have been paid, if the goods had been produced under the EU's carbon pricing rules. If a non-EU producer can prove the payment of a price for the carbon used in the production of the imported goods in a third country, the corresponding cost can be fully deducted for the EU importer.

The CBAM will be phased in gradually (importers will start paying a in 2026) and will initially apply only to a selected number of goods: iron and steel, cement, fertiliser, aluminium and electricity generation. These sectors have a high risk of carbon leakage and high carbon emissions. The administrative feasibility of covering the sectors in the CBAM from the start was also taken into account by the European Commission. By the end of the transition period, the Commission will evaluate whether to extend its scope to more products and services.

For these products, free ETS allowances for EU producers will be reduced by 10% each year from 2025, resulting in their complete phase out by 2035, while the CBAM on imports will be gradually phased in at the same rhythm so it will only apply to the proportion of emissions that do not enjoy free allowances. The phase out of free ETS allowances will substantially increase the price of carbon faced by import-competing carbon-intensive producers in the EU. Consequently, the parallel phasing in of the CBAM is justified to avoid carbon leakage.

What is the relationship between the CBAM and the ETS? According to the Commission, in practice, the CBAM will mirror the ETS because the system is based on the purchase of certificates by importers. The price of the certificates will be calculated depending on the weekly average auction price of EU ETS allowances expressed in € / tonne of CO2 emitted.

One of the key issues of the CBAM is its compatibility with WTO rules. In principle, there are general exception clauses that allow countries be exempted from WTO rules,[33] when "necessary to protect human, animal or plant life or health or relating to the conservation of exhaustible natural resources." In any case, these measures cannot "discriminate between countries where the same conditions prevail," and cannot become a "disguised restriction on international trade."

As the wording on general exceptions can be widely interpreted, it is very relevant to consider the likely reaction of trading partners.[34] To avoid retaliations the measure should respect two principles: non-discrimination between domestic and foreign suppliers, and non-discrimination between foreign suppliers.

On non-discrimination between domestic and foreign suppliers, in the EU CBAM, European and foreign suppliers will pay the same price for their carbon emissions for

[33] Article XX of General Agreement on Tariffs and Trade (GATT).

[34] Sapir (2021) reminds us the introduction of EU CBAM for the aviation sector and the political backlash from many countries (including Brazil, China, India, Japan, Korea, Mexico, Nigeria, Russia and the United States).

products sold in the EU. Indeed, foreign suppliers will be able to deduct any carbon price paid in the country of production. On non-discrimination between foreign suppliers, in the EU CBAM, exemptions "could be granted to countries who have in place a carbon pricing system that imposes a carbon price at least equivalent to the price resulting from the EU ETS on products subject to the CBAM." So far, the exceptions are Iceland, Liechtenstein and Norway, which belong to the EU ETS, and Switzerland, which has an ETS linked to the EU ETS. Except those countries, the EU CBAM will apply to the rest of countries.

Nevertheless, the EU CBAM could be considered discriminatory in some cases: what happens with suppliers from countries that do not implement carbon reduction policies through and ETS? And what happens with countries that have an ETS, which is not linked to the EU ETS? Another concern on the principle of non-discrimination between foreign countries is the lack of consideration of lower-income countries. That means that these countries, in principle, will be subject to the same EU CBAM as more advanced countries, despite the principle of common but differentiated responsibilities enshrined in the Paris Agreement.[35]

9.3.7. CLIMATE STRESS TESTS BY THE EUROPEAN CENTRAL BANK

It is not easy to quantify physical and transition risks, because the impact of climate change takes place over long periods. The ECB published in September 2021 the results of its economy-wide climate stress test. The exercise tested the impact of climate change on more than four million firms worldwide and 1,600 Euro area banks under three different climate policy scenarios.

The main general results were: the advantages of taking action early on outweigh the initial costs over the medium to longer term; in Europe, physical risks are unevenly distributed, with northern regions being more prone to floods and southern regions more exposed to heat stress and wildfires; on transition risks, carbon-intense industries, such as mining or electricity, would incur considerable costs to reduce CO2 emissions; etc. On the other hand, the expected losses of banks on corporate loan portfolios would rise significantly over time, driven by ever increasing physical risk, with the potential of becoming critical over the next 30 years. Portfolios most vulnerable to climate risk are 30% more likely to default in 2050 compared with 2020 under the worst scenario. This test also includes assessments of banks' resilience to climate risks through loans, security and equity holdings.

This exercise is a kind of pilot for the supervisory climate stress test for the banks that the ECB will lead in 2022. In this test, banks will assess their own exposure to these risks and their willingness to take action. The ultimate goal is to incentivise banks to gradually include in their portfolios fewer securities issued by companies with high climate risk. In the first quarter of 2022, the ECB will also perform a climate stress test of the Eurosystem balance sheet.

[35] Sapir (2021).

There are information gaps to know the effective exposure of banks to climate risks. More precisely,[36] on physical risks, data on locations of productive units and of collaterals; on transition risks, emissions of debtor companies and energy rating of houses and other collaterals; mitigant factors and dynamism of taxonomies should be considered; etc. In the EU, EBA is leading the work trying to minimize those gaps.

Bank of Spain has performed a climate stress test focused on transition risks.[37] The exercise reflects the impact of measures to ease the climate transition on the probability of default and the expected losses and absorption of losses (with provisions, with profits before provisions and with excess capital). In the exercise, there are different macroeconomic scenarios considering the increase in the price of CO2 (from 20€ to 100€) and wider scope of the ETS (more sectors and households). The time line of projections is 3 years. The results show that the impact on bank solvency is moderate, but it is more significant in the sectors with higher emissions. The relative exposure of Spanish banks to these sectors is limited, so the final impact on profitability is also moderate. The increase in the price of CO2 has a higher impact than the scope widening of the ETS.

Including long term physical risks in the analysis, the results confirm what the ECB has got in its exercises: probability of default of loan portfolios, comparing a scenario of inaction with one of smooth transition, is lower in the short term than in the long term, being that difference progressively wider. Bank of Spain mentions as a precise example of negative impact on banks the environmental degradation of Mar Menor in Spain. This event has caused a loss of value of houses in the area, the collateral of many bank loans, of around 40%.

Scenario analysis and stress testing can be also used in other sectors to mitigate potential financial stability risks stemming from the climate transition, for example, the investment fund sector. IMF (2021b) considers that although past transition shocks have not been a source of financial instability for that sector, sudden and large shocks in the future could be disruptive, especially if structural vulnerabilities in the sector (such as liquidity mismatches) are not addressed. In addition, to make the sector more resilient to sudden asset price and redemption shocks, reforms to improve the availability of liquidity and redemption management tools are warranted.

9.3.8. A GREEN MONETARY POLICY?

Network for Greening the Financial System (2021) appraised the impact of adapting climate strategy to each monetary policy operation, and found no specifically negative impact. It therefore concluded that each central bank would decide how to incorporate climate change considerations depending on their mandate.

Focusing our attention on Europe, the ECB's main goal is price stability. How might

[36] Estrada (2021).

[37] Estrada (2021) and Ferrer et al. (2021).

environmental risks affect inflation?[38] First, natural disasters (physical risks) can trigger supply shocks, which tend to increase prices and to reduce output. Central banks, in their reaction, have to calibrate the policy response to the size and persistence of the shock: for short-lived episodes of price increase, they may look through such a shock. If it is assessed that the shock is more persistent, with second-round effects on wages and inflation and inflationary expectations out of control, central banks should respond. If the frequency and severity of supply shocks are increasingly higher, it is more difficult for central banks to avoid an answer. Extreme weather events can also cause demand fluctuations. For example, losses deriving from extreme weather events could reduce households' wealth and hence consumption.

Transition risks can also affect prices, through various channels. The transition can be brought forward by policy changes,[39] technological progress and changes in consumer preferences. This price increase will be persistent or a one-off depending on the policy design. If the carbon tax or similar measures become more stringent to meet emission-reduction goals, we could face a period of upward pressure on inflation.

Climate risks may also affect the transmission channel of monetary policy as a consequence of the increase in stranded assets and possible repricing of climate-related financial risks. The value of loans collateral may fall and bank losses may materialise (with the impact on the capital and liquidity positions of banks). If the financial system is weakened, the transmission of monetary policy is impaired.[40]

Another justification of a greening monetary policy is that the ECB must also support the EU's general economic policies (always without jeopardising the main goal) and one of the EU's main policies is to facilitate the energy transition.

The instruments to get a greener monetary policy could be to shift asset purchases towards "green" securities and to apply different haircuts to different kinds of collateral used in refinancing operations (incentivizing the green ones).

Bank of England (2021) has just greened the implementation of its monetary policy. The ultimate target is to achieve net zero emissions associated with the Corporate Bond Purchase Scheme (CBPS) portfolio by 2050, being the intermediate target a 25% reduction in the weighted average carbon intensity of that portfolio by 2025. Eligibility will depend on climate disclosure from 2022 and on the compliance of emissions reduction targets for higher-emitting sectors (energy and utilities). Firms will be allocated to a bucket based on their climate performance and bond purchases by the Central Bank will be tilted towards better climate performers by linking these buckets to the price paid. In the case of issuers with any coal mining activity, they will be ineligible and issuers using thermal coal in their activities will also be ineligible unless they meet stringent criteria (progressive elimination of those activities, reduction of emissions over time

[38] See ECB Work Stream on Climate Change (2021).

[39] Some examples: the introduction of a carbon tax or an emissions trading scheme, new regulations on emission standards for houses, cars or production processes, etc. These measures are taken when immediate carbon-free substitutes do not exist.

[40] ECB Work Stream on Climate Change (2021).

and higher renewable energy provision). Bank of England warns that the requirements will increase over time, reducing purchases, removing eligibility and divesting in the case of weaker performers (according to a specified time line).

ECB Work Stream on Climate Change (2021) reminds us that greener corporate sector purchase programme and targeted longer-term refinancing operations hinges on the availability of a proper definition of "green lending" and, in their view, the EU taxonomy is not sufficiently prescriptive at present and banks do not collect the necessary information systematically.[41] This assessment also applies to a greener collateral policy.

On the purchase of green bonds (or its use as collateral), we could apply the analysis made by Fender et al. (2019) for the reserve management policy of central banks. Considering the standard criteria used by portfolio managers, these authors conclude that on liquidity, although the size and diversity of the green bond market have grown considerably in recent years, the stock of instruments available for investment is still relatively small. On the cost of trading, green bonds are more costly, trading with wider spreads than their conventional counterparts. From a credit risk perspective, ratings compositions of green and conventional bond markets have broadly converged. On return, green bonds compare reasonably well with their conventional peers. Therefore, two criteria support eligibility and two, not. The ECB should assess the apparent trade-off between a technical portfolio management policy and the climate-oriented monetary policy.

Climate change can also pose a direct threat to ECB´s balance sheet, because the most polluters companies (from the following sectors: oil, gas & coal; materials; utilities; chemicals; transportation; automotive; and machinery & equipment) are very important issuers of financial instruments.[42] If the ECB applies the principle of market neutrality, these firms end up being over-represented in the ECB's asset portfolio and the most sustainable firms, under-represented.[43] Therefore, the ECB's market-neutral approach would undermine the policy of the European Union to achieve a low-carbon economy. It is foreseeable not to respect that principle and to increase the purchase of bonds issued by the most sustainable sectors whose positive externalities are not reflected in the market. A similar debate is open with the collateral acceptance policy.[44]

The ECB's environment-related action needs to respect some key principles: proportionality (with regards to the objectives of measures); institutional balance (respect-

[41] "In the absence of a consistent definition of environmental sustainability and of a reliable system of verification, it is unclear how to ensure that the fungible funds provided by banks are correctly and effectively used by individual borrowers to finance green projects. Substantial work would be needed to improve data coverage and quality, including loan classification for debtors not subject to disclosure requirements (small firms and households), and to set up the necessary verification processes and capacities."

[42] Schoenmaker (2021). The classification reflects the average carbon intensity by industry (emissions in tonnes of CO2 divided by sales in millions of euros).

[43] Schnabel, I. (2021).

[44] Oustry et al. (2020) have found, in a study conducted in the Banque de France, that green assets account for an insignificant percentage of the total assets used as collateral.

ing competences of the other European institutions); equal treatment (comparable situations must be treated in the same way); open market economy with free competition; and the prohibition on monetary financing.

Summing up, we cannot forget that the main goal of the ECB is price stability and a restrictive monetary policy could require to sell bonds, even green bonds, regardless the price consequences of those sales. In these circumstances, the sale decision should be taken from a pure financial perspective. Likewise, a very aggressive green strategy would obviously help redistribute and re-allocate resources to certain activities and sectors, but it might resurrect jurisdictional conflicts like those last year when the German Constitutional Court ruled on the purchases of public-sector assets by the ECB. The German Constitutional Court established that any monetary measure that enters the scope of economic policy would interfere with Member States' own competencies. Although it is easy to question this line of argument, the jurisdictional conflict could be back.[45]

9.3.9. EXPECTATIONS OF THE SINGLE SUPERVISORY MECHANISM ON CLIMATE RISKS

According to SSM (2020), physical and transition risks impact economic activities (through, for example, lower corporate profitability or the devaluation of assets) and subsequently the financial system. These risks can also affect the sustainability of the institution's business model in the medium and long term, especially when it is reliant on sectors and markets that are vulnerable to environmental risks.

SSM (2020) set up a first general framework for banks to deal with environmental risks. The framework consists of a series of expectations that will be a key element in the dialogue between the supervisor and banks on this issue. More concretely, banks are expected to identify and quantify material risks (in the short, medium and long term) from climate change to their products and services; to include environmental risks in their risk appetite statement, ensuring that their remuneration policy and practices stimulate a behaviour aligned with their environmental risk approach; to assign responsibilities (with the appropriate human and financial resources) for these risks within their institution; to adopt a strategic approach to manage environmental risks, adapting policies, procedures, risk limits and risk controls accordingly; to include environmental risks in their credit-granting processes, pricing frameworks and collateral valuations; and to disclose relevant information on their assessment of the materiality of environmental risks.

[45] We can see a similar approach in Brunnermeier and Landau (2020): "in democratic societies, decisions on allocating resources and redistributing incomes are taken by elected bodies. Obviously, policies relating to climate change belong to that category. Independent central banks are non-elected "agents" of the society; they have a well-specified mandate to stabilise the economy. It can be argued that central banks would be going beyond their mandate if they were to tweak their instruments of monetary policy to allocate resources and direct credit."

Their management bodies are expected to allocate roles and responsibilities to its members for environmental risks; and to exercise effective oversight over the institutions' exposures and policies to environmental risks.

The SSM asked banks to conduct a self-assessment on how their practices met the SSM expectations and to draw up an action plan to get the full compliance.

Step by step, environmental risk management is being fully integrated into the global framework of risk management in banking, but significant progress is needed because these risks must be modelled and specific data are needed.

9.4. THE CHALLENGES OF THE GREEN TRANSITION

Everybody agrees with the final environmental targets, but it is essential to manage the transition to that new reality. This transition can create distortions in the whole economy, including the labour market: several new jobs will be created, but not necessarily in the same places where jobs will be lost. Skills are not automatically transferable, and new skills are needed. These negative impacts should be managed carefully.[46]

The speed of transition is a key driver of those economic negative impacts. A higher speed could mean shortage of energy and minerals, affecting consumers and firms. If the higher speed succeeds, many brown investments could become obsolete, resulting in a large volume of stranded assets.

Krishnan et al. (2021) mention some related challenges during the transition: "under a 1.5°C pathway, the number of solar panels installed globally per week would be approximately eight times higher than they are today. The rate of wind-turbine installations would need to be increased by fivefold. Consider Europe, where we estimate that the installation rate of public charging stations for electric vehicles would have to increase by a factor of 20 by 2030 to meet the emissions-reduction target for passenger cars. That suggests that capabilities, incentives, and support measures would be needed at an unprecedented pace and scale. Land is crucial to building out renewables' capacity. Compared with fossil fuels, renewables require more area per unit of energy output. Even counting the land associated with the entire fossil-power value chain—for example, extraction, transportation, and storage of fossil fuels—total land use would still increase by a factor of five to ten."

During the transition, we can have episodes of uncertainty, energy shortages or soaring mineral prices. In 2021 we have seen a clear example of these obstacles to the energy transition. The strong economic recovery after the pandemic lockdowns, geopolitical tensions and widespread shortages in the global value chain have provoked sig-

[46] These distortions also happen with climate shocks. Albert, Bustos and Ponticelli (2021) analyse the impact of extreme weather events in Brazil on labour and capital reallocation across regions, sectors, and firms. "Long periods of excess dryness lead to the reallocation of capital and labour away from affected regions. Excess dryness over the last two decades has also changed the structure of the economy and not only in directly affected areas, but also in regions that were integrated with them via labour and capital markets."

nificant tensions in the gas market and the consequence have been a strong increase in gas and electricity prices. The transmission of that increase to producer and consumer price indexes has been even larger than before the pandemic. It seems clear that facing challenges in economic growth, energy supply and sustainability targets, the latter is the weak link. People do not perceive and assess long-term risks for the whole planet, so their election is clear between achieving net-zero emissions in 2050 and profiting growth opportunities today.

The demand for some minerals (lithium and cobalt) is linked to the production of batteries[47] and the demand for others (copper, nickel and manganese) is associated with their use across a range of low-carbon technologies. The consumption of lithium and cobalt could increase by a factor of more than six. That increase factor could be two for copper and four for nickel.[48] IMF (2021) shows that supply is quite inelastic over the short term but more elastic over the long term.[49] A very relevant factor is a clear and globally coordinated climate policy, favouring investments to expand metal supply and minimize price increases, and avoiding trade barriers and export restrictions. According to IMF, "high policy uncertainty may increase the chances that high metal prices will derail or delay the energy transition."

According to EIA (2021), there is a looming risk of more turbulence ahead for energy markets: "the world is not investing enough to meet its future energy needs, and uncertainties over policies and demand trajectories create a strong risk of a volatile period ahead for energy markets. The deficit is visible across all sectors and regions. EIA analysis has repeatedly highlighted that a surge in spending to boost deployment of clean energy technologies and infrastructure provides the way out of this impasse, but this needs to happen quickly or global energy markets will face a turbulent and volatile period ahead. Clear signals and direction from policy makers are essential."

Geopolitical considerations remain critically important for energy security, as oil and gas supplies have become more concentrated in a small group of countries and those sources are still key for that energy security during the transition to a renewables-intensive energy system.

Some of the initiatives that we have revised (e.g. the EU ETS and CBAM) have the overarching goal to reduce emissions, as the higher price of carbon is an incentive for

[47] Valckx et al.: "a typical electric vehicle battery pack, for example, needs around 8 kilograms (18 pounds) of lithium, 35 kilograms of nickel, 20 kilograms of manganese and 14 kilograms of cobalt."

[48] According to IEA (2021), price rallies for key minerals in 2021 could increase the costs of solar modules, wind turbines, electric vehicle batteries and power lines by 5-15%. If maintained over the period to 2030, this would add USD 700 billion to the investment required for these technologies. Critical minerals, together with hydrogen-rich fuels such as ammonia, also become major elements in international energy-related trade; their combined share rises from 13% today to over 80% by 2050.

[49] Differences in production methods affects elasticities: "copper, nickel, and cobalt are extracted in mines, which often require capital-intensive investment and take as long as 19 years to construct. In contrast, lithium is often extracted from mineral springs and brine as salty water is pumped from the earth. As such, lead times to open new production facilities—up to seven years—are shorter." Some factors, such as innovation in extraction technology could influence supply elasticities.

companies to invest in innovative, low-carbon technologies. This is the best way to reduce carbon emissions, through innovation rather than output reduction.[50] According to The Economist (2021), there are technologies to fight against the climate change: solar geoengineering (solar radiation management), heat pumps, hydrogen-powered planes, direct air capture of carbon, vertical farming and container ships with sails. It seems that some of these technologies are controversial because they could undermine efforts to curb greenhouse-gas emissions. For example, on solar geoengineering, "efforts to test the idea face fierce opposition from politicians and activists." These attitudes represent a clear obstacle to innovative technologies and to a smoother green transition.

From a financial perspective, to fund the transition is challenging, but feasible. Nevertheless, some companies and sectors (for example, key metals for the green transition) can have serious problems to get money from progressively greener banks and markets. This is related to the mentioned lack of a brown taxonomy. If we do not solve that problem, financial institutions could be discouraged to fund large emitters (with commitments to reduce emissions) in favour of smaller emitters. Although some sector could have technical obstacles to get zero emissions, it is essential to try the greening of brown assets and companies.

We can finish mentioning that the energy transition will have winners and losers. If we do not tackle this issue, with adequate policies and trying to minimize the negative impact of the transition on people, the public support could evaporate and the transition process could derail, harming everybody in the long term.

9.5. CONCLUSIONS

A key feature of sustainability is its global nature (all sectors of the global economy will be affected; global markets are needed for sustainable finance products; and major financial institutions operate on a cross-border basis). Without ambitious commitments from all the polluting countries, especially the largest ones, emission reduction objectives can be unreachable. Sustainability policies would benefit from a global approach led by the FSB, for example, on disclosures, that institution proposes international standards and corporate disclosures on corporate climate related financial risks with international consistency (IFRS will play a key role in the development of these standards).

Proper regulatory oversight needs to be in place to prevent "greenwashing" to ensure that labels fairly represent the reality of policies, objectives and products/services of a company or institution. We have seen that progress, at global level, is on-going: it is needed the mentioned harmonized climate-related disclosure standards; high-quality and comparable data on climate-related metrics; and global climate taxonomies. The European Union is going faster.

[50] Abanades (2021) sees a clear relationship between a higher price of CO2 and the feasibility of technologies to capture and store CO2, the best solution for very relevant polluting sectors without short-term alternatives to reduce emissions.

Another feature of the environmental debate is the interaction between threats in the long term and actions in the short and medium term. According to FSB (2020), the effects of climate-related risks on the financial system are subject to a wide uncertainty. The effects are spread over long term, and actions (and lack of actions) today may affect the severity of risks in the long run. In principle, if we wait to take measures some years, the consequences of climate change, in the long term, could be much more negative.

The rationale of green finance is clear: investors´ preference for sustainability increases the demand for green assets and, subsequently, more funds go to the climate transition. More availability of funds means a reduction of the cost of capital of these green firms and that encourages transition-aligned investments.

Financial regulators think that physical and transition risks may lead to systemic risk and jeopardise financial stability if the impact on banks and other financial institutions is highly significant. So far, the essential tool to tackle the exposure of banks to climate-related risks is financial disclosures around governance, strategy, risk management, and metrics and targets. This disclosure policy aims at improving investors' ability to appropriately assess and price climate-related risk.

There has been a significant progress in the implementation of policies to manage climate-related risks, but many challenges remain: banks have to improve the availability and quality of data to track and measure progress; have to strengthen impact analysis of their activities, products, and services across their portfolios; and have to link all targets to the outcomes of impact analyses.

The European Union is leading many initiatives on green finance. Its Action Plan aims at developing an EU taxonomy; an EU Green Bond Standard; methodologies for EU climate benchmarks; and guidance to improve corporate disclosure of climate-related information. A key element of the Action Plan is the disclosure of information about sustainability by firms and institutions. In general, the objective is to ensure that the disclosed information (precontractual and periodic reports) is trustworthy and comparable.

An essential regulatory action is the approval of the EU taxonomy on 22 June 2020 and includes a detailed definition of environmental objectives. The taxonomy helps investors in their investment decisions, minimizes the greenwashing risk and supports firms in the process of decarbonization.

The EU Green Bond Standard is still a proposal. It is intended to be voluntary and is based on the detailed definitions of green economic activities in the EU taxonomy. With the standard, European green bonds will be checked by external reviewers to ensure that the bonds are compliant with the taxonomy and the risk of greenwashing could be minimized.

On banks´ prudential regulation, for the time being, the regulators have taken a prudent path, asking banks to explain their risks and policies so that the market can decide. Progressively, banks will assess themselves and the supervisor will decide whether to apply surcharges to pillar 2. We have seen in the paper that the requirement for

more capital for brown loans does not guarantee the reduction of brown activities and the increase in green activities is not guaranteed by the relief of capital. The implementation of these regulatory changes should be carried out with caution, since, regardless of their impact on the productive activities of brown and green companies, it can also affect the profitability of banks and the financial stability.

On the EU ETS, the features of the market ensure a positive value of the allowances, but generate an upward trend for the carbon price, especially when some polluting energy sources are used much more intensely to avoid electricity shortages. The strong increase in the demand for allowances cannot be met with a similar movement in the supply. A higher price of carbon is an incentive to reduce emissions, but it explains part of the recent strong increase in electricity prices in Europe.

The innovative EU CBAM has been designed to equalise the price of carbon between domestic products and imports. The rationale of this measure is that if EU climate ambition faces less stringent environmental policies in non-EU countries, there is a strong risk of carbon leakage, undermining global climate efforts. Although the CBAM, according to the European Commission, complies with WTO rules, there are some doubts: countries that do not implement carbon reduction policies through and ETS; countries that have an ETS, which is not linked to the EU ETS; and the lack of consideration of lower-income countries.

Finally, everybody agrees with the final environmental targets, but it is essential to manage the transition to that new reality. This transition can create distortions in the whole economy that should be managed carefully.

REFERENCES

Abanades, C. (2021): "El papel clave de las tecnologías de captura y almacenamiento de CO2 para alcanzar la neutralidad de carbono," interview in Cuadernos de Sostenibilidad nº 1, OpenMind BBVA.

Acemoglu, D., Aghion, P., Bursztyn, L. and Hemous, D. (2012), "The Environment and Directed Technical Change," American Economic Review, Vol. 102, No 1, pp. 131-166.

Albert, C., P. Bustos and J. Ponticelli (2021): "How climate change reallocates capital and labour within countries: new evidence from Brazil," VoxEU, 26 November.

Alonso, A. and C.I. González (2021): "Los productos financieros sostenibles desde el punto de vista de los supervisores y los reguladores: sector bancario," in the book by several authors "La sostenibilidad y el nuevo marco institucional y regulatorio de las finanzas sostenibles," edited by J.M López Jiménez and A. Zamarriego, Thomson Reuters Aranzadi, March.

Aramonte, S. and A. Zabai (2021): "Sustainable finance: trends, valuations and exposures," BIS Quarterly Review, 20 September.

Australian Government (2021): "Australia´s long-term emissions reduction plan: modelling and analysis."

Bank for International Settlements -BIS- (2021): "Climate-related financial risks. Measurement methodologies," April.

Bank of England (2021): "Greening our Corporate Bond Purchase Scheme," November.

Brunnermeier, M.K., and J-P Landau (2020): "Central banks and climate change," Vox-EU, 15 January.

Calel, R. and A. Dechezleprêtre (2016): "Environmental Policy and Directed Technical Change: Evidence from the European Carbon Market," The Review of Economics and Statistics, 98, pp. 173-191.

Carrascosa, A. (2021): "Should "brown" bank loans be penalized or "green" loans supported?," Do Better, ESADE, 19 July.

Carrascosa, A. and J.L. Simarro (2021): "Los bonos verdes en un escenario de crisis: sostenibilidad versus estabilidad financiera," in the book by several authors "La sostenibilidad y el nuevo marco institucional y regulatorio de las finanzas sostenibles," edited by J.M López Jiménez and A. Zamarriego, Thomson Reuters Aranzadi, March.

De Guindos, L. (2021): "Shining a light on climate risks: the ECB's economy-wide climate stress test," the ECB blog, 18 March.

Ehlers,T., D. Gao and F. Packer (2021): "A taxonomy of sustainable finance taxonomies," BIS Papers No 118, October.

Elderson, F. (2021): "Greening monetary policy," the ECB blog, 13 February.

Estrada. A. (2021): "Pruebas de resistencia para los riesgos derivados del cambio climático," Evento EY sobre Finanzas Sostenibles, 17 de noviembre.

European Banking Authority -EBA- (2021): "Mapping climate risk: Main findings from the EU-wide pilot exercise," 21 May.

European Banking Authority -EBA- (2020): "Discussion paper on management and supervision of ESG risks for credit institutions and investment firms," October.

European Central Bank -ECB- (2021b): "Opinion of the ECB on a proposal for a regulation on European green bonds," 5 November.

European Central Bank -ECB- (2021a): "Climate-related risk and financial stability," July.

ECB Work Stream on Climate Change (2021): "Climate change and monetary policy in the euro area," Occasional Paper Series nº 271, September.

European Commission (2021a): "Carbon border adjustment mechanism," July, https://ec.europa.eu/taxation_customs/green-taxation-0/carbon-border-adjustment-mechanism_en

European Commission (2021b): "EU taxonomy for sustainable activities," https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#:~:text=The%20Taxonomy%20Regulation%20was%20published%20in%20the%20Official,meet%20in%20order%20to%20qualify%20as%20environmentally%20sustainable

European Commission (2020): "European green bond standard," https://ec.europa.

eu/info/business-economy-euro/banking-and-finance/sustainable-finance/european-green-bond-standard_en

European Commission (2018): "Renewed sustainable finance strategy and implementation of the action plan on financing sustainable growth," 8 March (last update 5 August 2020). https://ec.europa.eu/info/publications/sustainable-finance-renewed-strategy_en

European Commission (2015): "EU Emissions Trade System Handbook," information updates can be seen in https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en#ecl-inpage-683

European Systemic Risk Board (2020): "Positively green: measuring climate change risks to financial stability," June.

EU Technical Expert Group on Sustainable Finance (2020): "Taxonomy. Final report," March.

Fabian, N. (2021): "How the EU taxonomy can be the tool for dynamic climate transition," Euroactiv, 27 January.

Fender, I., M. McMorrow, V. Sahakyan and O. Zulaica (2019): "Green bonds: the reserve management perspective," BIS Quarterly Review, September.

Ferrer, A., J. García Villasur, N. Lavín, I. Pablos Nuevo & C. Pérez Montes (2021): "Un primer análisis de los riesgos de transición energética con el marco de pruebas de resistencia FLESB del Banco de España," Revista de Estabilidad Financiera, Banco de España, nº 41, otoño.

Financial Stability Board -FSB- (2021): "Roadmap for Addressing Climate-Related Financial Risks," 7 July.

Hill, A., (2021): "Can executive bonuses help to reduce emissions?," Financial Times, 15 November.

Institute of International Finance -IIF- and European Banking Federation -EBF- (2020): Global Climate Finance Survey, January.

International Energy Agency -IEA- (2021): "World Energy Outlook 2021."

International Monetary Fund -IMF- (2021a): "Critical Metals for Green Technologies," World Economic Outlook, October.

International Monetary Fund -IMF- (2021b): "Investment funds, fostering the transition to a green economy," Global Financial Stability Report, October.

International Platform on Sustainable Finance -IPSF- (2021): "Common Ground Taxonomy. Climate Change Mitigation," Taxonomy Working Group co-chaired by the EU and China, November.

Krishnan, M., T. Nauclér, D. Pacthod, D. Pinner, H. Samandari, S. Smit, and H. Tai (2021): "Solving the net-zero equation: Nine requirements for a more orderly transition," McKinsey Sustainability, 27 October.

Network for Greening the Financial System -NGFS- (2021): "Adapting central bank operations to a hotter world: Reviewing some options," March.

Nordhaus, W. (2021): "Green National Accounting," Project Syndicate, 3 September.

Oustry, A., B. Erkan, R. Svartzman & P.F. Weber (2020): "Climate-related Risks and Central Banks' Collateral Policy: a Methodological Experiment," Banque de France, working paper, December 2020.

Portilla, A., S. Gibbs and K. Rismanchi (2020): "Sustainable Finance Policy & Regulation: The Case for Greater International Alignment," Institute of International Finance, March.

Sapir, A. (2021): "The European Union's carbon border mechanism and the WTO," Bruegel Blog, 19 July.

Single Supervisory Mechanism -SSM- (2020): "Guide on climate-related and environmental risks. Supervisory expectations relating to risk management and disclosure," November.

Schnabel, I. (2021): "From green neglect to green dominance?," speech during the "Greening Monetary Policy – Central Banking and Climate Change" online seminar, organised as part of the "Cleveland Fed Conversations on Central Banking," 3 March.

Schoenmaker, D. (2019): "Greening monetary policy," VoxEU, 17 April.

Task Force on Climate-related Financial Disclosures -TCFD- (2017): "Recommendations of the Task Force on Climate-related Financial Disclosures. Final Report,"

The Economist (2021): "What next? 22 emerging technologies to watch in 2022," 23 November.

UNEP Finance Initiative (2021a): "Responsible Banking: Building Foundations. The first collective progress report of the UN Principles for Responsible Banking signatories."

UNEP Finance Initiative (2021b): "Net-Zero Banking Alliance," https://www.unepfi.org/net-zero-banking/

UNEP Finance Initiative (2019): "Principles for responsible banking. Shaping our future."

Valckx, N., M. Stuermer, D. Seneviratne and A. Prasad (2021): "Metals Demand From Energy Transition May Top Current Global Supply," IMF blog, 8 December.

Viñes, H. and Blasco, J.L. (2021): "La hoja de ruta europea sobre las finanzas sostenibles," in the book by several authors "El rol de las finanzas en una economía sostenible," edited by J.L. Blasco and J.C. Delrieu, Papeles de la Fundación de Estudios Financieros nº 60.

10. THE INTERNATIONAL ROLE OF THE EURO: A FINANCIAL MARKETS PERSPECTIVE

Mª Isabel Cambón[1]
Comisión Nacional del Mercado de Valores

10.1. ABSTRACT

The euro has become the second most important currency in the international monetary system, although the pattern has been irregular, and it is still far from having the relevance of the US dollar. During the first few years after its inception its relevance increased significantly: different aspects such as its use as a foreign currency reserve, trade invoicing and payment and debt and equity issues in financial markets supported this idea. The euro was perceived as a "safe" store value for international investors, a success that was the result of the relevance of the European economic area, the presence of a stable and credible regulatory and institutional framework – including the central bank – and the existence of a solid financial system. However, the global financial crisis and, especially, the European sovereign debt crisis impacted the euro severely and considerable frailties became evident. This article focuses on weaknesses related to the European financial markets; those that make them less deep and liquid than other reference markets and that are currently preventing a bigger role of the euro. The most important ones refer to existing barriers to cross-border capital flows, to excessive requirements for companies to participate in financial markets, and to elements that impede companies' growth in size. The need for a safe asset is also key to foster the international role of the euro. In this sense, the bond issuances of the NGEU programme contribute positively to the increase in the quantity of euro-denominated safe assets. The euro has room to improve its international consideration, but some issues should be addressed.

Keywords: euro, safe asset, international role, capital markets, CMU, market-based finance.

[1] María Isabel Cambón is Deputy Director of Macroeconomy and Financial Stability issues at the Comisión Nacional del Mercado de Valores (Spanish National Securities Market Commission, CNMV). micambon@cnmv.es

10.2. INTRODUCTION

The international monetary and financial system may be slowly moving towards a "multi-polar" structure. This includes a diversification of international reserve currencies and reduced reliance on the dollar. The increase in the international use of the euro, which is the second most used currency but far from behind the US dollar, has multiple benefits for all stakeholders in the economic and financial sphere. One of the most obvious benefits lies in the lower cost and lower risk of trading internationally for European companies. They can conduct their international transactions in their own national currency, which means trading with a stable means of invoicing, payment, and financial risk hedging. A related benefit is the possibility to achieve lower costs of funding for European households, private sector companies and public administrations. It can also moderate exchange rate oscillations and reduce speculative capital flows. But, apart from the advantages for the EU, there is another clear benefit for the international financial system and the economy as a whole: the improvement of its resilience, making it less vulnerable to shocks. A more diversified mix of global currencies allows investors and borrowers to diversify their assets and liabilities, enables risk sharing and hedges volatilities stemming from capital flow fluctuations. The taper tantrum episode of 2013 illustrates how excessive reliance on the US dollar causes certain drawbacks.

There are several features that an international reserve currency should hold: (i) a large economic area, (ii) solid and stable institutions, (iii) deep and liquid financial markets (including the existence of a safe asset), (iv) solid banking system and, finally, according to some literature, (v) the backing of a strong central bank. In the case of the euro, there is no doubt about the relevance of its economic area.[2] In fact, it is usually argued that the international role of the euro should be much greater given the size of European economic activity. There is also an adequate regulatory framework and European institutions are based on compliance with the rule of law. The banking system is solid, although there are still some steps to be taken before completing the Banking Union (for example, it is still missing a common deposit insurance scheme). ECB monetary policy is stable and has shown during the last two crises its commitment to preserving financial stability in the euro area and to the euro project. One of the main issues that prevents the euro from assuming a more significant role as an international reserve currency, although there are others, is related to the still fragmented and less liquid financial markets.

The euro increased its international relevance significantly during the first years after its inception. Different aspects such as its use as a foreign currency reserve, trade invoicing and payment and debt and equity issues in financial markets supported this idea. The euro was perceived as a "safe" store value for international investors. Some participants in the markets even thought that the euro could rival the US dollar, the "champion" currency after WW II. However, the global financial crisis of 2008 and the

2 In 2020 EU GDP accounted for 73% of US GDP (62% in the case of euro area).

European sovereign debt crisis of 2010-12 broke this trend. Considerable European weaknesses were perceived by investors that fell back on the dollar as their preferred currency. From 2016 onwards, the euro started to gain momentum again. Whereas the last crises impacted the euro severely, the current coronavirus crisis seems to be different. The euro has maintained its international relevance because immediate action by the ECB, European bodies and national governments to support their economies were positively received. One particular to success was the creation of the Next Generation EU (NGEU) scheme and the subsequent bond issuance.

This article describes the current situation of the euro in the international markets (section 10.3), the main characteristics of European financial markets, including those weaknesses that may be impeding greater relevance of the euro (section 10.4), and, finally, several initiatives that could be addressed to foster the role of the euro in the international arena are presented (section 10.5). Section 10.6 concludes.

10.3. WHERE IS THE EURO IN THE INTERNATIONAL MARKETS?

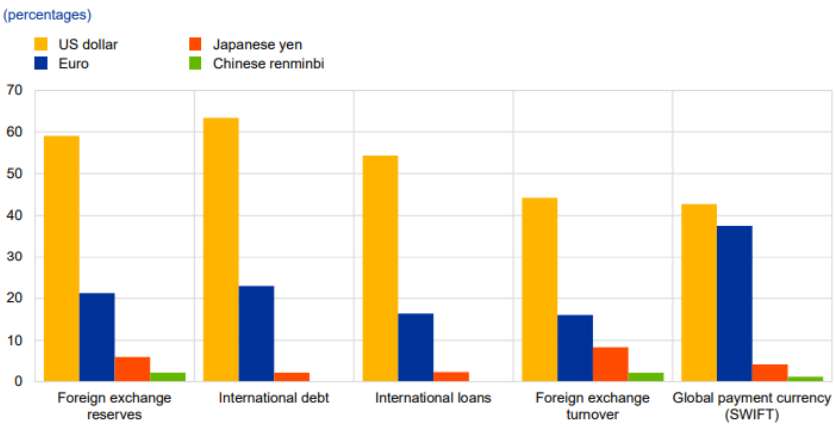
As mentioned above, the euro's international role remained broadly stable in 2020, and was not negatively affected by the COVID-19 crisis. The euro remained the second most important currency in the international monetary system (followed by the Japanese yen and the Chinese renminbi), even though the share of the euro across several indicators of international currency use was low, close to 20%. The euro has not recovered the situation existing before the Global Financial Crisis (GFC). In relation to its role as a safe store of value, around a fifth of all foreign-exchange reserves owned by central banks was denominated in euros. There is a similar proportion of cross-border loans and bonds. The share for the dollar is about 60% (see Figure 1). The euro has become a widely accepted currency for international payments: in fact, its relevance in terms of payments for transactions is much closer to that of the dollar (nearly 40%). This reflects the fact that the European Union is the biggest trader of goods and services (in spite of the fact that most commodities are traded in dollars). Moreover, around 60 countries in the world are using, are going to use or are going to link their currency to the euro.

Some recent indicators reveal the attractiveness of the euro: (i) the predominance of green bond issuance in euros (around 50% of total issuance) and (ii) the significant increase of euro-denominated bond issues by non-nationals (i.e., international issuance), to about one-third.

In terms of availability of safe assets, those denominated in euros are well behind those denominated in US dollars, its scarcity being an obstacle for the euro to become a safe haven currency. Stock of US securities with a top credit rating as a percentage of GDP is 3.5 times higher than those of European countries (110% in the US versus nearly 30% in the EU in 2019). The volume of all euro area sovereign debt combined is still smaller than that of the US Treasury market. This means that a large part of euro area assets may lose value amid increased global risk aversion, and such sentiment generates

capital outflows seeking to preserve value. However, a significant step has been taken with bond issuances under the SURE (Support to mitigate Unemployment Risks in an Emergency) and NGEU programmes, which will help increase the global supply of safe assets (the EU has the maximum creditor status consideration). These issuances could boost the process to establish a common European safe asset, although the volumes are relatively small on a global scale (and temporary). In total, the European Commission is expected to issue up to EUR 100 billion in SURE bonds between 2020 and 2021 and up to EUR 750 billion in NGEU bonds over the period 2021-26, which could expand the pool of highly rated bonds to about 40% of GDP.

Figure 1: International Monetary System.



Source: ECB. Data as of end-2020 except for foreign exchange turnover (data as of Apr-19).

10.4. A CAPITAL MARKETS PERSPECTIVE

10.4.1. ARE EUROPEAN CAPITAL MARKETS DEEP AND LIQUID?

The euro exhibits many features that are necessary to play a bigger international role: large economic area, well-developed financial markets, solid institutional framework –including the central bank – and low exchange rate volatility. However, the indicators related to financial markets are well behind those of other advanced economies. There are significant differences between European and US bond and equity markets in terms of size but also regarding volumes and liquidity conditions. This partially reflects the fact that in European countries bank-based finance is still more relevant than market-based finance (see section 10.4.2).

Table 1 compares the size of the main international equity markets by using capitalisation and trading to nominal GDP. It is plain to see that the size of equity markets

in the US, UK, Japan and China is much larger than those of European countries. Europe's stock market capitalisation is about 65% of GDP on average, Euronext being the most prominent (116% of GDP), while the US market capitalisation is more than double its GDP. The gap is even bigger in terms of trading: European stock market volumes range between 40% and 60% of GDP, whereas in the US they are 2.5 times the GDP. In Europe, low volumes on regulated markets can be partially related to MiFID and MiFIR regulations that encourage new competitors by allowing new trading venues to operate.

These regulatory changes, which enhance competition as they allow securities to be traded in different venues outside their home-regulated markets, have led to what some people call fragmentation of the European markets, which means that part of the securities trading have shifted to alternative venues. The market share of competing markets has stabilised in many countries in proportions between 40% and 50% of total trading. However, considering that those competing venues are mostly located in the EU, from a European single market point of view, these trends may represent a fragmentation of trading at the domestic level, but not at the European level. Consequently, those regulations are promoting the perception of a single European landscape.

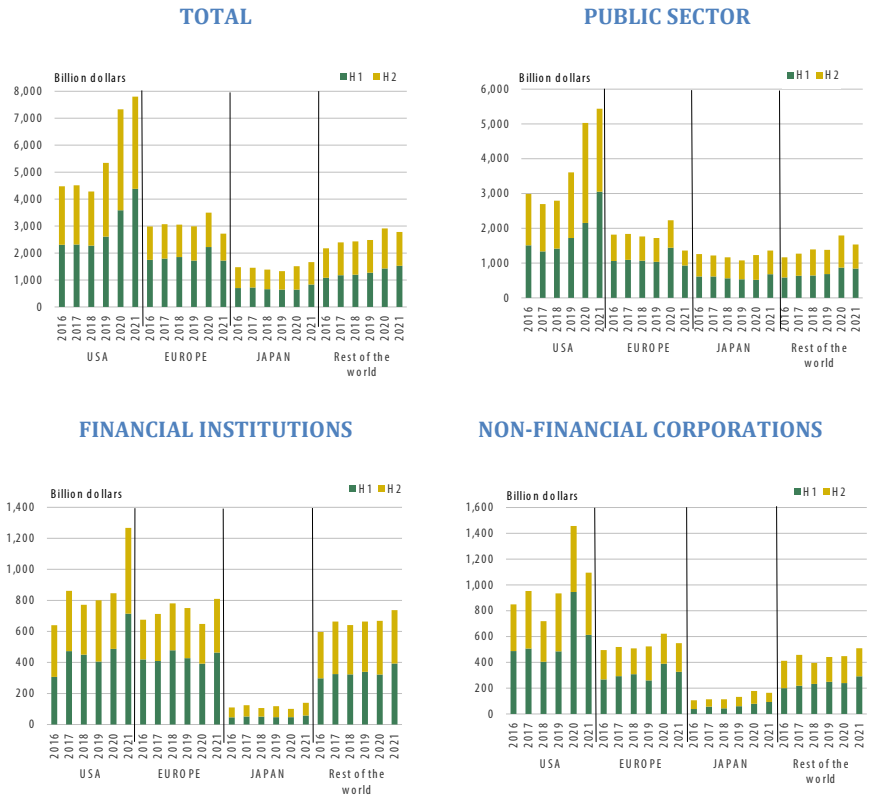
Table 1: Market capitalisation and trading on regulated markets. *(% GDP).*

	Market capitalisation[1]		Trading volume	
	2019	**2020**	**2019**	**2020**
United States[2]	169.6	216.4	141.5	244.1
Canada	136.8	158.6	80.3	119.9
China[3]	91.1	121.5	144.3	230.1
Japan	122.4	132.6	100.5	125.1
London Stock Exchange[4]	114.5	109.8	53.6	59.1
Euronext[5]	98.8	115.8	39.8	57.0
Germany	51.9	59.8	38.5	57.9
Italy[4]	39.8	36.7	33.8	36.6
Spain	53.6	51.7	37.7	38.1

Source: World Federation of Exchanges; London Stock Exchange Group; Eurostat; statistical offices of the United States, Canada, China and Japan and the CNMV. (1) In local currency, the market capitalisation figures correspond to the last working session of the year. (2) The numerator is the combined total of the NYSE, Euronext US and Nasdaq. (3) Includes data from the Hong Kong, Shanghai and Shenzhen stock markets, as well as the GDP of the People's Republic of China and Hong Kong. (4) Although Borsa Italiana was integrated into the LSE Group, here the ratios of capitalisation and trading to GDP corresponding to each country are provided separately. (5) The denominator is the sum of the nominal GDP of France, the Netherlands, Belgium, Portugal and Ireland.

There are also significant differences in debt markets. The outstanding amount of public debt accounted for 98% of GDP in 2020 in the euro area, while the US Treasury market accounted for 134% of GDP. Given the sovereign credit risk heterogeneity across the euro area, the quantity of safe assets[3] is lower (above 30% considering supranational issuance). Corporate debt markets represent less than 15% of GDP in the euro area and nearly 35% of GDP in the US. Figure 2 depicts international bond market issuance by regions in recent years. Differences between the US and Europe are significant in sovereign and non-financial companies' debt issuance. Sovereign debt issuances range between USD 3 trillion and USD 5 trillion in the US, whereas in Europe they are much more stable (slightly below USD 2 trillion, except in 2020 due to the COVID-19 crisis). Non-financial companies' issues range between USD 900 billion and USD 1.4 trillion, more than double those of European companies. Much more similar are financial institutions' debt issuances, which stood at between USD 600 billion and USD 800 billion every year in both areas.

Figure 2: Gross debt issuance.

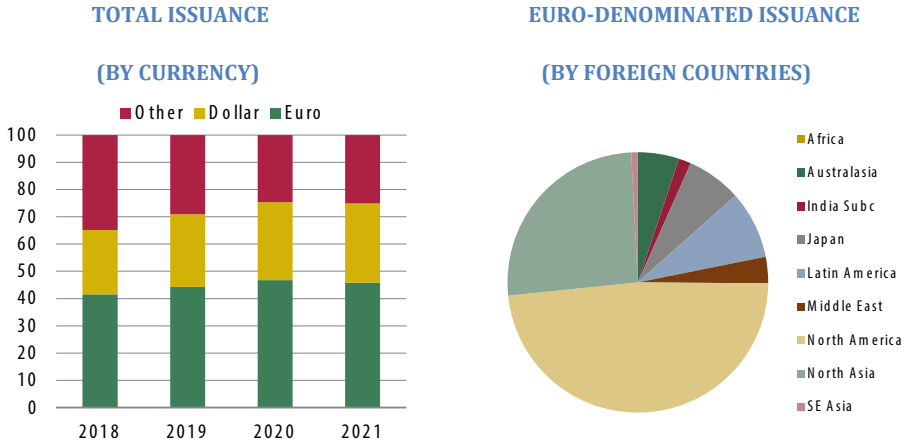


Source: Dealogic and own calculations Six-month data. H221 data are shown in equivalence terms.

[3] This includes debt issued by member states rated AA+ or higher.

The case of green finance is different: recent data suggest the leading role of the euro as a global hub in this matter. Global issuance of green bonds exceeded EUR 233 billion in 2020 and EUR 360 billion in 2021,[4] significantly higher than the volumes recorded in 2013, 2014 and 2015. More than 45% of total issuance in 2021 comprised euro-denominated assets (Figure 3), mostly from euro area issuers (88%). Euro-denominated international issuance of green bonds (led by North America and North Asia) is also significant and represents nearly 30% of all international green bond issuances. The promotion of the euro in this context is also being supported by European institutions such as the European Commission, which has committed to issuing in the form of green bonds 30% of the total amount of bonds issued under NGEU.

Figure 3: Green bond issuance.



Source: Dealogic.

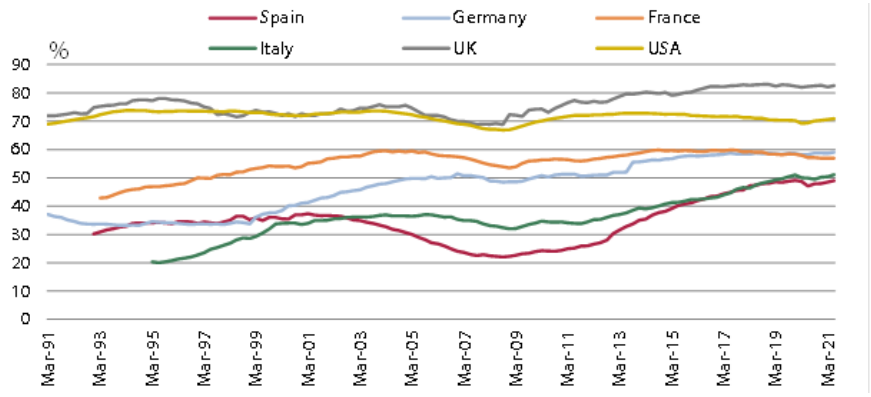
10.4.2. MARKET-BASED FINANCE VERSUS BANKING FINANCE

The European economy has historically been characterised by the high level of use of banking services in providing financing to the private sector. This predominance of banks to the detriment of other sources of financing is a characteristic shared by most European economies – although there is some heterogeneity among them – which contrasts with the pattern observed in the United States and the United Kingdom, where capital markets are a much more significant source of funding. It can be seen that in these two economies, financing through markets is fairly stable over time at between 70% and 80% of total financing, including bank loans (Figure 4). In the euro area, in contrast, this proportion is much lower, particularly in some peripheral economies.

[4] Data up to 20 October.

The relative importance of financial markets was low in the years prior to the international financial crisis (in 2008). In those years, the annual financing needs of non-financial companies were mainly covered by bank lending in many European countries due to several factors. On the one hand, the growth of domestic activity was based on the greater buoyancy of activities traditionally linked to lending (real estate and construction). On the other hand, the fall in interest rates for many jurisdictions associated with their joining the euro area led to a historic increase in the supply of credit. All these elements led to the relative importance of capital markets falling to proportions between 55% in France and 20% in Spain (including capital markets and bank lending finance). Since the onset of the crisis, the resetting of some imbalances generated over several years led to a period of contraction in bank lending which was compatible with the increase in other financing mechanisms. In recent years there has been a much more balanced composition within the financial system, where the banking sector has lost relative weight, while other segments, such as capital markets, collective investment schemes, insurance and pension funds, have gained relevance.

Figure 4: Relative weight of market financing compared with bank lending.

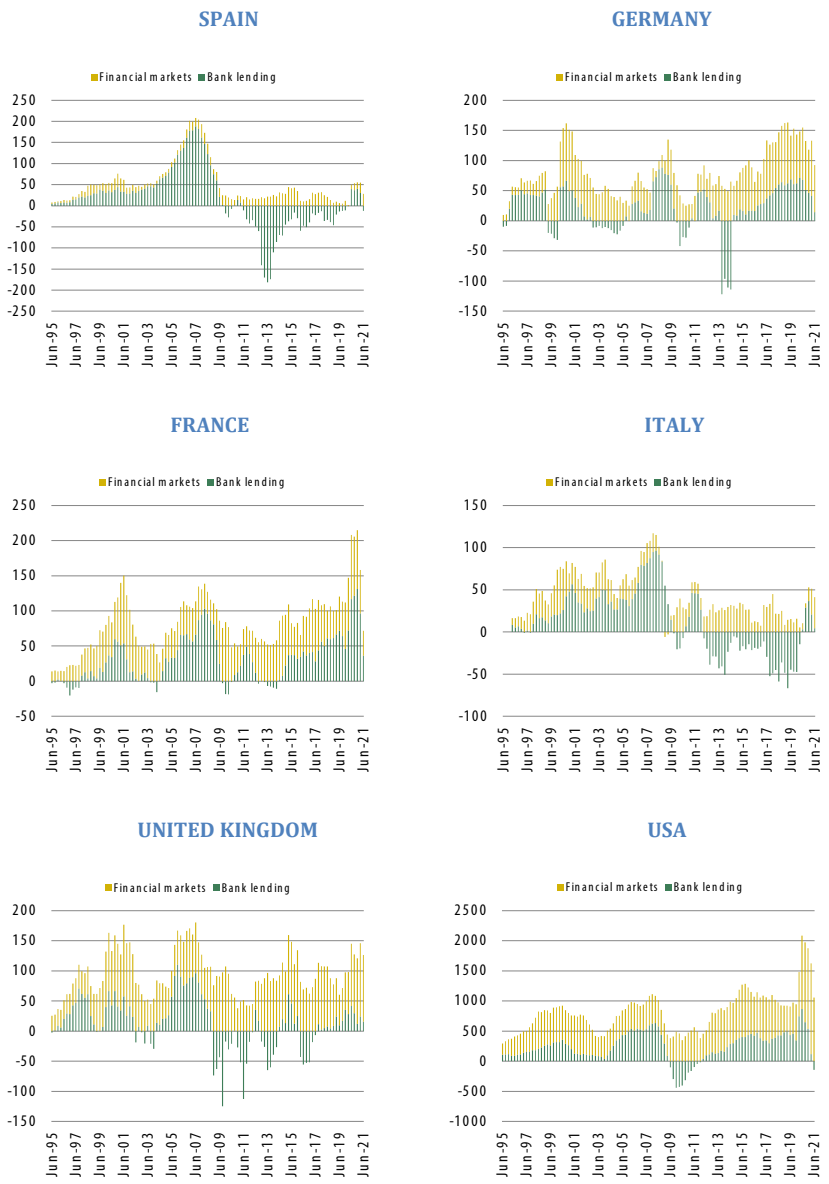


Source: own calculations.

Non-bank financing is an alternative and a supplement to banking, beneficial both for companies accessing it and for the economy as a whole. Participating in capital markets gives companies more access to financing, which increases their transparency, indicating that they have achieved a certain degree of professional management of their business, and may lead to associated improvements in terms of prestige and reputation. It is reasonable to assume that an economy with more balanced financing structure between the banking sector and capital markets can achieve higher long-term growth rates, as well as less abrupt fluctuations in its economic cycle. The stabilising nature of financing provided by financial markets to companies at a time when

other alternative sources are significantly reduced or decreased has been observed in recent years, especially in the worst moments of the banking credit crunch between 2012 and 2014.

Figure 5: Net changes in market financing and bank lending of non-financial companies.



Source: own calculations. Data in billions of euros except in USA (billions of dollars).

During those years, when several peer economies suffered contractions in lending of varying intensity, the agents that provided financing through capital markets maintained their capacity to finance even at the worst times, thus demonstrating their stabilising and anti-cyclical role as one of their major strengths. As shown in the panels of Figure 5, this was the case in Spain and Italy, which suffered a considerable fall in outstanding credit volumes, but also in other advanced economies which are less dependent on lending and with more stable lending trends. In all cases, financing obtained by non-financial companies through capital markets – whether by issuing shares or issuing debt – played a very important buffer role in financing flows, particularly in the years in which there was a shortage of other alternatives.

Despite the important role played by the financial markets in the provision of funds to entities, the fact is that this type of financing remains a feasible option particularly for large companies, due to the costs associated with equity and bond issues. In advanced societies, the business sector is usually characterised by a large number of small companies that make a significant contribution to the added value of the economy and account for a considerable share of employment. For example, in the European Union, SMEs account for 99.8% of the total number of companies, generate 53% of production and account for 65% of employment.

In this context, an increase in the size of European companies would favour the conditions of their access to capital markets. However, this process is not straightforward for two fundamental reasons. The first lies in the existence of certain regulatory thresholds which make size increases costly for companies. These thresholds may be related, for example, to the number of employees and turnover. Exceeding them entails explicit costs, which discourage business growth. The second reason lies in the business model of several European economies where the predominance of activities relating to services also explains the smaller size of the companies as the bulk of these are provided by companies which, due to the nature of their business, are smaller. In this sense, all policies aimed at achieving a real single market at the European level can pave the way for European companies to grow.

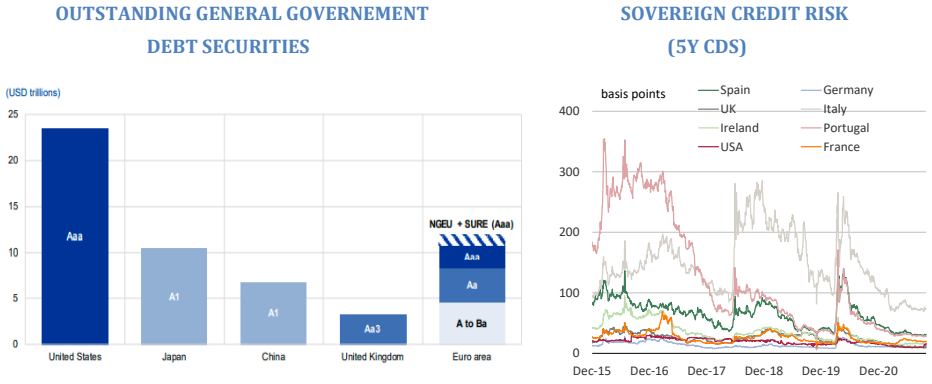
10.4.3. THE SAFE ASSET

The lack of safe assets in the European landscape was mentioned as one of the main elements dampening the international role of the euro. An ample supply of safe assets can act as a stabiliser of the euro area sovereign debt price fluctuations during times of stress, and it is also needed to increase the global safe asset supply that has been broadly stable during recent years (in a context of higher demand of safe assets by investors, including central banks).

In spite of this scarcity, international investors welcomed the first bond issuance on 15 June 2021, as part of the Next Generation EU (NGEU) scheme to boost European economies. These bonds and also bond issuance under the SURE programme were perceived as good rivals of American Treasury bonds as a safe asset of choice. In fact, with an

expected volume issuance of up to EUR 100 billion in SURE bonds between 2020 and 2021 and up to EUR 750 billion in NGEU bonds over the period 2021-26, the EU is going to become one of the largest issuers in the euro area and expand the supply of euro-denominated safe assets to 40% of GDP. These issuances are positive to establish a common European safe asset, although volumes are relatively small on a global scale (Figure 6).

Figure 6: Public debt markets size and sovereign credit risk.



Source: ECB and Refinitiv Datastream.

These bond issuances are going to favour the international role of the euro not only because they increase significantly the supply of low-risk euro denominated assets but also considering the purpose of these programmes. Proceedings from NGEU issuances will finance investment and structural reforms in EU countries that are expected to increase the potential growth of EU economies and diminish divergences in the euro area. Member states need to allocate at least 37% of funds to support the green transition and at least 20% to support digital transformation. Consequently, this programme may increase the resilience of the euro area to global shocks, enhancing the attractiveness of the euro for international investors.

The attention shown by investors, including non-euro area investors, to the first issuances of SURE bonds confirms the potential for these EU bond issuances to enhance the international role of the euro: the share of non-euro area investors of these issuances ranged between 31% (20-year tenor) and 60% (5-year tenor). The preference for short end maturities is partially related to the high participation of central banks and official investors that usually show lower tolerance for risk.

10.5. WHAT CAN BE DONE TO FOSTER THE INTERNATIONAL ROLE OF THE EURO

A relevant number of initiatives can be addressed to foster the international role of the euro. This section describes, from the point of view of financial markets, the

elements considered and proposed by European institutions, emphasising the most relevant ones. I will also mention other issues that deserve consideration. At the end of this section other potential elements not strictly related to financial markets, but which are no less important, are listed.

In December 2018, the **European Commission** (EC) published a communication (Towards a stronger international role of the euro)[5] in which key actions to foster the international role of the single currency were laid out. This included the work of strengthening the efficiency and robustness of the EU's financial system by completing the Banking Union and the Capital Markets Union and therefore by contributing to deepening the Economic and Monetary Union. The Communication presented additional measures in the area of finance relating to the clearing obligation of derivative contracts, to reliable interest rate benchmarks, to an integrated instant payment system in the EU, and to the possibility of an enhanced role of the euro in foreign exchange markets. The Commission's Communication of December 2018 was accompanied by a Recommendation on the international role of the euro in energy and was followed by five sectoral consultations on the role of the euro in foreign exchange markets, in the energy sector, in raw materials markets, in the trade of agriculture and food commodities and in the transport sector.

In January 2021 the EC presented a new strategy to stimulate the openness, strength and resilience of the EU's economic and financial system for the years to come. This strategy considers the shifts in geopolitics over recent decades and, more recently, the coronavirus crisis, which highlighted the need to strengthen the EU's economic and financial system. One of the three pillars of this strategy is aimed at promoting a stronger international role of the euro by means of: promoting its use by third countries, supporting the development of euro-denominated instruments and benchmarks and fostering its status as an international reference currency in the energy and commodities sectors. In this respect, the EC considers that the issuance of high-quality euro-denominated bonds under Next Generation EU will add significant depth and liquidity to the EU's capital markets over the coming years and will make them, and the euro, more attractive for investors.

In addition, the EC states that promoting sustainable finance is also an opportunity to develop EU financial markets into a global "green finance" hub, bolstering the euro as the default currency for sustainable financial products. In this context, the Commission will work to promote the use of green bonds as tools for the financing of energy investments necessary to reach the 2030 energy and climate targets. The Commission will issue 30% of the total bonds under Next Generation EU in the form of green bonds. As mentioned before, current numbers reveal the leading role of the euro as a global hub for green finance. The commitment of European bodies as well as that of national authorities to promote sustainable finance is very important to maintain the predominance of the euro as the currency of choice for sustainable financial products and, consequently, its international role. The current strength should not be disregarded.

[5] https://ec.europa.eu/info/sites/default/files/communication_-_towards_a_stronger_international_role_of_the_euro.pdf

One of the key elements to promote the international role of the euro is related to the **Capital Markets Union (CMU)** project, which received a fresh boost in September 2020 when the EC committed to 16 new actions. The new Action Plan came after the 17 Recommendations published by an expert group in June 2020 (A New Vision for Europe's capital markets, Final Report of the High-Level Forum on the Capital Markets Union.)[6]

With the new Action Plan,[7] the Commission commits to 16 new actions to achieve three key objectives: (i) support a green, digital, inclusive and resilient economic recovery by making financing more accessible to European companies, (ii) make the EU a safer place for individuals to save and invest long-term and (iii) integrate national capital markets into a genuine single market. All the actions go in the right direction to foster the international role of the euro, especially those aimed at facilitating market-based finance for companies, especially for SMEs and at integrating national capital markets into a genuine single market. The proposed actions across objectives are the following:

(I) Accessible finance for European companies, especially for SMEs:

- Establish an EU-wide platform (European Single Access Point) that provides investors with seamless access to financial and sustainability-related company information
- Simplify the listing rules for public markets in order to help small and innovative companies have easier access to funding
- Channel more long-term financing to companies and infrastructure projects, in particular those contributing to the objective of smart, sustainable and inclusive growth
- Encourage insurers and banks to invest in equity and other long-term assets
- Assess the merits of a requirement to direct companies to alternative finance providers when rejecting their credit application
- Support the provision of credit to European companies and in particular SMEs, through an improved securitisation market

(II) EU a safe place for individuals to invest:

- Improve financial literacy by developing a European financial competence framework and incentives for Member States to promote financial education and responsible investing
- Build trust of retail investors by reducing informational overload and increase the quality of financial advice
- Help Member States improve pension adequacy in Member States

[6] https://ec.europa.eu/info/files/200610-cmu-high-level-forum-final-report_en

[7] https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/capital-markets-union-2020-action-plan_en

(III) Integration of national capital markets into a genuine single market:

- Lower costs for cross-border investment by simplifying withholding tax procedures
- Foster more similar insolvency rules across Member States
- Enable cross-border shareholders to better exercise their rights
- Enhance the cross-border provision of settlement services in the EU
- Establish a consolidated source of data on trading conditions across all EU trading venues to foster competition
- Strengthen the protection of investments and further facilitate cross-border investments
- Enhance the single rulebook for capital markets and foster progress towards supervisory convergence.

Of those proposed actions, all of them positive for the international role of the euro, there are two that are absolutely key in the process. The first is related to the need to diminish the costs and/or impediments for cross-border capital flows. These are not only related to the fiscal framework but also with other important elements, including differences in national rules and divergent supervisory approaches. These elements explain, for example, the problems to achieve a fully effective EU passport in the asset management sector during the last years. Regarding divergent national supervisory approaches mention should be made of the increasing role of the European Securities and Market Authority (ESMA) to improve the convergence of regulatory standards and supervision through CSA (Common Supervisory Action) exercises. Through these exercises ESMA works with national competent authorities on one particular issue (for example, the supervision of costs and fees of UCITS across the EU) in order to assess the compliance of supervised entities with specific regulations. The work is usually done on the basis of a common methodology developed by ESMA and results are productive.

The second one is the need to simplify and lower costs for companies to participate in the markets, and in this connection the need to increase companies' size. Despite the important role played by financial markets in the provision of funds to entities, the fact is that market-based finance remains a feasible option, particularly for large companies, due to the costs associated with equity and bond issues. The EU is still dominated by relatively small companies, in comparison with US companies, which normally obtain financing in a manner different from that of large companies; in particular, bank financing is the main source for those entities. The only way to achieve larger European companies is through: (i) the real achievement of a unique and single European market, which serves as the reference market for these companies (from the national perspective to the European perspective) and (ii) the removal of barriers that make it costly for companies to grow. The most obvious ones are related to certain regulatory thresholds (usually regarding the number of employees or turnover) which, if exceeded by companies, entail explicit costs (essentially for tax reasons). These thresholds clearly discourage business growth.

In the field of financial markets, apart from the usual suggestions to simplify and reduce the costs to participate in the markets, it is equally important to achieve greater homogeneity of requirements and, as mentioned before, of supervisory approaches. The alternative markets established in different European jurisdictions over the last few years are good examples of successful mechanisms, suitable for companies' finance and attractive for investors. These markets, either for shares or fixed income, share the same kind of philosophy: they are devised to facilitate simple and efficient access by medium and small companies by means of a simplification of the requirements for participation. These markets are usually multilateral trading facilities (MTFs) but can be managed by regulated markets. In addition to finance, companies that access these markets receive other benefits, such as an improvement in their reputation, an increase in their visibility, the positive evaluation of the company and the liquidity of the securities issued. The most important challenge posed by this type of market from the point of view of securities supervisors is to achieve a satisfactory balance between the reduction in requirements for companies to access the market and an adequate level of investor protection.

In addition, other alternatives to raise finance other than traditional capital markets should be enhanced in this process: these alternatives are led by venture capital companies and crowdfunding platforms. The venture capital sector allows financial investment in companies that are not normally listed. The most common investment is in the form of capital and the target companies are usually at an early stage, and there are also leveraged buyouts. Venture capital companies may find the opportunity to make their investment liquid and obtain their return in capital markets. However, the possibility of some institutional investors, such as pension funds, investing in this sector is limited by regulation. This sector is less developed in Europe than in the United States, but significant progress has been made in recent years.

In the case of crowdfunding, the EU market is underdeveloped compared with other major world economies because the lack of common rules and diverging licencing requirements across the European Union impedes the activity of crowdfunding platforms seeking to offer cross-border services. As a result, platforms have been small and operating in a local market, businesses have had fewer financing opportunities available, and investors have had less choice. However, on 10 November 2020, the Regulation on European Crowdfunding Service Providers (ECSP) for business came into effect. After a transition period of 12 months, the rules entered into force on 10 November 2021. The regulation lays down uniform rules across the EU for the provision of investment-based and lending-based crowdfunding services related to business financing. It allows platforms to apply for an EU passport under a single set of rules, which makes it easier for them to offer their services across the EU with a single authorisation. The new rules are expected to increase the availability of this form of finance and investors will benefit from clear rules on information disclosure, rules on governance and risk management of platforms and strong and harmonised supervisory powers for national authorities.

There is one particular topic related to financial markets which requires significant progress in order to boost the international role of the euro: the lack of euro-denomi-

nated safe assets. As mentioned in previous sections, the new EU bond issuances under NGEU represent a positive step, given the expected increase in the amount of highly rated assets. However, these volumes are not very high considering the international landscape and are also temporary. For these reasons, EU bonds have not been included in many sovereign segments of broad bond indices and are not a benchmark in the portfolio of global risk-averse investors. In addition to supply side restrictions, the dearth of safe assets can also be explained by the strong increase in demand, in which sizeable asset purchase programmes adopted by the ECB have been very relevant. EU bonds exhibit some of the characteristics needed to be considered a safe asset (high credit quality) but not others such as the size of the debt market and the existence of a previous track record in hedging global risk. There are currently interesting proposals that envisage the issuance of European safe assets by EU public entities. It could be the ESM (through sovereign debt purchases from the ESCB) or even the ECB, the institutions in charge of issuing large common debt instruments to expand and stabilise the supply of euro safe assets.

The potential introduction of the digital euro could boost the international role of the currency if its use in cross-border payments were possible. The Eurosystem has not yet decided to go ahead with the digital euro project. Although its introduction is not perceived as a fundamental change for the international role of the euro – that depends to a large extent on already mentioned structural elements such as stable economic fundamentals, and size, deep and liquid financial markets – a digital euro could help strengthen the global appeal of the euro. Fostering the international role of the euro should not be the reason for issuing a digital euro but it would help. From a global perspective, it would be positive to establish a common framework on cross-border use of central bank digital currencies.

All the issues proposed in this section, related to financial markets in one way or another, must be considered in the current European context where other pending issues should be addressed to foster the international role of the euro. One of them is the necessity to develop a more explicit and permanent risk-sharing mechanism that would reinforce confidence in the euro and help mitigate asymmetric shocks. In the absence of such mechanisms, any idiosyncratic shock will impact very differently across member States given their differences in economic fundamentals. In addition, completing banking union will also increase the attractiveness of the euro in the international arena. Implementing these projects would strengthen market trust in the ability to secure financial stability, which is also a precondition for any international reserve currency.

Finally, there are elements playing a big role that may be impeding a major relevance of the euro: these elements cannot be quantified but they exist, and they have a qualitative nature. They are related to the difficulties to change historical inertias and also the perception of the euro (if emerging economies have been issuing dollar-denominated bonds for a long period of time it will be complicated for them the change to euro-denominated bonds in a short period of time). Europe must show that, although political union is not going to be achieved in the foreseeable future, major characteristics for the euro to be considered an international reserve currency are being addressed: the

economic and financial union is strong, although it could be improved; the institutional and regulatory framework is credible, and stable and structural reforms, such as the CMU and banking union, are well oriented. The euro needs time to demonstrate that it behaves as a "safe asset" in moments of crisis and that it is perfectly usable for any kind of international financial transaction: in other words, to increase the confidence and the attractiveness of the currency. In this regard, the recent measures adopted and plans implemented at the European level during the COVID-19 crisis have done much to change the "perception of the euro."

10.6. CONCLUDING REMARKS

There is broad support for the advisability of achieving a "multi-polar" structure in the international monetary and financial system. This would include a diversification of international reserve currencies and diminished reliance on the dollar. This structure would have clear benefits for the international financial system, making it less vulnerable to shocks, and also for the economic area issuing the emerging currencies, mainly though lower costs and risks. The euro has become the second most important currency in the international financial system, although its relevance has stabilised over the last years. It plays a prominent role in international trade invoicing and has less relevance as a foreign reserve currency and in international-denominated issuances.

The euro holds, a priori, all characteristics deemed necessary to become an international reserve currency: a large economic area, solid and stable institutions (including the central bank), deep and liquid financial markets and, finally, a solid banking system. Those characteristics inspired confidence in investors in the currency and suggested that the euro could rival the US dollar. However, this has not been the case: the global financial crisis of 2008 and the European sovereign debt crisis of 2010-12 ended with the upward trend of the euro (its relevance is nearly 20%) given the frailties that were identified in these periods at the European level.

What sort of action can be taken to promote the international role of the euro from the point of view of financial markets? There are a number of issues clearly identified by European bodies, most of them included in the CMU project. Among all proposed actions, there are two that are absolutely key to the process. The first one is related to the need to diminish the costs of and/or impediments to cross-border capital flows. These are not only related to the fiscal framework but also with other important elements, including differences in national rules and divergent supervisory approaches. The second one is the need to simplify and lower costs for companies to participate in the markets, and accordingly, the need to increase companies' size. Only clear advances in these areas will allow European financial markets to grow, increase their liquidity and reduce their fragmentation. Enhancing unconventional ways of financing, for example, though alternative markets, crowdfunding platforms and venture capital are also positive in the process which, in the end, may help balance the sources of financing and make the system less reliant on banking credit.

In the context of Brexit, European capital markets need even more to increase their attractiveness for international investors. Euro internationalisation requires further efforts, including the European governance and policy framework. In particular, a well-coordinated economic, fiscal and monetary policy mix can enhance confidence in the euro area. In this regard, the way in which national and European bodies have proceeded during the COVID-19 are perceived positively by international investors, bolstering investors' trust. They have demonstrated the ability of European countries to deal with impediments to growth, minimising threats from the pandemic crisis and helping to mitigate the risk of social and political conflict that may jeopardise euro area cohesion. One particular success is related to the new EU debt issues under different programmes that are going to increase "euro safe assets" supply, although it will remain far from the US dollar levels. The EU has to be firm and decisive to develop and exploiting its strengths in order to foster the international role of euro. Its leading role in ESG fixed-income markets is only one example of this but other initiatives could be further explored.

REFERENCES

"A new vision for Europe's capital markets. Final Report of the High-Level Forum on the Capital Markets Union (2020)."

Deutsche Borse Group. "The international role of the euro."

European Central Bank (2021). "The international role of the euro."

European Commission (2018). "Commission Recommendation on the international roles of the euro in the field of energy."

European Commission (2018). "Towards a stronger international role of the euro."

European Commission (2021). "Capital Markets Union, Action Plan Factsheet."

Hudecz, G., E. Moshammer, A. Raabe Y G. Cheng (2021). "Strengthening the international role of the euro." SUERF Policy Briefs No 88.

Hudecz, G., E. Moshammer, A. Raabe Y G. Cheng (2021). "The euro in the world." European Stability Mechanism (ESM), Discussion Paper Series/16.

Micossi, S (2020). "An international role for the euro." School of European Political Economy. Policy Brief 37/2020.

The Economist (2021). "The international role of the euro, Europe's currency aspirations are getting a boost."

Thomsen P.M. (2019). "International role of the euro." International Monetary Fund.

GLOSSARY

ABS	Asset-Backed Securities
AIReF	Spain's independent Fiscal Authority
ALMPs	Active Labor Market Policies
AMC	Asset Management Companies
AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
APP	Asset Purchase Programme
AT	Additional Tier
ATM	Automated Teller Machine
BCBS	Basel Committee on Banking Supervision
BdE	Banco de España
BIS	Bank of International Settlements
BLS	Bank Lending Survey
BRRD	Bank Recovery and Resolution Directive
CA	Comprehensive Assessment
CAP	Common Agriculture Policy
CB	Central Bank
CBAM	Carbon Border Adjustment Mechanism
CBBP3	Third Covered Bonds Purchase Program
CBDC	Central Bank Digital Currencies
CDP	Carbon Disclosure Project
CECL	Current Expected Credit Loss
CESEE	Central, Eastern and Southeastern Europe
CFC	Central Fiscal Capacity

CFSP	Common Foreign and Security Policy
CMBS	Commercial mortgage-backed securities
CMU	Capital Markets Union
CNMV	Coision Nacional del Mercado de Valores, Spanish Securities and Exchange Commission
COM	Communication from the Commission
CPFF	Commercial Paper Funding Facility
CRD	Capital Requirement Directive
CRR	Capital Requirement Regulation
CSDP	Common Security and Defense Policy
CSPP	Corporate Sector Purchase Program
DFR	Deposit Facility Rate
DGSD	Deposit Guarantee Scheme Directive
DLT	Distributed Ledger Technology
EA	Euro Area
EBA	European Banking Authority
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECB	European Central Bank
ECFR	European Council of Foreign Relations
ECL	Expected Credit Loss
EDC	European Defense Comunity
EDF	European Defence Fund
EDIS	European Deposit Insurance Scheme
EDP	Excesive Deficit Procedure
EEA	European Economic Area
EFB	The European Fiscal Board
EFTA	European Free Trade Association
EIB	European Investment Bank
EMU	European Monetary Union
EP	European Parlament
ERDF	European Regional Development Fund
ERTEs	Spanish Temporary Support Work Schemes

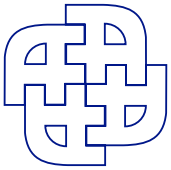
ESBR	European Systemic Risk Board
ESCB	European System of Central Banks
ESFS	European System of Financial Supervision
ESM	European Stability Mechanism
ESMA	European Securities and Markets Authority
ETS	Emissions Trading System
EU	European Union
EUBS	European Unemployement Benefit Schemes
EUC	EU Council
EUTEGSF	EU Technical Expert Group on Sustainable Finance
FAQs	Frequently asked questions
FDI	Foreign Direct Investment
FDIC	Federal Deposit Insurance Corporation
FOLTF	Failing or likely to fail
FOMC's	Federal Open Market Committee
FSB	Financial Stability Board
FSI	Financial Stability Institute
GACS	Italian Securitization Scheme for non-performing loans
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GFANZ	Glasgow Finance Alliance for Net-Zero
GFC	Great Financial Crisis
GHG	Greenhouse-gas
GNI	Gross National Income
G-SIBs	Globally Systemically Important Banks
HICP	Harmonized Index of Consumer Prices
HQLA	High-quality liquid assets
HRVP	High Representative and Vice-President of the Commission for Foreign and Security Policy
ICO	Instituto de Crédito Oficial
ICT	Information and Communications Technology
IEA	International Energy Agency
IFIs	Independent Fiscal Institutions

IFRS9	International Financial Reporting Standards
ILO	International Labour Organization
IMF	International Monetary Fund
KYC	Know Your Customer
LCR	The Liquidity Coverage Ratio
LSE	London School of Economics
LTROs	Longer-term Refinancing Operations (LTROs)
MDA	Maximum Distributable Amount
MFF	Multiannual Financial Framework
MIP	Macroeconomic Imbalances Procedure
MMT	Modern Monetary Theory
MREL	Minimum requerimente for own funds and elegible liabilities
MRO	Main Refinancing Operations
MS	Member State of the European Union
MTBF	Medium Term Budgetary Framework
MTFs	Multilateral Trading Facilities
MTO	Medium-Term Budget Objetive
N2O	Nitrous Oxide
NCWO	No creditor worse off
NFCs	Non-Financial Corporations
NGEU	Next Generation European Union
NGFS	The Network of Central Banks and Supervisors for Greening the Financial System
NIR	Negative Interest Rates
NNRPs	National Recovery and Resilience Plans
NPEs	Non-performing exposures
NPLs	Non-performing loans
NRP	National Reform Program
NSP/NCP	National Stability /Convergence Programs
NZBA	Net-Zero Banking Alliance
PBOC	People's Bank of China
PD	Probaibility of default
PELTROs	Pandemic Emergency Longer-term Refinancing Operations

PEPP	Pandemic Emergency Purchase Program
PFCs	Perfluorcarbons
PMI	Purchase Managers Index
PRA	Prudential Regulation Authority
PRTR	Spanish Recovery, Transformation and Resilience Plan
QE	Quantitative easing
R&D	Research and Development
REACT-EU	Recovey Assistance for cohesion and the territories of Europe
RRF	Recovery and Resilience Facility
RRP	Recovery and Resilience Plans
RTSE	Regulatory treatment of sovereing exposures
RWAs	Risk-weighted assets
SARS	Severe acute respiratory syndrome
SBBS	Sovereing bond-backed securities
SGP	Stability and Growth Pact
SIB	Systemic risk buffer
SME	Small and Medium-sized Enterprise
SRB	Singel Resolution Board
SRF	Single Resolution Fund
SRM	Single Resolution Mechanism
SSM	Single Supervisory Mechanism
SURE	Support to mitigate Unemployment Risks in an Emergency
TCFD	Task Force on Climate-related Financial Disclosures
TEU	Treaty on European Union
TFEU	Treat of Functioning of the European Union
TLTRO	Targeted Longer-term Refinancing Operations
TTC	US-EU Trade and Technology Council
UNCTAD	United Nations Conference on Trade and Development
UTP	Unlikely To Pay
VAT	Value Added Tax
WEU	Western European Union
WTO	World Trade Organization

TRUSTEES
of Fundación de Estudios Financieros

BANCO SANTANDER, S.A.
BANCO SABADELL
BANKIA
CLIFFORD CHANCE
FIDELITY WORLDWIDE INVESTMENT
INDITEX
KPMG
LA CAIXA
BOLSAS Y MERCADOS ESPAÑOLES
URIA & MENENDEZ
ACS
EY
FUNDACIÓN MUTUA MADRILEÑA
MIRABAUD
DELOITTE
J&A GARRIGUES, S.L.
CECA



IEAF | FEF

INSTITUTO ESPAÑOL DE ANALISTAS FINANCIEROS

FUNDACIÓN DE ESTUDIOS FINANCIEROS

fundación ICO

www.fef.es

P.V.P. 36 €

www.fundacionico.es