

STUDY

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Monetary Dialogue, November 2020



Monetary-Fiscal Nexus After the Crisis

Compilation of papers



Policy Department for Economic, Scientific and Quality of Life Policies
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Monetary-Fiscal Nexus After the Crisis

Compilation of papers

This document was requested by the European Parliament's committee on Economic and Monetary Affairs.

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Blurred Boundaries between Monetary and Fiscal Policy

Salomon FIEDLER, Klaus-Jürgen GERN, Ulrich
STOLZENBURG



Abstract

The paper argues that the monetary policy response to the COVID-19 crisis has been appropriate in terms of the ECB's primary objective. The concern over fiscal dominance is, however, valid as in a situation of rising inflationary pressure the ECB would have to choose between maintaining price stability on the one hand and public debt sustainability, financial stability and cohesion of the EMU on the other hand. Reform of the euro area institutional framework could mitigate this risk, either in the direction of a fiscal union or in the direction of full fiscal self-responsibility.

This document was provided by the Policy Department for Economic, Scientific and Quality of Life Policies at the request of the Committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 19 November 2020.

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LIST OF ABBREVIATIONS

APP	Asset purchase programme
ECB	European Central Bank
EIB	European Investment Bank
EMU	Economic and Monetary Union
EP	European Parliament
ESM	European Stability Mechanism
EU	European Union
GDP	Gross domestic product
HICP	Harmonised Index of Consumer Prices
NGEU	Next Generation EU
OMT	Outright monetary transactions
PEPP	Pandemic emergency purchase programme
PSPP	Public sector purchase programme
SURE	Support mitigating Unemployment Risks in Emergency

EXECUTIVE SUMMARY

- **In the current crisis, there is strong complementarity between monetary and fiscal policy.** High borrowing needs of governments are accommodated by low interest rates and asset purchases of the European Central Bank (ECB), ensuring favourable financing conditions.
- **While expansive monetary policies are appropriate given downward pressure on inflation at already subdued levels, there are indications that these policies ultimately amount to monetary financing.** First, bond purchases of the central bank are sufficiently large to fully cover government net lending. Second, when a sovereign debt crisis was looming in March, the ECB was quick to ensure capital market access for all Member States by announcing the pandemic emergency purchase programme (PEPP). Third, the central bank has become governments' single biggest creditor, which creates strong interdependencies: by holding that much public debt, the central bank plays a major role in the financing of governments; ECB involvement in bond markets strongly affects financing conditions of governments; the central bank inevitably takes substantial creditor risks; and interest payments on bonds held by the central bank eventually flow back to government budgets.
- **The COVID-19 crisis brought back fears of a possible breakup of the currency union, but this risk was mitigated by a combination of monetary and fiscal policy measures.** The swift reaction of the ECB announcing PEPP prevented yield spreads from widening further. Later, the introduction of joint EU debt and net financial transfers between Member States can be associated with a further decline of risk premia.
- **Central bank money, which represents a common liability of all Member States, is rapidly increasing.** ECB's purchase programmes – in which the Eurosystem creates money to buy government bonds – resemble to some extent a mutualisation of debt.
- **Fiscal dominance is a valid concern.** The determination of the ECB to maintain price stability would be tested if inflation threatened to exceed the target. Then, the ECB would have to choose between maintaining price stability on the one hand and public debt sustainability, financial stability and cohesion of the Economic and Monetary Union (EMU) on the other.
- **The ECB faces a particular challenge due to the unique institutional architecture of the euro area.** Safeguarding independence of monetary policy requires institutional reforms either in the direction of a more comprehensive and effective fiscal union or in the direction of reviving the principle of fiscal responsibility embedded in the Maastricht Treaty. Remaining stuck in the middle would probably leave problems unsolved and would cement the conditions for fiscal dominance to prevail.
- **Governments should use the years ahead to reorganise EU institutions and reduce debt to levels sustainable also in a less benign interest rate environment.** While chances are that borrowing costs remain low over the coming years, we cannot expect this to persist forever and should prepare for an eventual rise of interest rates at a later stage. Rather than taking the current period of low borrowing cost as a reason for complacency, we would see it as a window of opportunity, and suggest starting a process of fiscal consolidation as soon as an eventual recovery of the economy from the pandemic allows for it.

1. INTRODUCTION

The COVID-19 pandemic called for a multitude of fiscal and monetary policy measures to reduce damage, stabilise output and calm financial markets. National governments found themselves in the urgent need to act decisively in order to mitigate the social and economic consequences incurred by measures to contain the virus and by changes in behaviour to avoid infection. Inevitably, the enormous magnitude of the fiscal response will lift public debt levels substantially, in some cases from already elevated levels, and the strain on fiscal resources could be aggravated if this exceptional crisis incurred permanent damage on potential output compared to pre-crisis expectations. Simultaneously, the central bank played a prominent role in calming financial markets. In March, increasing spreads on returns of government bonds threatened to constrain the fiscal capacity of some Member States to mitigate the crisis, and a sovereign debt crisis was looming at the most inopportune time. The European Central Bank (ECB) was forced to act swiftly – much faster than a joint fiscal policy response could have been agreed upon – in order to prevent further repercussions from tensions and turmoil on financial markets. As central bank policy was already constrained at the zero lower bound, the ECB primarily relied on further large-scale asset purchases.

Over the course of the crisis, there has been a strong complementarity between monetary and fiscal policy. Elevated borrowing needs of governments were accommodated by low interest rates and asset purchases of the ECB, guaranteeing favourable financing conditions. As consumer price inflation decreased from already subdued levels, and with currently no indication for upcoming inflationary pressures, expansionary monetary policies that effectively accommodate fiscal policy responses are not at odds with achieving price stability. Conversely, a strong fiscal response plays an important role in stabilising output, thereby reducing downward pressure on prices, which contributes to the central bank's main objective – price stability. Moreover, the impact of expansionary fiscal policies on output is probably more effective than usually, because the offsetting monetary policy reaction will be absent as long as the central bank is constrained at the zero lower bound. Overall, the recent interplay of monetary and fiscal policy appears like a coordinated crisis response of mutual benefit.

Looking forward, however, unpleasant trade-offs may emerge that endanger central bank independence. With already elevated public debt levels increasing further, government finances are becoming even more vulnerable to pressure from financial markets. As long as interest rates remain exceptionally low, high debt is indeed not a particular concern. If inflation threatened to exceed the central bank target, however, the ECB might face delicate trade-offs. In that situation, a decisive tightening of monetary policy may be required to maintain price stability, but this would probably put too much pressure on government budgets and create unbearable consequences, thus endangering central bank independence.

This paper discusses selected aspects of the monetary-fiscal nexus. Section 2 investigates the recent interplay between monetary and fiscal policy. We find several indications nurturing the suspicion that some sort of monetary financing is actually already in the making (2.1). The development of interest rate spreads between euro area Member States over the course of 2020 is investigated closely, as recent measures of monetary and fiscal authorities may have reduced the probability of a breakup of the currency union (2.2). Section 2.3 discusses the role of vastly increasing central bank money as a common liability. In Section 3 we describe trade-offs the ECB may face in a scenario of rising inflationary pressures, which might put central bank independence into question and result in a regime of fiscal dominance in the monetary union. Section 4 considers avenues to improve conditions for central

bank independence in the years ahead, focusing on the role of the institutional framework of the monetary union. Section 5 concludes.

2. RECENT INTERPLAY OF MONETARY AND FISCAL POLICY

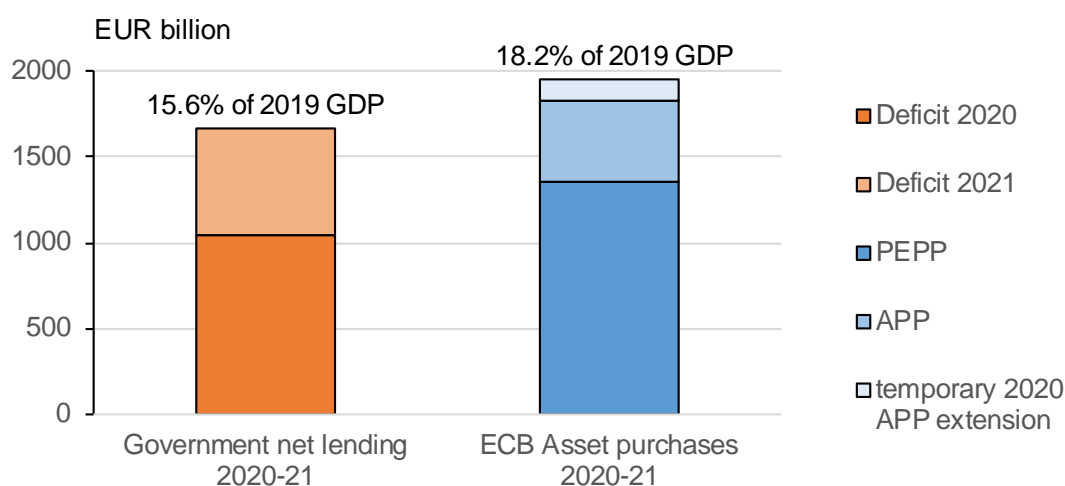
2.1. Implicit monetary financing

In the current crisis, the central bank effectively took measures to support and sustain public finances. This contributed to the impression that, at least implicitly, the ECB might already be violating the ban on monetary financing laid down in the Maastricht treaty. That said, the ECB is clearly able to explain and justify its actions and programmes within its mandate, e.g. as measures to ensure transmission of monetary policy and to promote financial stability. Still, there are some indications that nurture the suspicion that monetary financing is de-facto already implemented – although unofficially.

2.1.1. Government budget deficits financed by the ECB

The ECB has announced sizable bond purchases in 2020 and 2021. The asset purchases under the pandemic emergency purchase programme (PEPP) – introduced in March and expanded in June – are currently planned to amount to EUR 1.35 trillion by June 2021. Moreover, at the current pace of monthly purchases of EUR 20 billion under its “regular” asset purchase programme (APP), together with EUR 120 billion of asset purchases on a temporary envelope in 2020, the Eurosystem will add another EUR 600 billion to its balance sheet within two years. Combined, these asset purchases amount to almost EUR 2 trillion until the end of 2021, most of which are government bonds (Figure 1).

Figure 1: Government net lending and ECB asset purchases during the COVID-19 crisis



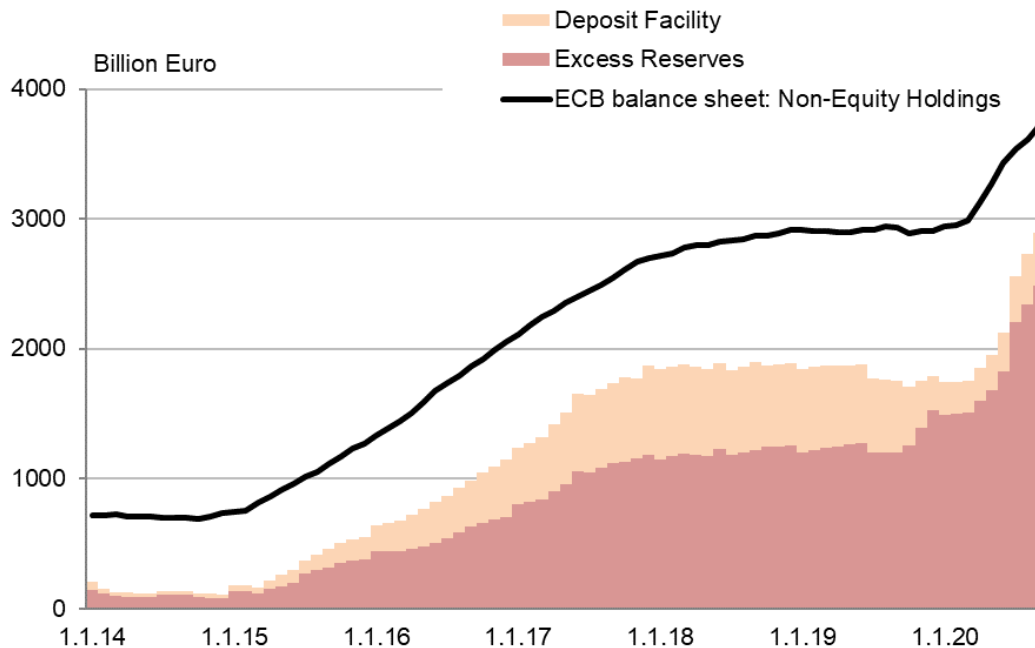
Source: ECB, Consensus (2020), Eurostat, own calculations.

Government net lending in the euro area will probably be of similar size as the bond purchases of the central bank. According to the October survey of Consensus Economics, the median expected government budget deficit in the euro area will be EUR 1.046 trillion in 2020 and EUR 622 billion in 2021, amounting to almost EUR 1.7 trillion within two years (Consensus 2020, p.19).

The ECB provides sufficient funding to effectively fully finance government deficits. Governments in the euro area issue additional bonds of immense volumes (on primary markets), and the Eurosystem simultaneously purchases bonds of almost the same volume and duration (though on secondary markets). What follows is that, in some sense, monetary financing is effectively carried out already, even though it is not called so officially, and even if the actions can convincingly be explained

and justified by central bank communication with different reasons and arguments, e.g. "... to effectively stave off risks to the smooth transmission of monetary policy." (ECB 2020a).

Figure 2: Excess liquidity in the monetary system and ECB asset purchases, 2014-2020



Source: ECB, own calculations.

Note: The black line represents assets on the Eurosystem balance sheet, while excess reserves and the deposit facility represent liabilities of the Eurosystem that are part of the monetary base and that grow in tandem with asset purchases.

A by-product of central bank bond purchases is the ever-increasing stock of excess reserves in the monetary system. The interplay between a central bank that prints (electronic) money and governments that issue new bonds may have no serious immediate consequences, as long as prices remain stable. However, the newly created central bank money certainly shows up and remains in existence within the monetary system on reserve accounts, though neither used nor needed by monetary financial institutions (Figure 2). Textbook theory of the "money multiplier" suggests that these reserves could in principle trigger a huge credit expansion, as soon as other – in the current situation obviously more binding – limitations to credit creation dissipate. It remains to be seen if and when this huge amount of excess liquidity will have to be withdrawn from the monetary system at a later point in time.

2.1.2. Like it or not: the ECB is here to close spreads

An independent central bank like the ECB is not responsible to ensure favorable refinancing conditions to governments, yet in practice this position is soon to be abandoned. At the height of the sovereign debt crisis in 2012, the ECB stepped in to reassure markets of solvency of certain Member States, when there was doubt that the resources of the fiscal rescue mechanism, the European Stability Mechanism (ESM) – offering financial assistance to ailing Member States – were sufficient to rescue larger economies like Italy or Spain. The outright monetary transactions (OMT) program was announced at a time when fear in financial markets that countries' fiscal positions might drift towards

debt unsustainability with deteriorating financing conditions threatened to be self-defeating (multiple interest equilibria). The powerful statements by previous ECB president Draghi (“Whatever it takes to preserve the Euro” – “and believe me, it will be sufficient”) underlined the central bank’s willingness to suppress self-fulfilling sovereign debt crises once and for all. Furthermore, quantitative easing programs were set up in the following years, starting in 2015, and have significantly improved financing conditions for governments, thereby reducing the burden of existing high levels of public debt. No matter if by accident or by choice, the ECB is clearly involved in safeguarding sustainability of public finances.

In the early phase of the COVID-19 crisis, a resurgence of the sovereign debt crisis of 2012 was suddenly looming. Escalating risk premia in government bond markets of a number of countries with high government debt levels were not welcome at a time, when all attention of decision makers was dearly needed to contain the pandemic. When the COVID-19 crisis unfolded in its full magnitude in spring, the ECB had to back-pedal on its initial signals sent to financial markets. During the press conference following the Governing Council meeting on 12 March, ECB president Lagarde had uttered the view that the ECB “is not here to close spreads” (ECB 2020b). While this may have expressed the idealistic self-conception of an independent central bank, market observers took it as evidence for a lack of commitment to preserve cohesion of the monetary union. Without “side protection” by the central bank, and in the absence of another potent lender of last resort – as ESM support was not regarded a valid option for Italy – intra-euro area risk spreads exploded. Only a few days later, on 18 March, the ECB announced the PEPP (ECB 2020c). Now, Lagarde assured via Twitter that “there are no limits to our commitment to the euro.” The ECB is indeed here to close spreads.

The ECB had to forcefully convince financial markets once more that public debt is not going to default soon. The PEPP comprises additional asset purchases of about EUR 100 billion per month. Importantly, the ECB did not rule out to deviate temporarily from its capital key when allocating bond purchases, to frontload planned purchases on the timeline, and to extend the programme if necessary. The programme can be interpreted as OMT but without the precondition of asking for ESM support and consequently, without macroeconomic adjustment programmes. Whenever pressure increased on bond yields of a particular country, the ECB would be able to purchase as many bonds as needed to push down yields, thereby ruling out self-fulfilling sovereign debt crises. In any case, the announcement of PEPP was sufficient to calm down market fears and to stabilise government bond yields. Once more, the central bank was forced to take decisive actions to assist governments in preserving access to market financing.

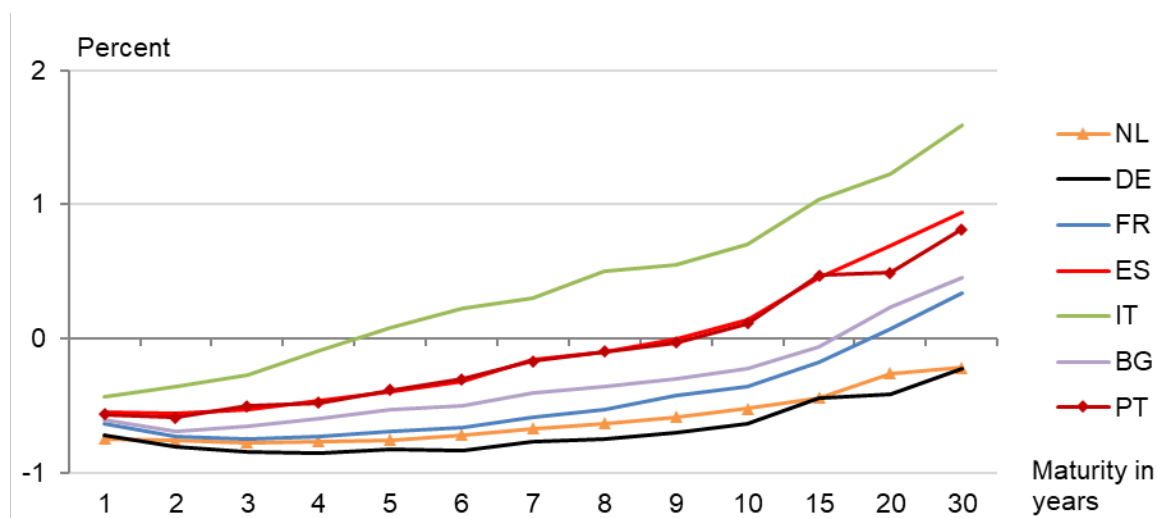
2.1.3. The central bank as major creditor to governments

By the end of 2020, government bond holdings of the Eurosystem amount to more than 20% of euro area GDP. As the ECB capital key is the primary benchmark to allocate the volume of asset purchases on Member States, this GDP share of asset holdings does not deviate too much by individual countries (except for Greece, as its bonds were not eligible in the public sector purchase programme [PSPP]). Not surprisingly, the central bank has become the single biggest creditor to governments.

Apparently, there is a strong interdependence between government budgets and their biggest creditor. First, by holding that much public debt, the central bank obviously plays a major role in the financing of governments – as a matter of fact. Second, as the Eurosystem holds large parts of issued bonds, this clearly has an impact on financing conditions. Looking at current yield curves, these conditions are quite favorable for all Member States from a historical perspective (Figure 3). Although debt levels are set to increase strongly due to the current crisis, countries like Portugal and Spain can issue bonds at below zero interest with up to nine years maturity, France and Belgium with up to 15

years maturity, and Germany and the Netherlands even with 30 years maturity. Even if the ECB policy may not directly be guided by the wish to lower the debt burden of governments (Schnabel 2020), the effect is the same.

Figure 3: Yield curves of selected Member States, October 2020

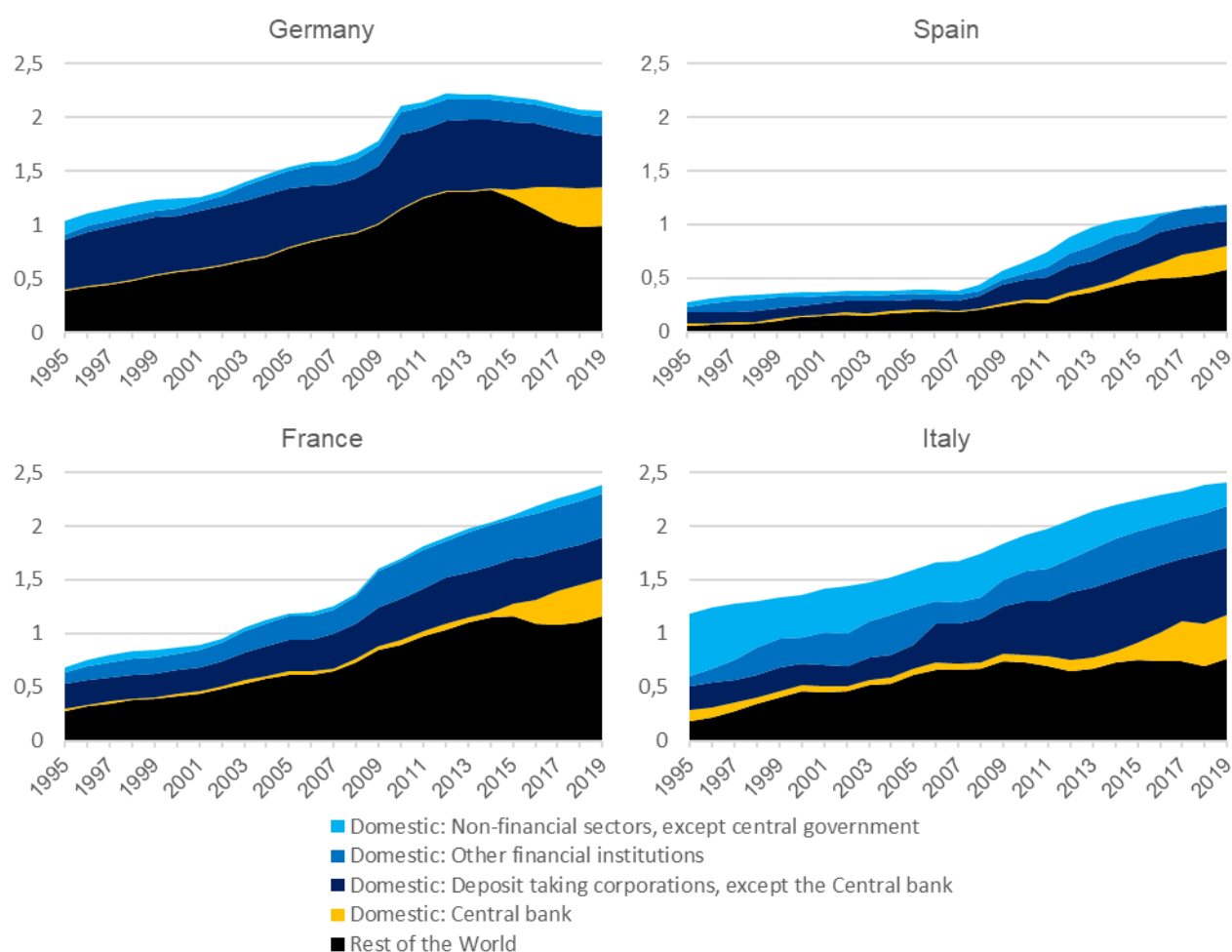


Source: Thomson Reuters Eikon.

Debt held by the central bank does not weigh on government budgets. Interest payments on sovereign bonds held by the Eurosystem will show up as profit of national central banks and will eventually be transferred back as revenue into respective government budgets, much like a zero-sum game without net interest flows. Those government bonds that are permanently held by the central bank do actually not strain government budgets. This raises the question whether public debt of, say, 100% in relation to GDP actually requires debt service to mere 80% of the debt – the part that is actually held by non-central bank market participants. Apparently, this reasoning will only be valid as long as the ECB does not have to reduce its investment position on sovereign debt, e.g. to withdraw excessive liquidity from the monetary system.

Meanwhile, the central bank takes substantial creditor risk, in particular default risk and interest-change risk. If, for example, inflationary pressures required the ECB to substantially increase the interest rate level at some point in time, sovereign bonds with high residual maturity would suddenly lose much of their present value. Suppose the Bank of Spain purchases Spanish government bonds today at a volume of EUR 10 billion, 10 years maturity and zero interest rate. If the nominal interest rate would rise to 4%, the present value of these bonds would shrink to less than 70%, so the respective assets of the Bank of Spain would shrink by more than 30% in their market value. This, in turn, could in principle result in negative equity for some central banks, and usually the domestic government would have to step in and recapitalise the national central bank. As a consequence, the creditor risk taken by the national central bank is de-facto also an implicit risk to government budgets.

Figure 4: Government debt by holder in EUR trillion, 1995-2019



Source: ECB (Government Finance Statistics: Gross consolidated government debt - by holder).

The central bank grows in importance in the holder structure of circulating bonds. To this end, consider the distribution of nominal bond volumes held by different types of investors (Figure 4). Moreover, this tendency accelerated sharply in 2020 (not shown here), when the ECB launched PEPP. Besides that, there are some notable differences between Member States. For example, while France and Italy exhibit an unbroken trend of increasing debt levels, there was substantial fiscal consolidation going on in Germany between the last financial crisis and the COVID-19 crisis. Moreover, Italy also shows a much higher share of domestic creditors than Germany. In all countries, particularly in Spain and France, domestic banks reduced their holdings of government bonds disproportionately over the same period.

2.2. Mitigation of euro area breakup risk

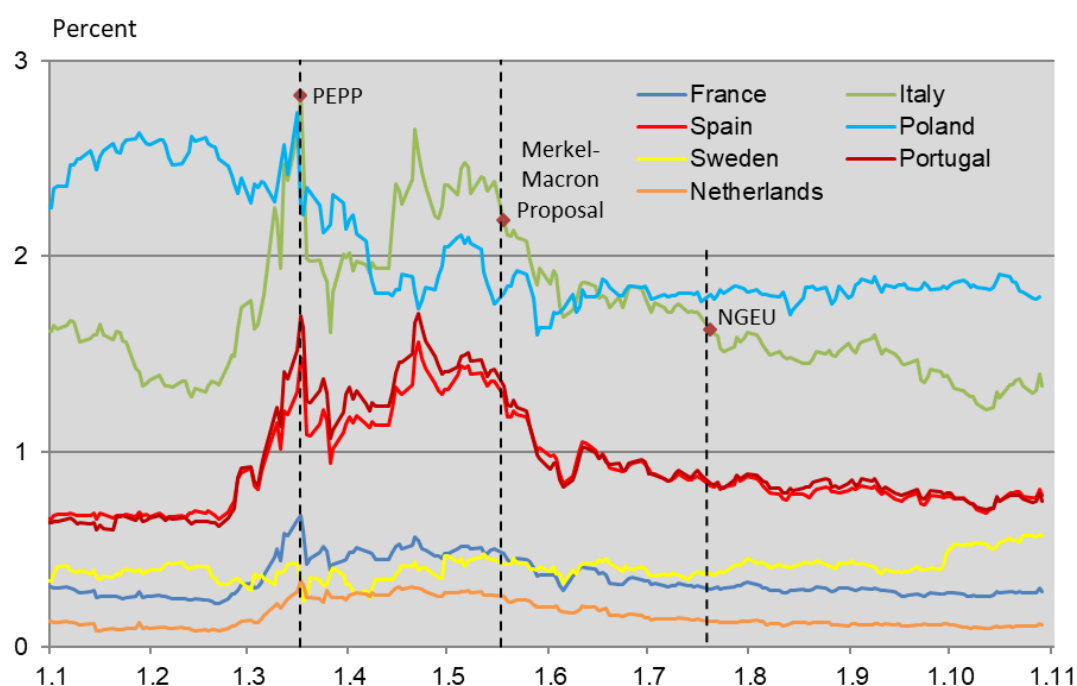
The COVID-19 crisis brought back fears of a possible breakup of the currency union. Italy, which was hit first and quite substantially by the first wave of the pandemic in late February, was soon considered a question mark in its ability to manage a crisis of this magnitude on its own. Moreover, for political considerations it appeared unlikely that Italy would request financial assistance from fellow governments via the rescue mechanism ESM and would agree on a macroeconomic adjustment programme linked to that. Against this backdrop there was a growing nervousness in financial markets, manifesting in soaring spreads on the returns of Italian government bonds in early March. Noteworthy,

intra-euro area spreads generally increased at that time, not only for Italian bonds, but also for countries deemed invulnerable like France and the Netherlands (Figure 5). This points to a common risk factor among euro area Member States, which was absent for non-euro area EU members like Poland and Sweden. The common risk factor can be interpreted as breakup risk of the currency union.

The swift reaction of the ECB in mid-March prevented risk spreads from widening further. As the ECB back-pedalled on its former signals to markets, according to which the central bank is not actively involved in controlling risk spreads, it took only a few days and nights to design and announce a huge “pandemic emergency purchasing program” (PEPP). This program was sufficiently reassuring to markets so that intra-euro area risk spreads stabilised in the time after. Once again, the central bank was the main actor on stage which was capable of a swift and decisive action in due time, even though accompanied by discussions and legal interpretations whether or not the ECB acted within its mandate. On the contrary, a joint fiscal response requires substantial preparation and negotiation between heads of state, as well as legitimisation by national parliaments. Consequently, in the wake of the COVID-19 crisis, the ECB had to act as “fire brigade” once again, whereas joint and unanimous decisions by heads of state require patience, particularly if they involve huge volumes of taxpayer money.

In the course of the COVID-19 crisis, considerable political pressure emerged and eventually brought about the conviction that a joint fiscal response on EU level was needed. In early April, governments agreed on a loan programme worth EUR 540 billion as a first step, comprising three elements: First, EUR 240 billion were made available at the ESM to provide “pandemic crisis support” (PCS) if needed, unconditional on the requirement of close fiscal surveillance and without a macroeconomic adjustment programme. Second, a EUR 100 billion loan programme – built on guarantees – was put in place to finance short-time work or furlough schemes in Member States called “Support mitigating Unemployment Risks in Emergency” (SURE). Third, the European Investment Bank (EIB) offered a total of EUR 200 billion of loans to small and medium-sized enterprises. Despite this early loan programme, the pressure persisted to come up with a more dedicated, more generous financial assistance on EU level to cope with the crisis.

Figure 5: Spreads of 10-year government bond yields vs. Germany

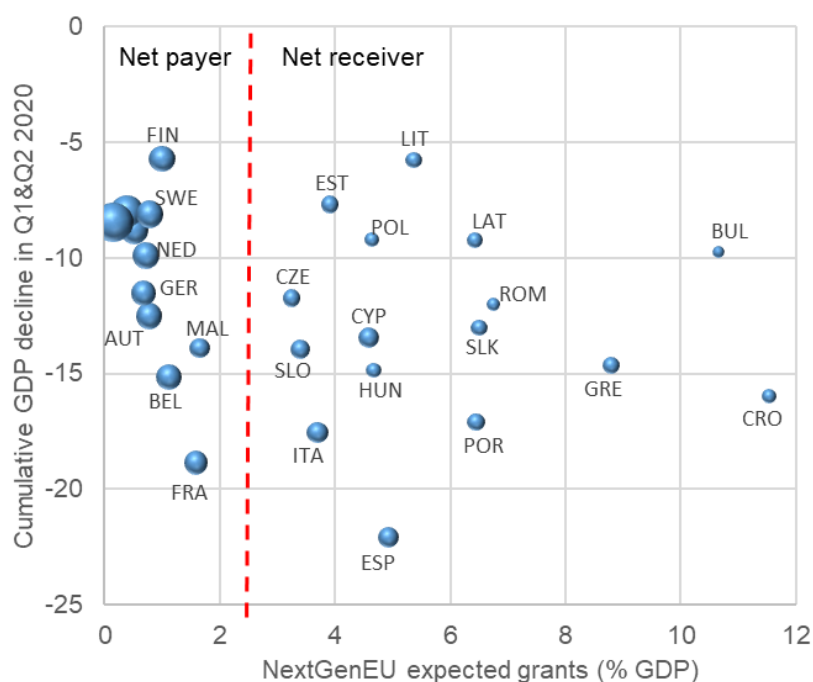


Source: Thomson ReutersEikon.

The Merkel-Macron proposal to issue joint EU debt and to distribute grants to Member States eventually became known as a programme called “Next Generation EU”. On 18 May, German chancellor Merkel and French president Macron came up with the proposal to set up a program that involves joint debt issuance worth EUR 500 billion and net financial transfers between Member States of the EU. Building on that, the EU Commission added EUR 250 billion of loans from joint debt and prepared a proposal for a full-fledged programme called “Next Generation EU” (NGEU), designed to complement the 7-year multiannual financial framework 2021-2027. In late July, after several days and nights of negotiation, the programme was adopted with EUR 390 billion of grants and EUR 360 billion of loans. For the first time in history, the EU would issue joint debt that is not directly accompanied by claims against the receivers of funds (as in the case of EIB loans). Respective assets will exist at least until 2058, when repayment is supposed to be accomplished.

The NGEU programme can be criticised for various reasons. First, loans and grants from NGEU will be distributed largely between 2022 and 2026, when the acute crisis is likely long gone. Second, vulnerabilities like high and further increasing levels of public debt beyond 100% or even 150% in relation to GDP will hardly be solved by grants of merely 2-3% of GDP on average (and these are gross flows). Third, under the assumption that Member States contribute to the repayment of joint debt at a later point in time according to their current EU budget contributions (or alternatively that EU tax payers eventually repay the debt proportionate to the GDP share), there will be net payers and net receivers of NGEU. Countries that receive grants of more than 2.5% in relation to GDP will likely be net receivers. However, if we compare expected grants from NGEU programme with the GDP loss that occurred over the first half of 2020, we see that the correlation is very weak (Figure 6). Although the rationale for a joint fiscal response were directly related to the exceptional burden of the pandemic, the economic damage incurred by the COVID-19 crisis so far plays only a minor role for the expected allocation of funds. Instead, key macroeconomic indicators of the pre-crisis years (unemployment, per-capita-income) primarily determine net financial flows (Bundesbank, 2020).

Figure 6: The relationship between GDP decline in 2020 and expected NGEU grants



Source: Eurostat, European Commission (2020), Own calculations.

Note: Bubble size represents per capita GDP in 2018.

The introduction of joint debt and net financial transfers between Member States probably led to a decline in the perceived likelihood of Economic and Monetary Union (EMU) breakup. Once the Merkel-Macron proposal was announced, it was clear that major players in the political game – in particular in the German ministry of finance – were changing their previous position and became willing to accept “quasi-Eurobonds” and net transfers of substantial magnitude. Looking forward, after the contested instruments are put in place, they can be used again if deemed appropriate, including to roll over further parts of national public debt with jointly issued bonds, implying additional debt mutualisation. “Financial markets” probably interpret the NGEU agreement as a major first step towards an ever-closer fiscal integration. By this, the probability of a sovereign default of a Member State declined, and therefore a breakup of the currency union was perceived less likely. As a consequence, risk spreads within the euro area took a downward trajectory (Figure 5).

2.3. Central bank liabilities as part of consolidated sovereign debt

The measurement of a sovereign’s debt is not a trivial task. A common approach is to look at government gross debt – the sum of sovereign bonds and loans to the government. The consolidated gross sovereign debt of a country is then determined by netting out any intra-governmental loans between different fiscal entities, such as local, state, and central governments, and social security schemes. Also, in many cases, fiscal strength will depend more on net debt (gross debt minus assets): if a sovereign holds substantial assets (for example in the form of a sovereign wealth fund), a given amount of gross debt will be less daunting.

A full accounting needs to include a country’s central bank. In a typical country outside the euro area, the inclusion of the central bank might be relatively simple: it issues a liability of the sovereign (namely central bank money in the form of cash and reserves), thus increasing gross debt. It may also, for example due to purchase programmes, hold government bonds, which would decrease gross consolidated debt. Finally, it holds other assets, such as loans to commercial banks, which reduces net sovereign debt. So as long as assets and liabilities of such a central bank develop roughly in line with each other, the sovereign’s net debt should not change much.

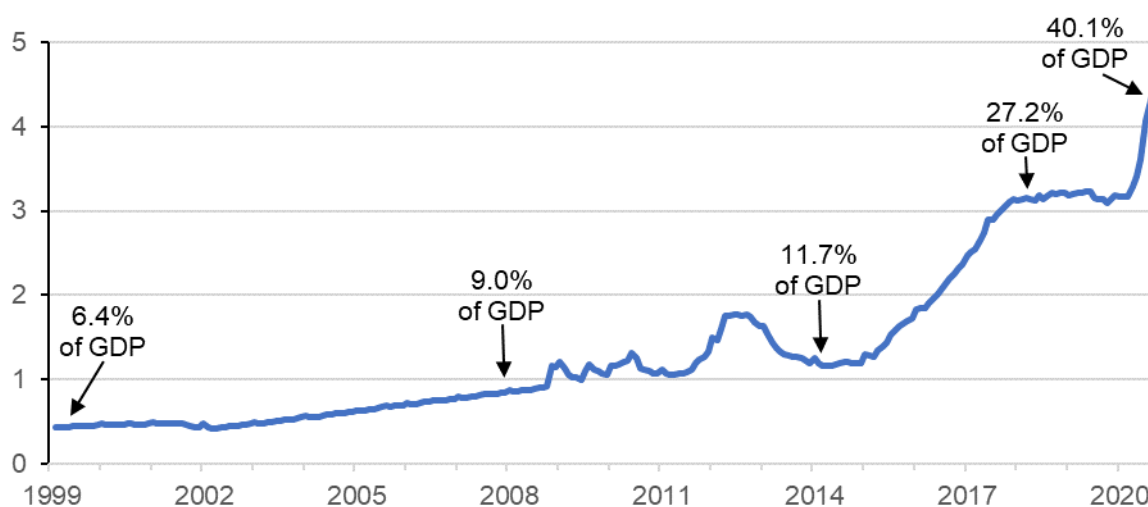
Central bank policy affects not only the level, but also the term structure of sovereign debt. The term structure of the debt is important because to the degree that a sovereign is funded through long-term liabilities it will be insulated from sudden changes in interest rates, leaving more time for necessary budget adjustments. At the same time, as long as term premia are positive – meaning that creditors find long-term bonds more risky than short-term ones – the overall interest burden for a sovereign will increase in the degree to which it uses long-term liabilities. This suggests there is a trade-off that must be resolved by policy makers to determine the optimal term structure of sovereign debt. In this regard, central bank money is an interesting case. On the one hand, it has properties of a perpetuity: there is no specific point in time when it absolutely has to be redeemed by the government. Further, cash does not even provide interest payments. On the other hand, for a responsible government, central bank money might be the liability most exposed to short-term developments. Central bank operations determining the amount of money in circulation are conducted every day. If the demand for money should fall, maybe even precipitously, the central bank would have the choice to either decrease the amount of money to the same extent or let inflation run out of control.

The Eurosystem acts as a common central bank for Member States which conduct individual fiscal policies. The Eurosystem issues central bank money that is a liability for all Member States – that is, central bank money functions like a Eurobond. It also holds a variety of assets, including loans to commercial banks and government bonds. Some of these assets are held by the national central banks in their individual accounts, while others are held jointly. There are also claims that the individual

central banks have with respect to each other (cf. TARGET2 balances). However, these claims are generally not callable and not remunerated. It is unclear to which degree the Eurosystem would be able and willing to insist that an individual Member State recapitalise its national central bank to compensate for losses in its portfolio of loans and bonds. The treatment of claims within the Eurosystem is ultimately a political act, so as long as there is no binding legal clarification on these issues, it will remain impossible to reliably determine the net contribution of euro area membership to individual Member States' (net consolidated) sovereign debt levels.

The extraordinary monetary policies of the Eurosystem since the sovereign debt crisis have increased its fiscal involvement substantially. Due to its nature as a common liability of all Member States, the issuing of euro central bank money always carried a certain degree of ultimately fiscal consequences. However, in the past, the outstanding amount of central bank money was generally relatively small. Extraordinary monetary policies such as large-scale asset purchase programmes changed that (Figure 7). In September 2020, the Eurosystem's outstanding base money exceeded EUR 4.4 trillion and it is set to further increase substantially.

Figure 7: Euro area base money in EUR trillion

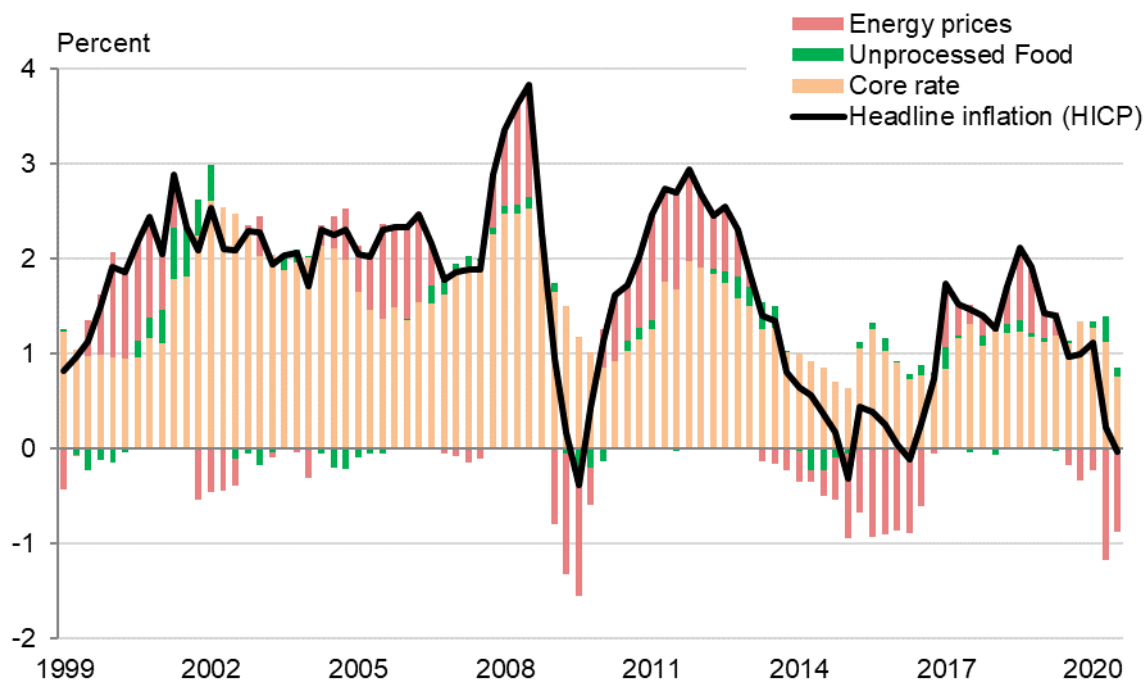


Source: ECB, own calculations.

3. FISCAL DOMINANCE

Fiscal dominance refers to a situation where the central bank neglects its objective of maintaining price stability in order to support government spending. Historically, there have been numerous examples where high government debt was eventually resolved through inflation (Schnabel 2020). An extreme form of fiscal dominance would be a government deficit that directly determined the increase in the money supply, such that fiscal profligacy would be accommodated by newly printed money and finally paid for by society with higher inflation. The ECB and the euro by contrast were designed on the principle of monetary dominance, meaning that the pursuit of price stability must not be constrained by other considerations. Clearly, there can be grey scales of fiscal dominance, and monetary dominance. While there is some indication that ECB policy actions may already be driven to some extent by requirements of public finances, it is fair to say that these have not been at odds with maintaining price stability thus far.

Figure 8: Consumer price inflation (HICP), 1999 - 2020



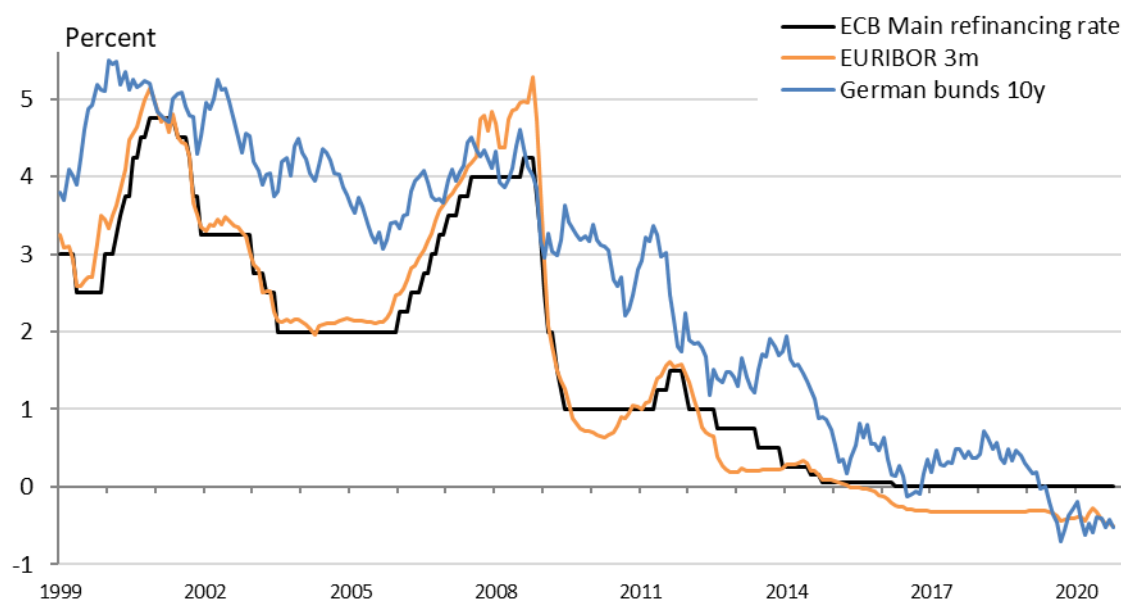
Source: ECB.

Note: Quarterly data, latest data point: Q3 2020.

The development of consumer price inflation gives no indication that the goal of price stability in the euro area has been abandoned in any way. In the first ten years since the onset of the currency union, consumer price inflation on average was slightly above 2% (Figure 8). Since then, underlying price pressures have eased, and over the past years inflation was below 2% most of the time. As a consequence, similar to other major central banks, the ECB was struggling to bring inflation back to its target of inflation of close to, but below 2% in the medium term. In the wake of the COVID-19 crisis, inflation decreased again markedly with headline inflation even falling into negative territory and core inflation, which excludes volatile price components like energy and unprocessed food and is regarded a more accurate measure of underlying price pressures, down to 0.4%. In this environment of subdued inflation, low interest rates and extraordinary measures such as asset purchases, which improve conditions on capital markets for governments to finance their debt, can be easily justified from a

monetary policy point of view as part of the policies to lift inflation back to target. For example, an inadequate fiscal response to the crisis resulting from problems to finance budgets would even increase downward pressure on prices, therefore neglected support to government finances might impede the ECBs ability to deliver on its main objective – price stability. From this perspective, admittedly, even undisguised monetary financing can be justified as long as inflation is too low.

Figure 9: Interest rates, 1999 - 2020



Source: ECB, Thomson Reuters Eikon.

The determination of the ECB to maintain price stability could be tested if and only if inflation threatened to exceed the target. Textbook theory of monetary policy rules suggests that rising inflation requires an increase of the real interest rate, and to achieve this nominal interest rates would have to rise over-proportionately (Taylor, 1993). In the first ten years of the euro between 1999 and 2008, when inflation was broadly on target, the main refinancing rate has been averaging at about 3% (Figure 9). Although markets currently expect inflation to remain low for a sustained period of time, a substantial increase of price pressures can hardly be ruled out. For example, if availability of a vaccine eventually brings an end to the pandemic, excess savings from the crisis months could suddenly spur a post-crisis boom (exceptionally high demand), while many companies may have gone bankrupt in the meantime (lower supply). Now, if underlying (core) inflation was on a rising trend and surpassed 2%, the upper limit of the ECB definition of price stability, monetary policy would have to be tightened considerably.

A normalisation of the interest rate level would impose considerable pressure on government finances. With higher inflation, nominal output growth would increase which – other things being equal – would support governments in their aim for fiscal sustainability. However, this effect is likely to be over-compensated by increasing pressure on sovereigns. Suppose the main refinancing rate were set at 3% as in the early years of the monetary union. At that time, German government bonds with 10 years maturity had returns approximately 1 percentage point higher than the main refinancing rate, so they averaged at about 4%. Now suppose this historical pattern re-emerged in the near future, and Italian government bonds would carry the same risk spread of 1.4 percentage points as today. Then the return on Italian government bonds with 10 years maturity, which is a proxy for the refinancing costs for public debt over all maturities, would climb to 5.4%. Considering that the debt level can be expected

to increase beyond 150% in relation to GDP as a result of the current crisis, this implies a long-run interest rate burden of about 8% of GDP, compared to 3.4% in 2019. In that scenario, the Italian government would need to reduce primary expenditures or increase revenues for many years in order to maintain a fiscal position in accordance with the European fiscal rules.

A sudden stop or reversal of ECB asset purchases would add to concerns over public debt sustainability. According to forward guidance, the ECB intends to purchase assets as long as interest rates remain low, which implies that the Eurosystem will stop buying bonds with the first interest rate hike. Moreover, as there still is a huge amount of excess reserves in the monetary system, the ECB might also consider to withdraw this unused liquidity (Figure 2). In order to do that, the Eurosystem would probably have to sell government bonds, as this is the channel by which excessive liquidity was emitted in the first place. Governments would not only lose a big market player that currently purchases their bonds like a vacuum cleaner, but the big pile of government bonds currently on the Eurosystem balance sheet could be thrown back on the carpet. Most likely, this would have dire consequences for risk spreads and the ability of some governments to refinance. Furthermore, if inflation would actually surpass the target level, the ECB would have to counteract by increasing the interest rate level over-proportionately, which would impose even higher refinancing costs on governments. Government financing at elevated debt levels would become much more difficult than it is today, and debt sustainability might be in doubt for some countries.

The market value of financial assets would decline, including those on the balance sheet of central banks. An increase in the interest rate level would reduce the present value – and therefore the market value – of financial assets considerably, in particular for assets with long duration. The valuation risk from a change in interest rates is particularly pronounced for longer-term government bonds issued at very low rates – for example, an increase of 1 percentage point in the reference interest rate will cut almost 10% from the market value of a recent bond with 10 years remaining maturity and near-zero coupon. Once markets expect a sustained normalisation of monetary policy, bond markets will probably come under significant pressure immediately. The surge in Treasury bond yield in 2013 known as “Taper tantrum”, when the Federal Reserve announced to reduce bond purchases initiated during the financial crisis, illustrates this point. The pressure on sovereign bonds would likely be aggravated if the ECB simultaneously tried to sell off assets on its balance sheet in order to withdraw liquidity from the monetary system. Overall, a substantial reduction in the market value of bonds and other assets would tear deep holes in the balance sheets of private market participants, including banks and pension funds, thereby potentially putting financial stability at risk. Yet also the central banks’ balance sheets would be strongly affected with negative equity as a possible result.

The central bank could be left with delicate trade-offs. The central bank would have to shoot in its own foot if monetary policy normalisation implied assets on the Eurosystem balance sheet to melt away, thereby obliterating its equity position. Even worse, the ECB might have to choose between maintaining price stability on the one hand and public debt sustainability, financial stability and cohesion of the EMU on the other hand. If inflationary pressures require a determined response of monetary policy at some point in the future, fiscal dominance becomes a valid risk that might hinder the ECB to deliver on its main objective.

The monetary expansion of the past years resembles a one-way street with a dead end. Going down that road was straightforward and sometimes even convenient, and we came here without a reasonable alternative. Unfortunately, the way back appears to be a difficult route. It is an open question if and when normalisation of monetary policy can be achieved without jeopardising public debt sustainability and financial stability.

4. SAFEGUARDING CENTRAL BANK INDEPENDENCE

Central banks around the world have seen expansions in their roles and instruments after the global financial crisis, but the ECB faces a particular challenge due to the unique institutional architecture of the euro area. In the aftermath of the global financial crisis, the role of major central banks around the world was stretched with respect to their roles in crisis management and as lender of last resort (Dall’Orto Mas et al. 2020). The ECB’s position is particularly complicated. The European sovereign debt crisis that followed on the Great Recession has revealed problems in the architecture of the euro area with its combination of centralised monetary policy and decentralised fiscal policies. The current crisis will increase debt levels strongly, in many countries from already elevated levels, in some cases to extreme heights. High debt makes governments vulnerable to multiple interest rate equilibria. In the current situation of an almost symmetric shock to the euro area economies, aggressive monetary easing and extensive purchases of government bonds from all Member States may be an appropriate response. However, the situation will be different if a future shock is asymmetric, and risk premia could easily rise again. This might put the ECB into a delicate situation, if the euro area outlook for inflation would not warrant an across the board monetary easing. Against this backdrop, institutional reforms are key to release the ECB from its current position as effective fiscal backstop for governments with shaky fiscal foundations.

Two paradigms struggle to dominate the political debate for institutional reforms in the euro area. In order to make substantial progress with regard to reforming the institutional architecture, a consensus on monetary and fiscal affairs among euro area Member States is necessary. The two competing approaches can be labelled as (1) Fiscal Union and (2) Maastricht 2.0. The Fiscal Union approach builds on harmonisation and deepening, in particular via common fiscal mechanisms on the euro area level. Maastricht 2.0 denotes the original Maastricht concept, enlarged by more emphasis on financial stability, and includes a re-establishment of the no-bailout rule of the Maastricht Treaty. These two concepts follow different monetary traditions that in the past (prior to the establishment of the euro) have coincided side by side on national levels, but need to be reconciled in the euro area.

4.1. Further steps towards a Fiscal Union

The Next Generation EU programme is a step into the direction of a fiscal union, but it is not consistent, of temporary nature and modest size. The COVID-19 crisis has triggered a significant fiscal response at the EU level (see section 2.2). Following an initial response consisting of various programmes providing loans from the ESM, from a newly established facility to support financing temporary unemployment (SURE), and from the EIB, the European Council came up with a proposal that consists not only of loans but includes also a substantial share of grants. However, several caveats exist: the NGEU programme, which still has to be enacted by the European Parliament and the Member States, does not disburse funds in the acute crisis; the volume of EUR 750 billion over 5 years is modest in comparison to EU GDP (around 1%); while the programme was motivated by the COVID-19 crisis, redistribution within the programme is only loosely correlated with the COVID-19-induced economic damage or idiosyncratic economic shocks and thus no systematic instrument to share fiscal risk. The probably most significant innovation is that the programme will to a large part be financed by issuance of joint European debt, an instrument Member States so far were not able to agree upon.

Numerous ways to implement fiscal risk sharing have been proposed implying steps in the direction of a fiscal union, but all of them need to be designed carefully in order to keep the incentives to employ prudent policies that help preventing a crisis in the first place. In a number of countries, fiscal space turned out to be insufficient to smooth out large fluctuations in activity and deal with macroeconomic shocks appropriately. This occasionally led to liquidity runs and steep rises

in yield spreads reflecting solvency risks that threatened to be self-fulfilling. With the introduction of the ESM, a safety net for fiscally distressed countries has been introduced, and the need for completing the Banking Union is widely acknowledged to help cut through the sovereign-bank nexus at the national level. However, additional elements of fiscal risk sharing are discussed, including a meaningful euro area budget, a rainy-day fund, an area-wide basic unemployment insurance scheme, or joint debt instruments at the European level (Gern et al., 2019). A general concern with respect to fiscal risk sharing is moral hazard: a system that effectively reduces economic pain in a country in the case of a crisis may also reduce the incentive to employ prudent policies that help preventing a crisis in the first place or to seek fiscal space in normal times to be capable of managing a crisis on its own. While many proposals try to reduce inherent problems of moral hazard by introducing specific rules and conditions, these tend to increase complexity and to have technical issues, e.g. related to the separation of cyclical from structural developments. A rainy-day fund that would give one-off fiscal support in times of substantial economic trouble (see e.g. Bénassy-Quéré et al., 2018) can provide some mitigation of idiosyncratic shocks, but entails the risk of political issues in the process of execution and results in persistent transfers. A larger central budget would be stabilising over the cycle, but the political foundations for such a fiscal union are missing, and the willingness to simultaneously shift competences to the supranational level is also lacking, which would be necessary to respect the principle of unity of liability and control. Shifting expenditures from the national to the European level may be appropriate in fields such as defence or public investment, but centralisation of policies lacks political support at the national level. There is also the problem that the EU budget is not confined to the currency union and thus not well-suited to deal with euro area problems.

4.2. Maastricht 2.0

The original Maastricht idea of fiscal self-responsibility needs firm foundations with respect to financial stability. The concept of Maastricht 2.0 perceives diversity and competition as strengths of the euro area. Institutional reforms along these lines would honour the principle of subsidiarity and re-establish a strict no-bailout rule, thus enforcing fiscal discipline via capital markets, including the possibility of sovereign defaults and public debt restructuring. Fiscal stabilisation would be conducted at the Member State level. The concept would not allow for any form of monetary government financing, and foresee reliable bail-in instruments to shield commercial banks from fiscal turmoil.

Re-establishing the no-bailout rule is central and requires that sovereign default of a Member State must no longer trigger a currency crisis. In a union of Member States with sovereign fiscal authority, each country would ideally be allowed to take its own fiscal policy decisions. If decisions turn out to be bad policies that ultimately lead to unsustainable public debt, there is, however, the risk of severe financial spillovers to other EU countries up to the point that financial integrity of the currency union as a whole is at stake. Preventing this externality of irresponsible fiscal policies is the rationale for the system of fiscal rules and surveillance in place. Fiscal surveillance has not, however, prevented that solvency of some countries is occasionally questioned in financial markets and the set of fiscal rules has arguably become overly complex over the years. How could the no-bailout rule credibly be re-established? First, a debt restructuring mechanism is required. Instead of bailing out creditors in advance by tax payers, actual solvency crises need to be distinguished from mere liquidity crises, and in the former case unsustainable debt must be restructured in an orderly fashion (Andritzky et al. 2016). Second, banking regulation needs to incentivise a diversification of risk, in particular to reduce the home bias in bank's bond portfolio and to reduce the vulnerability of banks to their own sovereign (Benassy-Quéré et al 2018). Third, the home government must not be responsible to stabilise the domestic financial sector, but there has to be a financial backstop on supranational level that prevents systemic crises from escalating, particularly if the respective government is in financial trouble itself. If,

as a result, the domestic financial sector becomes sufficiently resilient to deal with a default of their home government, the vulnerability of the euro area would be substantially reduced, and the no-bailout rule could regain credibility.

4.3. Stuck in the middle: muddling through

In the current institutional arrangement, monetary policy is held hostage by its position as a fiscal backstop. Since 2010, the Eurosystem has been operating in crisis mode. It responded to the global financial crisis and the subsequent European sovereign bond crisis by steering interest rates into negative territory and by engaging in large-scale asset purchases. The massive purchases of government debt have been justified as an instrument to bring back inflation closer to its target, but it has also been understood as a way to “buy time” for governments to implement structural reforms in order to strengthen growth and consolidate public finances. The ECB has communicated over and over again that monetary policy cannot replace structural reforms. However, low financing costs for governments not only render reform programmes easier to handle, they also make it less costly in the short-term not to reform. Debt levels have not significantly decreased in the euro area during the recovery after the crises, and as a result many countries entered the COVID-19 crisis with debt levels (and sometimes deficits) still elevated. In this situation, there are two ways to combat spiralling risk premia and the development of an uncontrolled debt crisis. Either the central bank remains in its current position and prevents bad interest rate equilibria as lender of last resort also for governments, or public debt has to be reduced to an amount where multiple interest rate equilibria are unlikely. As long as monetary policy can be relied upon to step in in the case financial markets lose confidence, incentives to bring down government debt sufficiently will be undermined. Therefore, appropriate fiscal rules and a strict and effective fiscal monitoring would be needed.

Strengthening fiscal rules and conditional fiscal support risk reducing the political fabric of the Union – ownership is key. In the past years the European system of macroeconomic monitoring and fiscal supervision has been extended and has become increasingly complex. Most proposals for introducing further elements of fiscal risk sharing also include strengthening or amending fiscal rules in order to reduce moral hazard. At the same time, compliance with the rules and implementation of country-specific recommendations seems to have declined over the years. A further tightening of rules and the introduction of ever more control and interference into national fiscal affairs could ultimately severely damage popular support for the European project. Policies such as fiscal consolidation or structural reforms on goods and labour markets to increase the growth potential can be expected to be more successful if there is ownership for these reforms with national decision makers and their voters.

5. CONCLUSION

In the current crisis, there is a strong complementarity between monetary and fiscal policies.

Elevated borrowing needs of governments in their quest to cushion the negative impact of behavioural responses and government restrictions on economic activity are accommodated by low interest rates and asset purchases of the ECB, thus guaranteeing favourable financing conditions. While expansive monetary policies are appropriate given downward pressure on inflation at already subdued levels, there are indications that these policies ultimately amount to monetary financing.

Fiscal dominance is a valid concern. The determination of the ECB to maintain price stability would be tested if inflation threatened to exceed the target. A substantial increase in key interest rates and a reversal of asset purchases would impose considerable pressure on government finances, potentially leading to a renewed surge in risk premia on government bonds of highly indebted countries, and with the risk of triggering turmoil in the financial sector. Then, the ECB would have to choose between maintaining price stability on the one hand and public debt sustainability, financial stability and cohesion of the EMU on the other hand.

A continuation of the ultra-low interest rate regime appears likely according to market expectations, so that debt sustainability concerns would lose significance – but there is only probability, not certainty. The good news is that there appears to be no sustained increase in underlying inflation in the cards for the next couple of years, and from the yield curve (or forward swaps) it can be inferred that investors expect interest rates to remain low over the next ten years. Therefore, chances are that borrowing costs remain low relative to growth for the foreseeable future. With low interest rates much higher debt-to-GDP ratios are sustainable and that primary government deficits are feasible without jeopardising fiscal sustainability, compared to a situation with higher levels of interest rates like those prevailing before the global financial crisis and that are implicitly built into the European fiscal rules (Blanchard et al., 2020). However, we cannot be sure that this scenario actually unfolds, i.e. that interest rates remain that low for a sustained period of time. Given progressive demographic aging in increasing parts of the world, there are sound arguments to expect upward pressure on interest rates from declining savings in the not too distant future.

Governments should use the coming years to reorganise EU institutions and reduce debt to levels that appear sustainable also in a less benign interest rate environment. We suggest that the upcoming years of low interest rates should be seen as a window of opportunity, where fiscal space should be used to put the house in order. A process of fiscal consolidation should be initiated as soon as an eventual recovery of the economy from the pandemic allows for it. At the same time, the institutional set-up of the monetary union should be reformed. This could either be in the direction of a more comprehensive and effective fiscal union or in the direction of reviving the principle of fiscal self-responsibility embedded in the Maastricht Treaty. Both approaches are demanding as their consistent implementation requires a consensus on how economic policy in the EU should work, a consensus that is apparently difficult to establish. Remaining stuck in the middle would probably leave problems and vulnerabilities unresolved and would cement the conditions for fiscal dominance to prevail.

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Monetary-Fiscal Interactions in the Euro Area: Assessing the Risks

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Abstract

The global pandemic is deepening the linkages between fiscal and monetary policies. While some are concerned that high public debt may pressurise the ECB to pursue overly loose monetary policy, this paper argues there is a greater risk that the Treaty's rules on monetary financing will constrain the ECB from reacting appropriately to the crisis and that re-imposing the EU's fiscal rules from 2022 onwards could harm economic recovery. This paper calls for an overhaul of the economic rules in the Treaty.

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LIST OF ABBREVIATIONS

APP	Asset purchase programme
CAC	Collective action clause
ECB	European Central Bank
ECJ	European Court of Justice
EMU	Economic and Monetary Union
EU	European Union
ESM	European Stability Mechanism
FOMC	Federal Open Market Committee
GDP	Gross domestic product
OMT	Outright monetary transactions
PEPP	Pandemic emergency purchase programme
PSPP	Public sector purchase programme
QE	Quantitative easing
TFEU	Treaty on the Functioning of the European Union

EXECUTIVE SUMMARY

- **The COVID-19 global pandemic is leading to large increases in public debt across the world.** This is pushing many countries towards unprecedentedly high debt-GDP ratios.
- **The crisis is also increasing the inter-linkages between governments and central banks and between monetary and fiscal policies.** Central banks are accumulating large amounts of sovereign debt via asset purchase programmes.
- **Inter-linkages of various sorts are emerging between fiscal and monetary policies.** Low interest rates allow governments to carry higher debt burdens and ownership of sovereign debt by central banks reduces the net burden of the interest on this debt. The potential deployment of the European Central Bank (ECB)'s outright monetary transactions (OMT) programme also acts to stabilise sovereign debt markets in the euro area and reduces the change of a speculation-driven sovereign default.
- **Some are concerned that high public debt may pressurise the ECB to pursue overly loose monetary policy.** However, this paper argues this is not a major source of risk.
- **We are likely to be in a low-interest regime for a long time, so there is little reason to be concerned about debt sustainability in the euro area.** Concerns about fiscal debt should not prevent us responding adequately to this crisis.
- **The ECB has been clear that its actions are consciously making it easier for governments to pursue active fiscal policies to combat economic weakness and that it supports an active fiscal response.** Rather than be concerned about fiscal-monetary interactions, we should welcome that ECB is enabling a strong co-ordinated approach to an unprecedented threat to our economy.
- **This approach is also fully consistent with the ECB pursuing its primary objective.** Co-ordinated monetary and fiscal policies are the best bet for restoring price stability by returning inflation to its target level.
- **There is a risk that the Treaty's rules on monetary financing will constrain the ECB in its reaction to the crisis.** In particular, the pandemic emergency purchase programme (PEPP) may be ruled to violate the prohibition on monetary financing.
- **The European Court of Justice (ECJ) has, up to now, ruled that the ECB's asset purchase programmes do not violate the Treaty's monetary financing prohibition.** This paper discusses, however, how there are likely to be limits to the ECJ's tolerance of sovereign bond purchases by the Eurosystem and how the PEPP could trigger the ECJ to impose explicit limits on sovereign debt holdings.
- **The ECJ may be concerned about the non-temporary nature of asset purchase programmes.** They may also be concerned about the size of the Eurosystem's holdings and the question of whether the programmes are discouraging sound budgetary policy.
- **The ECB may be forced into an uncomfortable choice.** It may have to pick between the short-run stimulus provided by its asset purchase programmes and the longer-term existential threats to be addressed by the OMT programme.
- **Re-imposing the EU's fiscal rules from 2022 onwards could harm economic recovery.** These rules should be suspended indefinitely and then replaced with more sensible provisions. A replacement of the monetary financing prohibition with a more flexible approach should also be considered.

1. INTRODUCTION

The COVID-19 global pandemic is leading to large increases in public debt across the world, pushing many countries towards unprecedentedly high debt-GDP ratios. The crisis is also increasing the inter-linkages between governments and central banks, and between monetary and fiscal policies. Central banks in advanced economies had often accumulated large holdings of government debt during the previous global financial crisis and had generally stopped well short of selling them all off to bring their balance sheets back to their pre-crisis size. Indeed, the European Central Bank (ECB), which was struggling to meet its inflation target prior to the pandemic, had reactivated its asset purchase programme (APP) prior to the pandemic and was already purchasing large amounts of sovereign bonds. With the introduction of its pandemic emergency purchase programme (PEPP), the Eurosystem is now set to purchase over EUR 1 trillion of sovereign bonds on top of its already-considerable stock of bonds acquired via previous asset purchase programmes.

This paper discusses fiscal-monetary linkages in the euro area, focusing on the relationship between the ECB and national governments. The paper discusses two types of concerns that may arise from the current situation.

The first type of concern relates to the macroeconomic consequences of excessive fiscal debt in the Eurosystem. Should these high debt levels be a concern for the ECB? Could fiscal sustainability problems pressurise the ECB to pursue looser monetary policy leading to it failing to meet its primary objective of price stability? Concerns about so-called “fiscal dominance” are understandable. There are many historical examples of countries with high levels of fiscal debt seeking to reduce the burden of this debt via policies such as financial repression, exchange rate devaluation, central bank purchases of sovereign bonds and loose monetary policies. By engineering high inflation, these policies can help to “inflate away” a large public debt burden.¹ Indeed, during the decades that preceded the introduction of the euro, participant countries in the European Monetary System that had higher public debt levels tended to have systematically higher inflation rates.

The second type of concern relates not to public debt sustainability or threats to the independence of the ECB. Instead, they relate to the possibility that well-intentioned limitations written into the European Treaties may constrain the ability of euro area monetary and fiscal policy makers to respond appropriately to the global pandemic. For monetary policy, if the ECB continues pursuing its asset purchase programmes while also having its outright monetary transactions (OMT) programme available for use, it may reach the limits of the European Treaty’s prohibition of monetary financing, as interpreted by the European Court of Justice (ECJ). For fiscal policy, there are concerns that while the EU’s excessive deficit procedure rules have been suspended for 2021, their return could constrain governments from taking the appropriate responses to economic conditions in the coming years.

The paper is structured as follows. Section 2 outlines the economic rationale for the ECB’s OMT and asset purchase programmes and discusses the fiscal-monetary interaction issues they raise. Section 3 discusses the prohibition on monetary financing and examines whether legal restrictions could limit the ability of the ECB to continue its current policy of playing a large role in sovereign bond markets. Section 4 discusses prospects for fiscal sustainability in the euro area and whether unsustainable public debt is likely to present a threat to the ECB’s independence or to price stability.

I conclude that, in the current conditions, long-run fiscal sustainability should be low down the ECB’s list of worries. With monetary policy tools perhaps reaching a point of “diminishing marginal returns”,

¹ See Reinhart, Reinhart and Rogoff (2015) and Reinhart and Sbrancia (2015) for evidence on how high public debt burdens were managed in the past.

the present crisis calls for a co-ordinated monetary and fiscal expansion. The ECB's current policies, by providing additional fiscal space to governments, are fully consistent with its primary objective of price stability, meaning a return to inflation rates of close to 2%. Over the longer term, there is little evidence that the ECB will deviate from the role allocated to it by the European Treaties. If debt sustainability concerns emerge in the future for various euro area Member States, it is highly unlikely the ECB would undermine its commitment to price stability to prevent these defaults.

In contrast, this paper argues there should be greater concerns that the ECJ may at some point place specific limits on the Eurosystem's holdings of sovereign debt and that the fiscal rules that are written into the European Treaties will lead to unnecessarily tight fiscal policy in the coming years. The former issue may constrain the ECB's ability to pursue asset purchase programmes and force it into an uncomfortable choice between the short-run stimulus provided by these programmes and the longer-term existential threats to be addressed by the OMT programme. The latter issue threatens the euro area with another long period of austerity and slow growth at a time when the ECB could be more constrained than in the past.

2. FISCAL-MONETARY INTERACTIONS IN THE EURO AREA

In this section, I will discuss the role the Eurosystem is playing in sovereign debt markets, highlighting first the OMT programme announced in 2012 and then the asset purchase programmes introduced from late 2014 onwards. I then focus on potential legal restrictions and possible future developments in this area.

2.1. The outright monetary transactions (OMT) programme

2.1.1. Rationale for the programme

Charles Goodhart (1998) pointed out prior to the launch of the euro that it represented a profound break from the past because it de-linked national fiscal policies from money creation powers. To quote Goodhart:

“Historically, the nation states have been able, in extremis, (whether in the course of war or other—often self-induced—crises) to call upon the assistance of the money-creating institutions ... the participating nation states will continue to have the main fiscal responsibilities; but in the monetary field, their status will have changed to a subsidiary level, in the sense that can no longer, at a pinch, call upon the monetary authority to create money to finance their domestic national debt. There is to be an unprecedented divorce between the main monetary and fiscal authorities.”

Goodhart warned that this “divorce” was likely to cause difficulties during the inevitable crises that would beset the euro area and this prediction was correct.

Until 2012, the public and financial markets believed that the ECB would not play any role in preventing sovereign defaults. And indeed, while Jean-Claude Trichet complained bitterly about the Greek sovereign default as being a bad idea, the ECB did nothing to prevent it. This created a potential problem for euro area Member States: the possibility of self-fulfilling sovereign defaults.

One idea of how sovereign defaults occur is they happen because government debt finally rises above some specific unsustainable level. For example, a government that has a debt-GDP ratio of 140% with an average maturity of seven years may seek to run a budget deficit of 2%, so the debt-GDP ratio rises to 142%. It is possible that the government may fail to obtain funding for this 2% and decide to restructure its debt. In practice, however, the risk of sovereign default stems from rolling over the existing debt. So, in the example above, the government would each year be refinancing 20% of GDP of sovereign debt. It is this rollover risk, stemming from a “buyers strike” for rollover debt, rather than difficulty in financing the addition of new debt to the total, that represents the key risk for sovereign default.

The economics literature on sovereign default (for example Cole and Kehoe [2000] and Aguiar et al [2020]) has pointed out that in the absence of a central bank “safety net” for governments, there is room for multiple “self-fulfilling” sovereign default scenarios where investors don’t wish to purchase sovereign bonds because they believe other investors are not going to purchase them and thus there will be a default and anyone who purchases the bonds will make losses. There are good reasons to view the behaviour of sovereign bond markets for some euro area members during 2011/12 as examples of this kind of self-fulfilling crisis in action.

Ruling out this type of speculative “buyers strike” default appears to be the principal purpose of the ECB’s OMT programme, announced in 2012 as the practical implication of Mario Draghi’s famous “whatever it takes” speech. It is interesting to note that in an excellent recent speech discussing fiscal-

monetary interactions, ECB Executive Board member Isabel Schnabel (2020) outlines this exact scenario to justify the OMT programme. It is worth providing an extensive quote:

“financial markets are neither always rational, nor efficient. They can be prone to panic and instability. Acute periods of market stress can drive a considerable wedge between a country's cost of borrowing, as justified by economic fundamentals, and actual financial conditions, giving rise to self-fulfilling price spirals.

Such periods of turmoil – if left unaddressed – can quickly turn a liquidity crisis into a solvency crisis, giving rise to huge costs for society as a whole. Central banks are best placed to protect the public from such destabilising forces.

In the euro area, the ECB can only be a lender of last resort to financial institutions. The Treaty explicitly prohibits monetary financing of public debt.

But the ECB can, and should, provide liquidity when the market fails to coordinate and when the risk absorption capacity of financial market participants is severely constrained. Central bank interventions quickly instil confidence and allow the market to coordinate on the “good” equilibrium once the initial fog of panic and fear has lifted.

A prime example is the announcement of outright monetary transactions (OMT) in the summer of 2012. The “whatever it takes” speech by Mario Draghi constituted a coordination device and thereby calmed markets, whereby the euro area gained precious time for reforms”

The OMT programme has never actually been activated. If it were, I suspect there could be serious implementation problems surrounding the requirement to also activate a European Stability Mechanism (ESM)-overseen programme of structural reforms. However, there can be no doubt that this programme (and the important accompanying rhetoric from President Draghi) was crucial in keeping the euro together and inducing an easing in sovereign bond yields. This raises an important issue that we will discuss at greater length later: for the OMT programme's potential deployment to continue to be a credible influence on financial markets, it is necessary that markets believe the Eurosystem has the capacity to step into bond markets with large and sustained purchases of sovereign bonds on the secondary market.

2.1.2. Fiscal-monetary interactions

The creation of the OMT programme involved the ECB signalling its willingness to play a major role in euro area's fiscal policy environment. While the theoretical rationale of a central bank “safety net” is strong, the reality is the ECB has decided that it is willing to substitute its own judgements on debt sustainability for the judgements of financial markets and this has been a remarkable development.

Thus far, the programme has been very effective. Without ever being called into practice, the mere existence of the OMT programme has reassured financial markets that sovereign defaults are less likely and as a result this has made debt more sustainable. This has been a positive mutually reinforcing set of interactions but it should also be noted that these kinds of interactions can sometime work in the opposite direction. It is not impossible that at some point in the future, financial markets could perhaps lose faith in OMT, raising the possibility of sovereign default and endangering debt sustainability.

Another important fiscal-monetary interaction associated with the OMT programme is the question of how the Eurosystem's sovereign bonds acquired via an OMT intervention would be treated in the event of a debt restructuring. When introducing the OMT programme, the ECB assured markets that

*"it accepts the same (pari passu) treatment as private or other creditors with respect to bonds issued by euro area countries and purchased by the Eurosystem through Outright Monetary Transactions, in accordance with the terms of such bonds."*²

There were good reasons for this decision. If the ECB were to insist on a *de facto* senior creditor position, then losses for private sector bondholders would increase in any restructuring since the debt reduction would have to be spread across a smaller amount of bond holdings. In this case, the triggering of an OMT programme could make investors more concerned about holding a country's debt rather than less concerned. Mario Draghi acknowledged this in December 2014 when answering a question about future asset purchases by saying *"we don't want to cause unintended monetary policy tightening in choosing forms of seniority which would be counter-productive."*

In its 2014 *Gauweiler* ruling on the legality of the OMT programme, the ECJ acknowledged the ECB was taking on risk in purchasing sovereign bonds but that such risks were not illegal. The judgement included the following³

"It should also be borne in mind that a central bank, such as the ECB, is obliged to take decisions which, like open market operations, inevitably expose it to a risk of losses and that Article 33 of the Protocol on the ESCB and the ECB duly provides for the way in which the losses of the ECB must be allocated, without specifically delimiting the risks which the Bank may take in order to achieve the objectives of monetary policy. Furthermore, although the lack of privileged creditor status may mean that the ECB is exposed to the risk of a debt cut decided upon by the other creditors of the Member State concerned, it must be stated that such a risk is inherent in a purchase of bonds on the secondary markets, an operation which was authorised by the authors of the Treaties, without being conditional upon the ECB having privileged creditor status."

The key phrase here that suggests collective action clauses (CACs) may raise a legal issue is *"a debt cut decided upon by the other creditors."* By focusing solely on a "debt cut" imposed on the Eurosystem by other creditors, it could be interpreted that the ECJ has implicitly assumed that, once given the opportunity to vote on a potential restructuring, the ECB would be under an obligation to use a blocking minority position to prevent a debt restructuring. I will further explore the legal issues relating to this topic in the next section.

2.2. Asset purchase programmes

2.2.1. Rationale for the programmes

While the OMT programme has emerged as a special "European solution to a European problem", the other major source of fiscal-monetary interactions, the asset purchase programmes, are monetary policy programmes of the type that have been adopted in the United States, Japan and elsewhere. When each of these central banks have approached limits to their conventional policies of adjusting interest rates downwards to boost inflation, they have used their money creation powers to purchase financial assets.

² ECB (2012). "Technical features of Outright Monetary Transactions", Press release, 6 September 2012. https://www.ecb.europa.eu/press/pr/date/2012/html/pr120906_1.en.html

³ European Court of Justice (2015). Judgement of the Court (Grand Chamber) of 16 June 2015 in Case C-62/14. <http://curia.europa.eu/juris/document/document.jsf?jsessionid=60A4861245325B97FFF1DF45DFC3F00F?text=&docid=165057&pagelndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=2814192>

The channels through which these quantitative easing (QE) programmes affect the economy are still a subject for active debate in academic and central banking circles. However, the common perception that these programmes act by “pumping money into the economy” and boosting the supply of credit does not match with what most central bankers have believed the key mechanisms to be. A good example of consensus opinion about these programmes can be found in the recent presidential address to the American Economics Association given by Ben Bernanke (2020). Bernanke cites the proximate goal of QE as being to reduce long-term interest rates via two key channels: A “portfolio balance” effect through which boosting demand for long-term bonds raises their prices and lowers yields and a “signalling” effect by which asset purchases make forward guidance on keeping interest rates low more credible.

Bernanke famously joked *“The problem with QE is it works in practice but it doesn’t work in theory.”*⁴ The theory he was referring to was the classic finance theories which suggest that rational expectations, efficient markets and arbitraging investors should see all assets priced purely according to their expected risk and return. In such models, there is no “demand curve” for sovereign bonds and large-scale purchases of these bonds by a central bank should not have an impact. The empirical evidence favours Bernanke’s position that QE programmes have worked in practice to reduce bond yields but while efficient market theories of bond pricing may not be perfect, they are also not wildly wrong. It turns out to require enormous amounts of central bank bond purchases to achieve relatively modest reductions in long-term yields.

Bernanke (2020) summarises the evidence on the impact of QE from Ihrig et al. (2018) as follows:

“QE1 reduced the 10-year term premium by 34 basis points, the Maturity Extension Program reduced term premiums by an additional 28 basis points, and QE3 reduced term premiums yet more, by 31 basis points on announcement and more over time.”

In other words, about USD 3.5 trillion dollars worth of money created to buy long-term bonds managed to reduce long-term yields by less than one percentage point. Set against the success of the programme on its own terms in reducing long-term yields however, is the controversy that has accompanied such a dramatic expansion in the Fed’s balance sheet, with further expansion now occurring because of the additional purchases made by the Fed in response to the global pandemic.

2.2.2. Fiscal-monetary interactions

The principal focus of asset purchase programmes is to reduce long-term yields throughout the economy. They are not motivated by a specific desire to reduce the debt burden on sovereigns or make it easier for countries to issue more debt. However, it cannot be ignored that these programmes have clear fiscal effects.

The first fiscal impact is that lower bond yields reduce the cost of borrowing for governments. This allows governments to run larger debt levels while retaining the same annual interest cost.

The second fiscal impact is that the interest earned on debt held by a central bank ends up being repaid to the government as part of their annual profit dividend. These interest payments are the right hand of the public sector paying the left hand, which eventually passes it back. In the euro area, the asset purchase programmes are specifically designed so that each participating central bank buys the sovereign debt of its own government. For as long as this debt is held by the national central bank, the

⁴ CNBC (2014). “Bernanke cracks wise: The best QE joke ever!”, 16 January 2014. <https://www.cnbc.com/2014/01/16/bernanke-cracks-wise-the-best-qe-joke-ever.html>

underlying cost of interest on the debt is lower than the official “gross” figure for interest payment and the effective gross government debt overstates the burden on taxpayers.

One caveat to this point is that the Eurosystem pays for its sovereign bond acquisitions via credits to the accounts of Eurosystem credit institutions and these constitute interest-bearing liabilities. Viewed from a consolidated public balance sheet point of view, the public sector has merely swapped one form of debt to the private sector (government bonds) for another (deposit accounts that Eurosystem banks hold with their national central banks).

That said, the interest rate the Eurosystem pays on reserves is the bottom rate in its “corridor” system, so the average yield on sovereign bonds is generally higher than the cost of remunerating the reserves created to allow these purchases. And of course, the remuneration rate for deposits with the Eurosystem is currently negative, although the effect of this on the Eurosystem’s profits has been partially offset by the fact that some of the bonds being purchased have negative yields and by the recently introduced “tiering” policy.

3. LEGAL ISSUES RELATING TO MONETARY FINANCING

This section discusses some legal issues surrounding the issue of monetary financing in the euro area. Section 3.1 provides a general discussion of the issue while Section 3.2 raises a number of specific points to illustrate how the current path of the ECB's policies may lead towards the ECJ declaring the ECB to be in violation of the European Treaties. Section 3.3 discusses a potential future choice the ECB may face: picking between asset purchase programmes for monetary policy purposes and its OMT programme to backstop sovereign debt sustainability.

3.1. Interpreting the prohibition of monetary financing

The authors of the Maastricht Treaty that founded Economic and Monetary Union (EMU) understood that high public debt levels could place pressure on central banks to boost fiscal sustainability via expansionary monetary policy and high inflation. Indeed, there was generally a strong correlation during the European Monetary System era between inflation rates and public debt ratios. Those countries with higher public debt ratios tended to devalue more often within the system and thus had higher inflation rates.

With this in mind, the Maastricht Treaty provided a number of different ways to insulate the formulation of monetary policy from concerns about fiscal sustainability. These included making price stability the ECB's primary objective and making its governing body highly independent, prohibiting Eurosystem central banks from direct purchases of government bonds and, of course, strict fiscal rules limiting government debt and deficits.

In practice, fiscal developments have not gone as EMU's founding fathers envisaged they would. The fiscal rules have been regularly violated by both small and big countries, and by wealthy and less wealthy countries. As I will argue below, this isn't necessarily a wholly bad thing since the rules are badly designed, particularly for today's economic circumstances. However, there is a lot more public debt in issuance than the Treaty's writers imagined would be the case. I also suspect a lot more of that debt is held by Eurosystem central banks than they expected. While the Treaty did not explicitly outlaw secondary market purchases of sovereign bonds, it's also unclear that those who drafted the article envisaged large-scale accumulation of public debt by the Eurosystem as being acceptable.

The key article outlining monetary financing is Article 123 of TFEU which states

"Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the Member States (hereinafter referred to as 'national central banks') in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments."

This article makes clear what is illegal for national central banks: Directly providing money to national governments by purchasing bonds from them or providing them with a credit facility. So indirect secondary market purchases of these bonds are legal. This could be interpreted as meaning that all secondary market purchases of government bonds by the Eurosystem in all circumstances must be legal. The reality, however, is not quite so clear. The operation of this article depends upon how the law is interpreted by the EU's courts. In practice, the ECJ and national courts interpret European law not in a *literal* way but a *purposive* way, i.e. they consider what the original purpose of the legislation was rather than restricting themselves to precisely what the specific words say.

For this reason, Article 123 can place limits on ECB's actions such as asset purchase programmes if courts view these actions as running counter to what the article was intended to achieve. For example, the applicants in the *Weiss* case ruled upon by the ECJ in December 2018 appeared to think that the purpose of Article 123 was to ensure that central banks could not make it easier for governments to run deficits and so the public sector purchase programme (PSPP), by lowering yields on government bonds and thus reducing interest costs, must be illegal.⁵

The ECJ rejected this argument but their interpretation of Article 123 does appear to place some restrictions on asset purchase programmes and may restrict the ECB's plans for its EUR 1.35 trillion pandemic emergency purchase programme (PEPP). Specifically, the ECJ interprets Article 123 as intended to encourage Member States to follow a "sound budgetary policy". This phrase is used 11 times in the *Weiss* judgement, with the first and key reference being as follows (paragraph 107):

"the ESCB must build sufficient safeguards into its intervention to ensure that the latter does not fall foul of the prohibition of monetary financing in Article 123 TFEU, by satisfying itself that the programme is not such as to reduce the impetus which that provision is intended to give the Member States to follow a sound budgetary policy"

While not placing explicit limits on the PSPP, the *Weiss* judgement pointed to a series of features of the PSPP that the ECJ viewed as implying the policy is not undermining sound budgetary policy. For example, the ECJ cited the explicitly temporary nature of the programme, the fact that ECB was leaving a "blackout period" of time from when a bond was issued to when it could be bought by the Eurosystem and the lack of certainty that any private owner of a sovereign bond could have as to whether they could at some point sell their bond to the ECB. Finally, and perhaps most importantly, the *Weiss* judgement noted that the Eurosystem had decided not to purchase more than 33% of a particular issue of bonds of a Member State or more than 33% of the outstanding securities of one of those governments. In particular, the Court noted the continuing role played by market discipline (paragraph 141):

"in every case only a minority of the bonds issued by a Member State can be purchased by the ESCB under the PSPP, which means that that Member State has to rely chiefly on the markets to finance its budget deficit."

There is a hint here that while the ECJ approved of the 33% limit the ECB had imposed on itself, it may have been willing to go as far as approving higher minority holdings but perhaps not majorities.

3.2. Three questions about current ECB policies

Against this background, the ECB's actions since the start of the pandemic raise a number of issues in relation to potential monetary financing. I will highlight three: questions about the length of the asset purchase programmes, questions about the extent of the Eurosystem's holdings and questions about the meaning of "sound budgetary policy".

3.2.1. Length of the programmes

Since the introduction of QE programmes in advanced economies, there have been questions as to whether these programmes represent a form of monetary financing by reducing the net burden of public debt. An obvious example of this phenomenon is Japan, where the debt-GDP ratio is projected to be over 250% this year but ongoing purchases over a long period by the Bank of Japan mean the

⁵ European Court of Justice (2018). Judgement of the Court (Grand Chamber) of 11 December 2018 in Case C-493/17. <http://curia.europa.eu/juris/document/document.jsf?jsessionid=0EB01E126001D811CB91BDF8D53798F6?text=&dclid=208741&pageId=0&dclid=EN>

central bank owns an amount equivalent to over 90% of GDP, i.e. over one third of the debt issued. With the central bank's bond holdings being regularly "rolled over" and profits from these bonds being remitted to central government, the effective burden of this debt is much lower than the headline debt-GDP ratio makes it seem.

In the United States, the Federal Reserve regularly emphasised in the early years of its QE programmes that the programmes did not represent debt monetisation because they were explicitly temporary. For example, Bernanke (2012) summarised the Fed's position as follows

"By buying securities, are you 'monetizing the debt'—printing money for the government to use—and will that inevitably lead to higher inflation? No, that's not what is happening, and that will not happen. Monetizing the debt means using money creation as a permanent source of financing for government spending. In contrast, we are acquiring Treasury securities on the open market and only on a temporary basis, with the goal of supporting the economic recovery through lower interest rates. At the appropriate time, the Federal Reserve will gradually sell these securities or let them mature, as needed, to return its balance sheet to a more normal size."

In reality, the Fed decided in early 2019 that it would continue to operate an "ample reserves regime" which meant that its balance sheet would remain well above its pre-2008 size. The Fed's most recent purchases have brought its holdings of Treasury bonds to over USD 3 trillion. While the Fed holds a far smaller proportion of US federal debt than its Japanese equivalent (total Treasury debt outstanding is over USD 27 trillion), it is reasonable to ask whether previous reassurances that debt was not being monetised still hold true.

The Fed can point to the increased private sector demand for holding reserves as the reason why this apparent debt monetisation has occurred. That said, it appears that much of this increased demand for reserves stems from the way the Fed is implementing the Basel III liquidity coverage ratio regulation.⁶ Someone familiar with the literature on how post-World-War-2 debt burdens were dealt with could argue this approach to regulation resembles financial repression measures from an earlier era.

Against this background, and with the Eurosystem's balance sheet exploding, it may be fair for the ECJ in the future to question assurances from the ECB that its sovereign bond purchases represent an explicitly temporary regime. One could defend sustained and permanent purchases of sovereign bonds on the grounds that the implicit debt monetisation that has taken place in Japan and the United States has not in fact led to higher inflation but the legal barriers to monetary financing in the euro area are stronger than elsewhere and the ECJ may view the purchases as illegal at some point, even if they have not triggered rising inflation.

3.2.2. Size of the purchases

In the *Weiss* judgement, the ECJ approvingly cited the ECB's plans to impose the one-third issuer limits on itself. However, with the introduction of the PEPP, the ECB announced:

*"To the extent that some self-imposed limits might hamper action that the ECB is required to take in order to fulfil its mandate, the Governing Council will consider revising them to the extent necessary to make its action proportionate to the risks that we face."*⁷

⁶ See Cecchetti, Stephen and Kermit Schoenholz (2019).

⁷ ECB (2020). "ECB announces €750 billion Pandemic Emergency Purchase Programme (PEPP)", Press release, 18 March 2020. https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200318_1~3949d6f266.en.html

A quick look at the numbers indicates why the ECB is considering revising these limits. Via its original APP, the Eurosystem acquired about EUR 2.3 trillion of sovereign debt.⁸ Up to the end of September 2020, the PEPP had acquired EUR 565 billion in assets with the vast majority of this (EUR 510 billion) being sovereign bonds. This brings the Eurosystem's sovereign bond holdings to over EUR 2.8 trillion at the end of September, with almost EUR 800 billion in potential additional purchases remaining under PEPP's envelope of EUR 1.35 trillion.

The European Commission's April forecast projects total gross government debt in the euro area to rise from EUR 10.2 trillion at the end of 2019 to EUR 11.4 trillion at the end of 2020. This makes it clear that the one-third issuer limit is in sight for the total stock of debt being acquired. Since the total amount of purchases have been in proportion to the capital key rather than the amount of each type of debt in circulation, these limits are surely going to be surpassed for countries with large capital keys but relatively small debt levels. Moreover, to convince financial markets that it retains sufficient firepower, the ECB will not want to be in a position where it cannot increase its asset purchases or activate the OMT programme because it has hit issuer limit ceilings. So, the ECB will not want to avoid setting a specific figure for issuer limits over the next few years, in case markets will then see it as highly constrained if that limit is reached.

The legal issues surrounding these issuer limits are subtle. The one-third limits were designed to prevent the Eurosystem from obtaining a "blocking minority" position if a country proposes a debt restructuring which its bondholders then vote on via a CAC. There are concerns that a conscious decision to not use a blocking minority to prevent debt restructuring could be viewed as illegal monetary financing, since this would involve money created by the Eurosystem being ultimately used to write down the debt of a Member State.

This raises questions about the ECB's strategy in deciding to exceed the one-third issuer limit. It is possible the ECB may not believe that CACs would actually be the mechanism employed by future governments to restructure debt.⁹ For example, the Greek government restructured its debt via a unilateral act of the Greek parliament, and this may be the approach taken by future European governments when defaulting on debt. Another possibility is that, should a CAC-driven restructuring ever become a likelihood, the Eurosystem could sell enough bonds prior to the restructuring to get below the blocking minority limit. It would be likely that losses would be incurred on these sales but it would avoid the ECB taking a conscious decision to agree to a debt restructuring.

So the ECB can possibly argue that the Treaty does not prevent it from making unlimited secondary market purchases of sovereign bonds and that issues to do with debt restructuring can be dealt with later. However, the reality is that the ECJ's views on the meaning of Article 123 are very likely going to restrict how far the ECB can go with asset purchase programmes. With the self-imposed issuer limit gone, legal challenges to PEPP on monetary financing grounds may be more likely to succeed at the ECJ than previous attempts.

3.2.3. Sound budgetary policies

A final issue is whether the ECJ has a specific interpretation of the concept of a "sound budgetary policy" that Article 123 was intended to support. One obvious interpretation of sound budgetary policies are the deficit and debt reference values set out in the excessive deficit procedures. Future litigants may point to widespread failures to meet (or move towards) the reference values across the

⁸ ECB website – "Asset purchase programmes". <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html>

⁹ See Gelpern and Gulati (2013) for a sceptical discussion of euro area CACs from two of the leading academic experts on sovereign debt law.

euro area as being partially facilitated by the ECB's asset purchase programmes. The ECB can in turn point out that sufficient amounts of sovereign debt are still held by private investors and this still acts to maintain market discipline. But this is another area where the legal terrain may be trickier the next time the ECJ is asked to weight on asset purchases.

3.3. A difficult future choice?

An important issue this debate raises is whether the ECB's asset purchase programmes could be acting to undermine the effectiveness of its OMT programme. At present, there is no sign that financial markets view existing sovereign bond purchases as undermining OMT. However, it is not impossible the ECJ will at some point in the future rule that the ECB is reaching (or has gone beyond) the outer limits of its bond holdings being consistent with Article 123.

At that point, the ECB may ultimately be forced to decide which type of programme it must prioritise, I would recommend reducing sovereign bond asset holdings to maintain sufficient "firepower" so that large and sustained OMT-related interventions are still feasible and credible. As a monetary policy, the asset purchases have had a modest stimulatory effect but the availability of room to allow OMT purchases has had a more systemic effect in restoring confidence in euro area sovereign bond markets. As such, the OMT seems to be the more important of the two programmes.

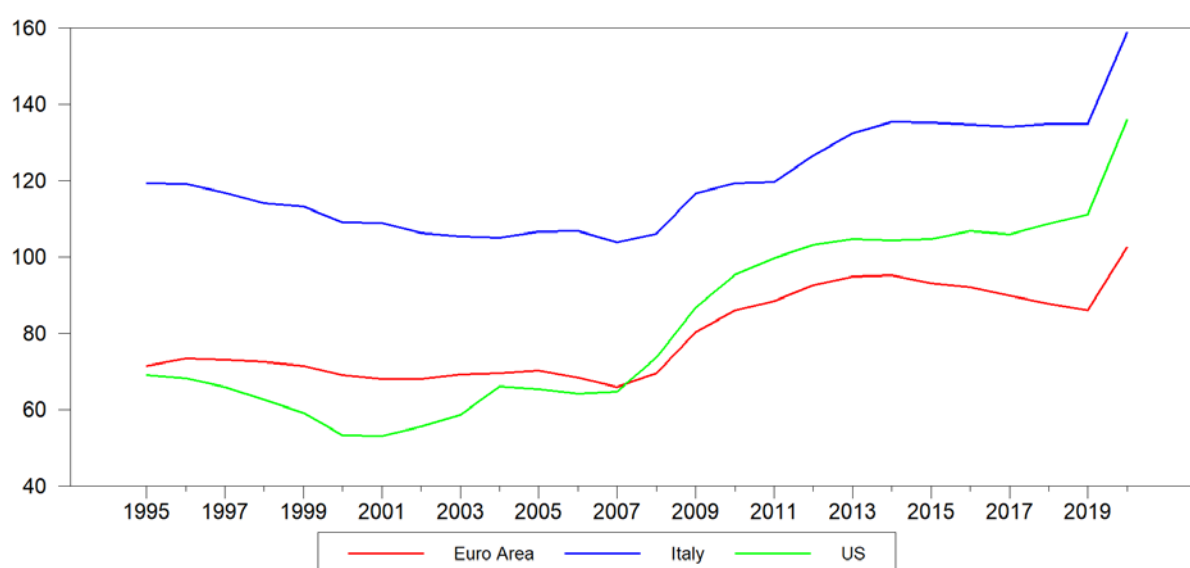
4. DEBT SUSTAINABILITY

This section examines sovereign debt burdens in the euro area and assesses their sustainability. Then it moves on to discuss the EU's fiscal rules, whether the ECB should be concerned about debt levels and then briefly discusses the possibility that sovereign debt problems could push the ECB to alter its monetary policies and undermine its pursuit of price stability.

4.1. Evidence on debt burdens

At first look, it may appear the debt situation in the euro area is now extremely serious. Debt-to-GDP ratios had not fallen much since the euro crisis and due to the pandemic, the European Commission is projecting the euro area's debt-to-GDP ratio to rise over 100% by the end of this year.¹⁰ Figure 1 shows the time series for the euro area debt-to-GDP ratio including the Commission's 2020 forecast as the last data point. For comparison purposes, it also includes the United States and Italy, the country generating perhaps the most concern in relation to sovereign debt sustainability, with its debt ratio projected by the Commission to be 159% this year.¹¹

Figure 1: Debt-to-GDP ratios in the euro area, Italy and the United States



Source: European Commission AMECO online database.

In the past, debt ratios as high as the euro area's current level—and certainly those as high as Italy's current level—would have triggered grave concerns about sustainability, particularly given the level of uncertainty surrounding the potential for economic recovery and the possibility of large government deficits over the next few years. However, these are unprecedented times in many ways and one crucial change relative to the past is that the cost of government debt is now extremely low. Figure 2 illustrates the Commission's estimates of the average interest rate being paid on these sovereign debts. This rate

¹⁰ You can expect this event, when it happens, to trigger commentary along the lines of “the euro area's debt is larger than its economy” with the implicit suggestion that this level of debt is somehow over-whelming. However, this ratio compares two quite different things—a stock (the debt) and a flow (the amount of income generated over a period of one year) and there is nothing special about the figure of 100%.

¹¹ Italy does not actually have the highest debt-GDP ratio. Greece's debt ratio is projected to be 196% at the end of this year but most of this debt is very long term, owed to the official sector and likely can be renegotiated without triggering a further crisis.

has trended down over time and, for 2020, it stands at 1.8% for the euro area as a whole and 2.5% for Italy, both lower than the average rate of 3.1% being paid by the United States.

The result of this low cost of debt finance is that the share of GDP being paid out in the form of debt interest is close to historically low levels. Rather than being under pressure from its high debt level, the share of debt interest paid by Italy has been relatively stable over the past decade at around 4%, far below the levels seen prior to Italy joining the euro, when the high debt burden was seen as a factor pressuring the central bank to raise inflation (see Figure 3). Also worth noting is that an increasing fraction of this interest is being paid to the Banca d'Italia.¹²

Of course, it is possible that macroeconomic circumstances could change and the cost of debt finance could rise again. However, this seems unlikely to happen for many years. One reason is the shifting composition of the stock of sovereign debt. The interest rates shown in Figure 2 are a weighted average of different interest rates associated with debt issued at various times in the past. Sovereign bond yields have plunged in recent years and many euro area countries now able to issue debt with negative yields (see Figure 4). This means that, increasingly, governments can pay off maturing debt securities with high interest coupons and replace them with very low-yielding debt. With the ECB's low interest rate policy likely to be in place for years, we can expect this average interest rate to continue trending downwards over the next few years.

Euro area governments have also been able to take advantage of calm conditions in the bond market to extend the average maturity of their outstanding debt from about 6.3 years in 2013 to 7.5 years now. (See Figure 5). This stretching out of the debt duration will help to reduce the extent of "rollover risk" that can occur over the next decade.

There are other longer-term structural factors that suggest it is unlikely we will see a debt sustainability crisis in the coming years. Even if monetary policy were to "normalise", it now seems very unlikely that we will see a return to the average interest rates that prevailed prior to 2008. For various reasons (demographics, weakening productivity growth, perhaps also rising inequality) equilibrium real interest rates—the real interest rates that will stabilise the economy—have dropped precipitously in recent years.¹³

For example, one can see how the members of the Federal Open Market Committee (FOMC) believe the equilibrium real interest rate for the US has declined in recent years. In January 2012, their median estimate of the long-run federal funds rate was 4.25%, implying an equilibrium real rate of 2.25%. By June 2020, however, their median estimate of the long-run federal funds rate had fallen to 2.4%, implying an equilibrium real interest rate of just 0.4%. Given the Fed's long-run inflation target of 2%, this suggests a long-run average policy rate of 2.4%.

The ECB Governing Council do not provide comparable long-run forecasts but the New York Fed publishes quarterly updates of the Holston, Laubach and Williams (2017) model's estimates of the equilibrium real policy rates for the euro area and that model's current estimate is that this rate is 0.6%, indicating an average policy rate in "normal times" of 2.6%. A gradual monetary tightening of this sort beginning a few years from now seems unlikely to trigger fiscal sustainability concerns.

More generally, as emphasised by Blanchard (2019), a crucial factor for thinking about debt sustainability is whether the average interest paid on sovereign debt (r) exceeds the growth rate of nominal GDP (g). Blanchard documents that the world's advanced economies appear to be

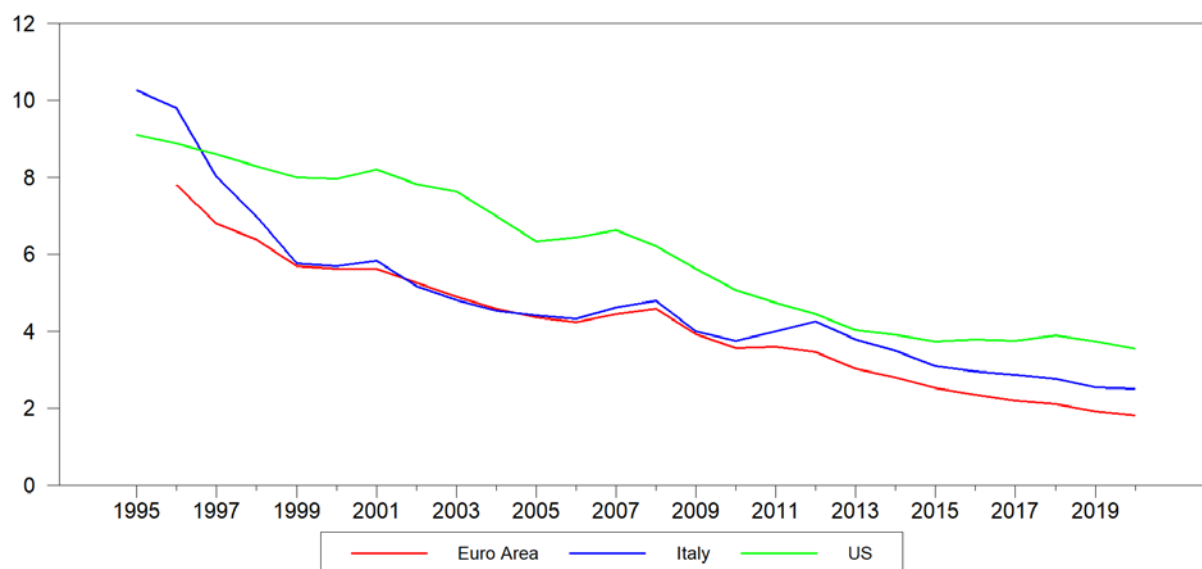
¹² Based on figures from the European Commission and the Banca d'Italia's 2019 annual report, I have calculated that the Banca d'Italia acquired 13% of the stock of outstanding Italian government bonds via the PSPP.

¹³ See Whelan (2018) for a discussion of these issues.

characterised by $r < g$, meaning the interest rate on sovereign debt is lower than the growth rate of nominal GDP. This turns much of the conventional wisdom about debt sustainability on its head: it allows governments to permanent run primary deficits and allows much higher levels of debt-to-GDP to be run without getting governments into difficulties.

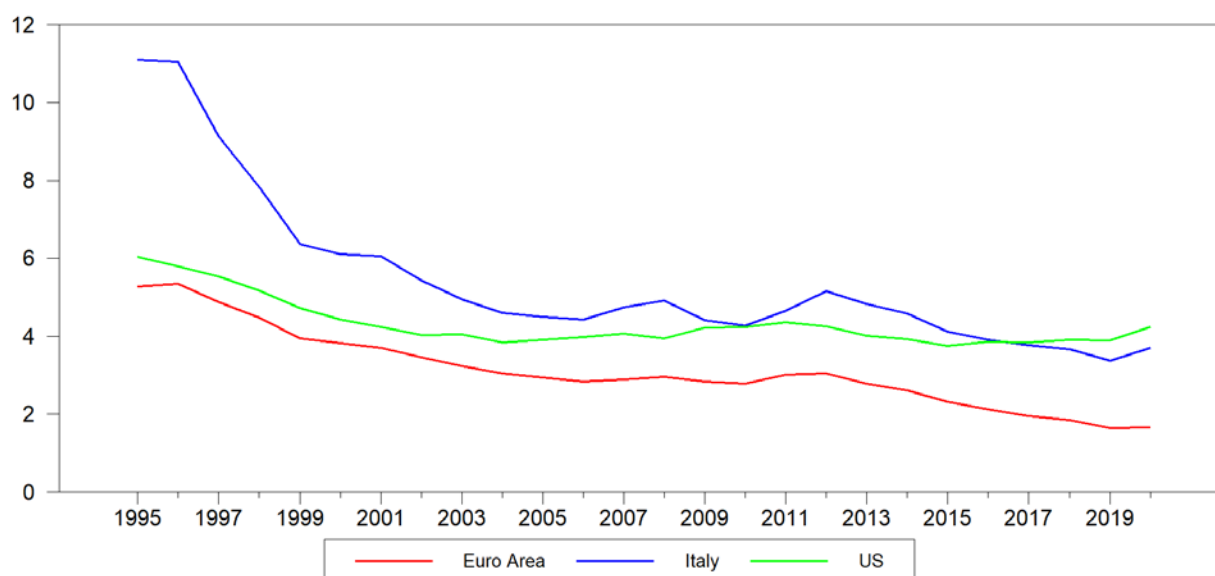
These conditions may all change at somepoint but, taken together, they suggest there are few reasons at the current moment to be concerned about debt sustainability in the euro area.

Figure 2: Average interest rate on government debt in the euro area, Italy and the United States



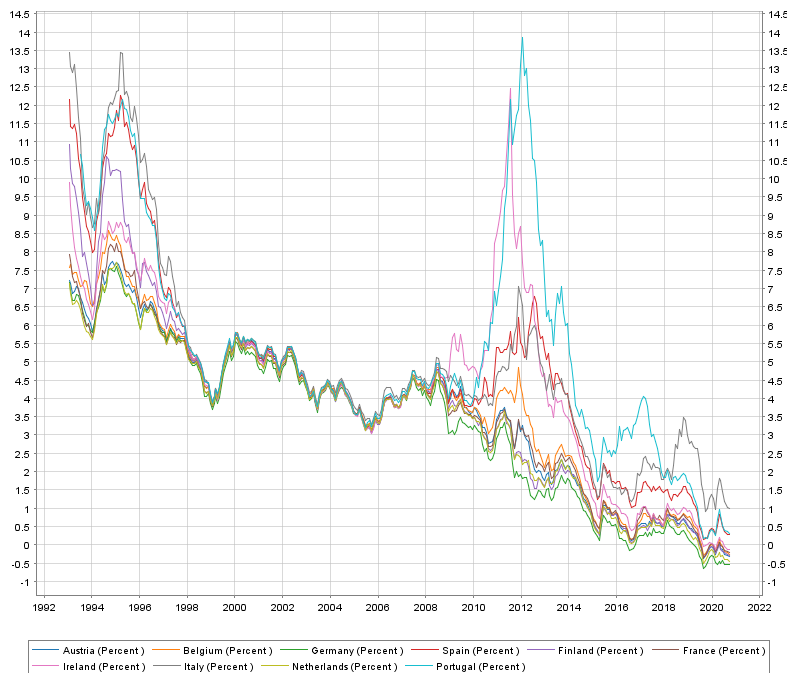
Source: European Commission AMECO online database.

Figure 3: Interest on public debt as a share of GDP in the euro area, Italy and the United States



Source: European Commission AMECO online database.

Figure 4: Current sovereign bond yields on ten-year government bonds for selected euro area countries



Source: ECB Statistical Data Warehouse.

Figure 5: Average maturity of euro area sovereign debt



Source: ECB Statistical Data Warehouse.

4.2. Implications for fiscal rules

The assessment just provided of the prospects for debt sustainability in the euro area will seem odd to those who are used to the ideas about fiscal sustainability described in the Maastricht Treaty's excessive deficit procedure. The Treaty explicitly mentions reference values of a 3% deficit limit and a recommended debt-to-GDP ratio of less than 60%. With those reference values in mind, surely fiscal

alarms should be going off? We are likely to see deficits well above 3% over the next few years in the vast majority of euro area members and almost all countries have debt ratios well in excess of 60%.

Thankfully, the problem here is with these arbitrary rules rather than with the underlying fiscal situation. Macroeconomics is not physics. Macroeconomic relationships alter and evolve as societal conditions change. There are no equivalents in macroeconomics of constants like the speed of light or Planck's constant. It is thus unfortunate that the European Treaties have lumbered the euro area's citizens with a set of rules based on two essentially irrelevant numbers.

There is nothing special about a 3% deficit. Indeed, the experience of the past decade or so shows us that it is sensible and desirable to run deficits above 3% of GDP if economic conditions are sufficiently bad. And there is definitely nothing special about a debt ratio of 60% of GDP. Even leaving aside the earlier points made about the low cost of sovereign debt in the current environment, in an era where Europe's population is ageing and so many people are saving for retirement and government bonds are generally the "gold standard" of safe investment, it makes no sense to place such a low limit on the quantity of government bonds that should be in circulation.

The fiscal rules have been suspended for 2021 but there needs to be a political debate about revising the Treaties to permanently replace them with a more sensible set of debt sustainability considerations. While fully recognising the difficulties that would be associated with obtaining Treaty changes of this sort, the recent proposals of Blanchard, Leandro and Zettlemeyer (2020) to replace rigid fiscal rules with a more flexible set of "fiscal standards" represent an important starting point in this debate.

4.3. Should ECB be concerned?

There are two separate issues when thinking about public debt burdens and the ECB. The first is whether the ECB should be concerned about current public debt sustainability. The second is whether concerns about debt sustainability would cause them to influence their monetary policy.

On the first issue, the arguments put forward here suggest the ECB should not be particularly worried about sovereign debt sustainability and, indeed, there is little in the recent public pronouncements of the ECB's officials to suggest they are concerned. This is important because it helps to maintain the positive reinforcement mechanism described earlier. As long as the ECB believes euro area Member States are solvent, financial markets will believe an OMT programme can be deployed and thus bet against sovereign default, maintaining low yields on sovereign debt.

Of course, ECB will have to continue monitoring fiscal developments. And when the Governing Council begins to raise its policy interest rates again, the ECB will need to assess the implications of such a path for fiscal sustainability. However, one can hope that a path of monetary policy normalisation will occur because of a sustained economic recovery which would also facilitate a natural improvement in the public finances without the need to undertake contractionary austerity measures.

On the second issue of whether debt sustainability concerns could cause the ECB to maintain overly loose monetary policy and threaten price stability, I think this is highly unlikely. As discussed at length in Whelan (2020), the ECB is a highly independent central bank, with this independence enshrined in the European Treaties in a number of different ways, including long terms for Governing Council members and a prohibition for politicians and other bodies from seeking to influence the Eurosystem in the performance of its tasks. I see the scenario in which political pressures lead to the Governing Council taking policy decisions incompatible with their primary legal objective of maintaining price stability as an unlikely one in the coming years.

Rather than be concerned about the ECB being excessively loose in its monetary policy, history suggests that its Treaty-based focus on price stability has made the ECB perhaps excessively

conservative. It took the ECB a long time to implement the kind of unconventional monetary policy measures that it is currently applying and these delays have likely contributed to its failure to meet its own definition of price stability in recent years. The recent round of forecasts from the ECB's Survey of Professional Forecasters show a median long-run expected inflation rate of 1.6%.¹⁴ Rather than being worried about high inflation due to the ECB yielding to fiscal dominance, the experts are concerned the ECB will continue to undershoot its inflation target.

¹⁴ ECB (2020) "The ECB Survey of Professional Forecasters: Fourth quarter of 2020", October 2020.
https://www.ecb.europa.eu/stats/ecb_surveys/survey_of_professional_forecasters/pdf/ecb.spf2020q4~dab5d8085d.en.pdf

5. CONCLUSIONS

The global pandemic is posing exceptional challenges to fiscal and monetary policy makers around the world. This is particularly true in the euro area where running a shared monetary policy combined with separate national fiscal responses creates additional challenges not shared by policy makers elsewhere.

The good news is that the policy response so far in the euro area has been relatively aggressive. The ECB has taken decisive actions and is clearly signalling its willingness to do more. The ECB has also been clear that its actions are consciously making it easier for governments to pursue active fiscal policies to combat economic weakness and that it supports an active fiscal response.

Moreover, we have thus far avoided a focus in either Frankfurt or Brussels on the need to apply the breaks and impose austerity once the economy starts to recover. Rather than be concerned about fiscal-monetary interactions, we should welcome that ECB is enabling a strong co-ordinated approach to an unprecedented threat to our economy. We are likely to be in a low-interest regime for a long time, so there is little reason to be concerned about debt sustainability in the euro area and concerns about debt should not prevent us responding adequately to this crisis. This approach is also fully consistent with the ECB pursuing its primary objective of restoring price stability by returning inflation to its target level.

The bad news is the current crisis is exposing the deficiencies in the policy architecture of the euro area as set out in the Maastricht Treaty. The Treaty's economic policy provisions are well intentioned and represent the thinking of leading economists and central bankers as of the early 1990s. But time moves on and so does thinking about economic policy. This paper has discussed how the euro area's rules on monetary financing are likely to act as a constraint on monetary policy achieving its goals and could possibly undermine the stability in sovereign debt markets brought about by the introduction of the OMT programme.

The EU's fiscal rules are also cumbersome, unnecessarily complex and overly restrictive. While the rules have been suspended for 2021, their reinstatement for 2022 would represent a threat to economic recovery. The ECB is perhaps approaching the limit of the set of expansionary tools that it considered compatible with the Treaties: policies such as "helicopter drops" which are likely to be viewed by the ECB and courts as violating the monetary financing prohibition. Given this, it is crucially important that expansionary fiscal policy be used as long as the pandemic threatens the economy and that we avoid a return to the kind of fiscal austerity that triggered a double-dip recession and put the euro into an existential crisis ten years ago. The rules should be suspended indefinitely and then replaced by more sensible provisions.

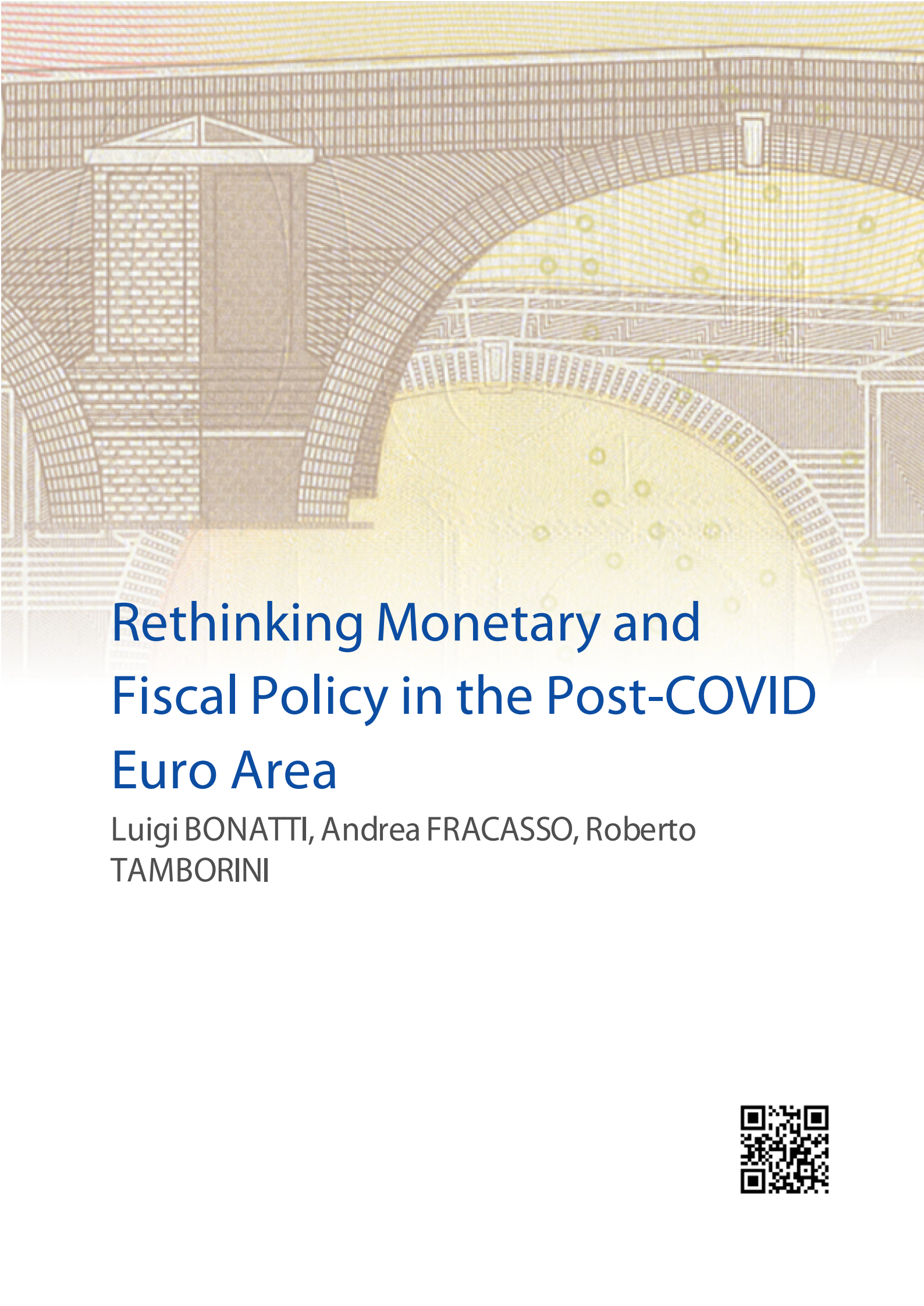
Of course, reforming the euro area's economic rules will require a Treaty change and such change will be hard to obtain, particularly changes focused on core economic policy issues. But unless the underlying economic rules governing the euro are improved, questions about the sustainability of the euro project are likely to return.

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Rethinking Monetary and Fiscal Policy in the Post-COVID Euro Area

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Abstract

In the post-COVID environment, the ECB might face many and related trade-offs associated with the risk of being dominated by policy concerns other than price stability. Most of these risks could be reduced by a revision of the euro area governance framework, the creation of a new mechanism to provide financial assistance, and the implementation of a one-off intervention to reduce the exposure of the Eurosystem towards the euro area sovereign debts.

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LIST OF ABBREVIATIONS

APP	Asset purchase programme
ECB	European Central Bank
ESCB	European System of Central Banks
ESM	European Stability Mechanism
EU	European Union
IMF	International Monetary Fund
NGEU	Next Generation EU
OMT	Outright monetary transactions
PEPP	Pandemic emergency purchase programme
SGP	Stability and Growth Pact
ZLB	Zero lower bound

EXECUTIVE SUMMARY

- The pandemic and the measures against the diffusion of the virus have worsened considerably the economic and social fabric of most euro area countries. While the European Central Bank (ECB) has intervened to support financial markets with ample liquidity provisions, the fiscal authorities have implemented a massive fiscal response that will increase the outstanding sovereign debts for many years ahead.
- **These circumstances have modified the monetary-fiscal nexus in the euro area so profoundly that the ECB might face various trade-offs in the future.** In particular, monetary policy in the euro area risks being dominated by concerns that are at odds with price stability. This risk is most evident in an economic environment characterised by high outstanding debts and large fiscal deficits.
- **Three sources of such risks are prominent in the euro area: inflation, financial dominance, and tapering.** If inflation will grow, the ECB's policy reaction may be constrained by the effects of monetary tightening on national debt sustainability. Financial instability disconnected from fundamentals may trigger self-enforcing processes of flight to quality that threatens the integrity of the euro area, forcing the ECB to intervene. The reduction of the assets purchased through the asset purchase programme (APP) and pandemic emergency purchase programme (PEPP) may create problems for the highly indebted countries that need to roll over their debts, large fractions of which are held by official holders, thus implicating them into a highly politicised game concerning financial assistance and debt restructuring.
- **These risks impinge upon the functional independence of the ECB, and the transition from the phase of monetary-fiscal joint stimuli to a new equilibrium with price and debt stability.** Most of them could be reduced by a **revision of the euro area governance framework**, aimed at breaking the doom loops among sovereign governments, markets and the ECB, and at creating conditions for a careful calibration of tapering on both the monetary and the fiscal side.
- **Key to this aim will be the removal of a considerable amount of sovereign assets from the Eurosystem's balance sheet** by means of the creation of a peer supranational fiscal authority as aggregator and manager of the EU sovereign debt created for certified pandemic necessities, endowed with political legitimacy and financial capacity.

1. INTRODUCTION

In a recent interview, the President of the European Central Bank (ECB), Christine Lagarde, stressed that *“we should guard against the premature withdrawal of these support measures”* (Lagarde, 2020a), referring to the pandemic emergency purchase programme (PEPP) and to the substantial easing of the conditions under which banks can obtain liquidity under the ECB’s targeted longer-term refinancing operations. Philip Lane, member of the ECB’s Executive Board, further specified that *“net asset purchases will continue until at least the end of June 2021 and, in any case, until the Governing Council judges that the coronavirus crisis phase is over; reinvestment will be maintained until at least the end of 2022 and, in any case, the future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary policy stance”* (Lane, 2020c).

The resurgence in infection rates that is going on in Europe since the end of summer, with the consequent effect that this is having on the continent’s economies, is reinforcing the expectation that, in the euro area, the “divine coincidence”¹ between sustaining economic activity and preserving price stability that is holding in the current environment will be preserved for quite a long time. Indeed, *“Especially in an environment of low inflation and low interest rates, monetary and fiscal policies have the potential to reinforce each other. In particular, in relation to the price stability mandate, the scale of the monetary policy adjustment required to neutralise the negative pandemic shock to inflation dynamics and sustain the subsequent convergence to the inflation aim depends on the extent of the fiscal support for the economic recovery”* (Lagarde, 2020a). Such expansionary conduct has received indirect support by the International Monetary Fund (IMF) which, in its latest Fiscal Monitor report, called governments not to withdraw lifelines too rapidly and scale up public investment, thereby exploiting favourable financing conditions ensured by the central banks’ liquidity provision and asset purchases (IMF, 2020b).

Probably, the expectation that Europe’s new COVID flare up will soon induce the ECB to implement further measures to support the euro area economy, and possibly announce a prolongation of the extraordinary programmes underway, has played some role in steadying the reduction of interest rate spreads between high-debt countries’ sovereigns in the euro area and the German bund that was triggered by the announcements of the PEPP and the Next Generation EU (NGEU) plan.

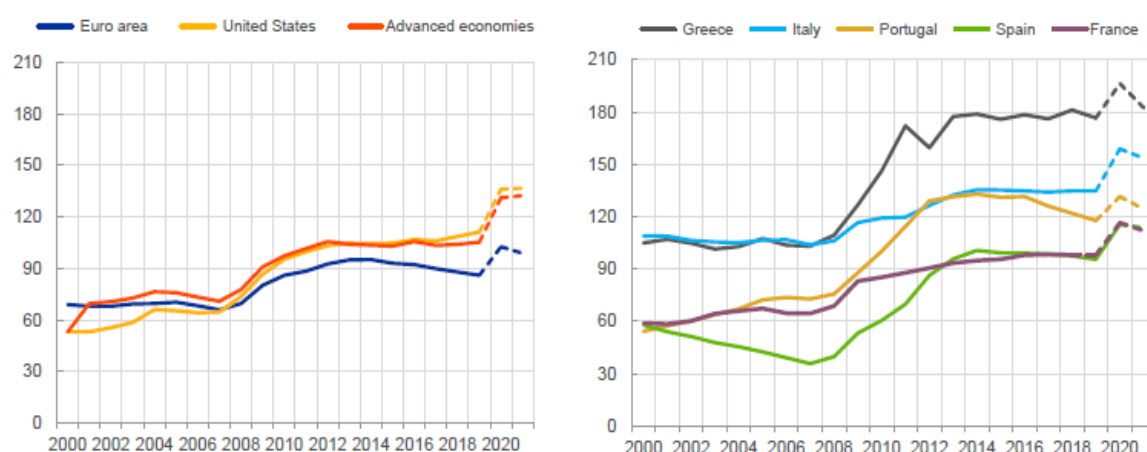
This notwithstanding, some scholars (e.g. Lengwiler and Orphanides, 2020) have argued that the ECB is too slow and prudent in adjusting its inflation target to the new environment created by COVID-19, especially after the Fed has announced last August at the Jackson Hole Symposium that it will allow inflation to overshoot its target temporarily, so as to make up for shortfalls and ensure that it averages 2% over the long term. The ECB’s stance has contributed, according to its critics, to anchor medium-term inflation expectations for the euro area to an unacceptably low 1.3% and to cause an appreciation of the euro (almost 8% against the dollar in the six months following the outbreak of the pandemic in Europe at the end of February 2020, and more than 6% against the yuan in the same period), which is not justified by relative growth fundamentals (IMF’s growth projections for 2020 are -8.3% for the euro area, -4.3% for the US and +1.9% for China) and does not facilitate the recovery of the euro area. Apparently, indeed, markets have not been particularly impressed by Mr Lane’s remarks pointing out that the ECB intends to regain momentum to inflation dynamics, in order to accelerate the convergence towards the higher path along which expected inflation was moving before the pandemic shock (see Lane, 2020b). And also the recent statements by President Lagarde did not dissipate the impression that, in its strategy review, the ECB will not go as far as the Fed to indicate that its new target will be inflation at 2% only as a long-run average; rather, the ECB might limit itself to

¹ The introduction of this expression in this context is usually attributed to Blanchard and Galí (2007).

restate its “medium term” orientation with limited room for temporary overshooting and catching-up: *“the **horizon over which price stability should be achieved** [emphasis in the text]...is captured by the ECB’s “medium term” orientation. This forward-looking orientation reflects traditional and well-established principles of prudent monetary policy, which is consistent with the notion that monetary policy works with a lag and can influence inflation over the medium term rather than the near term. But within the ECB’s framework, the medium-term orientation has also been a way for the Governing Council to take into account what is happening in the real economy, including employment. We have a hierarchical mandate with price stability at the top. But the medium term, which is a flexible concept, allows us to avoid unnecessarily constricting jobs and growth in the event of a supply shock which temporarily pushes up inflation and generates an economic slump”* (Lagarde, 2020b).

ECB officials are well aware that the post-pandemic environment will be a world of possibly permanently higher levels of public debt, with the euro area public debt-to-GDP ratio that is projected by the IMF (2020a) to reach 101.1% in 2020 (from 84.0% in 2019) and then to decline to 94.3% in 2025, and with growing disparities in public debt levels across euro area countries (see Figure 1): Germany’s public debt-to-GDP ratio, for instance, is projected to reach 73.3% in 2020 (from 59.5% in 2019) and to fall again to 59.5% in 2025, while Italy’s public debt-to-GDP ratio is projected to climb to 161.8% in 2020 (from 134.8% in 2019) and to decline to 152.6% in 2025. Isabel Schnabel, member of the ECB’s Executive Board, recently wondered whether higher government debt ratios with substantial heterogeneity across euro area countries may lead to fiscal dominance – defined as a situation in which monetary policy is conditioned by governments’ financial needs – and therefore jeopardise central bank independence. A concept, Schnabel clarified, that for the ECB means its ability to pursue *“its monetary policy objectives, as defined by its mandate in the European Treaties, without being constrained by other considerations”* (Schnabel, 2020). Referring to the evidence concerning the recent past, she concludes that the surge in debt after the global financial crisis, as well as during the current COVID-19 crisis, has not deviated the ECB from pursuing price stability, so much so that *“too low rather than too high inflation remains the main predicament of our times”* (Schnabel, 2020).

Figure 1: General government gross debt (% of GDP)



Source: Schnabel (2020).

Hence, according to Ms Schnabel, the concern that high debt in some euro area countries could induce the ECB to divert from its mandate of price stability is substantially groundless. This is consistent with the conviction expressed by Blanchard (2019) and Blanchard et al. (2020) on the eve of the pandemic that, in times of very low interest rates, the space for conducting expansionary fiscal policies is wider,

while the probability of a debt crisis gets smaller, thus reducing the risk that the ECB could be subject to pressures in order to monetise the debt of the countries in trouble. However, the legacy of the pandemic, both in terms of the long and painful process of restructuring of the real economy and of the large private and public debt overhang, can make some euro area countries very vulnerable, with the possibility of severe negative spillovers for the other euro area countries and for the integrity of the euro area as a whole. In such circumstances, the ECB would face serious dilemmas as its actions (and lack thereof) would have profound consequences for the stability and integrity of the monetary union, and not simply for the future path of inflation: concerns of this kind, clearly, go well beyond what a technocratic institution is supposed to address, as they have fundamental implications on the euro area governance framework and on the very existence of the monetary union (see Bonatti et al., 2020). In our view, this calls for political decisions on the part of the euro area Member States to strengthen the resilience of the area and to shield the ECB from responsibilities that, *sic stantibus rebus*, are outside its mandate.

The remaining of the paper proceeds as follows. In section 2, we address the monetary-fiscal nexus in the euro area after the anti-pandemic measures recalled above, with an emphasis on the trade-off that the ECB might face once inflation will return to higher levels, due to the **risks of fiscal dominance** in an economic environment characterised by high outstanding debts and large fiscal deficits. section 3 is devoted to the discussion of an additional trade-off associated with a different form of dominance, that we dub “**financial dominance**” for the sake of simplicity; we argue that the ECB may be expected to intervene massively in the markets every time that endogenous self-enforcing expectations create massive portfolio rebalancing effects and “flight to safety” phenomena, in turn generating divergent developments in sovereign credit spreads not motivated by fundamentals, capable to threaten the integrity of the euro area. Subsequently, in section 4, we offer our insights on the direction in which to go for strengthening the euro area and the EU as a whole. We argue that the right time for **building a more solid safety net** to protect the euro is now, when the COVID-19 emergency helps smooth the differences in interests and visions across the various countries, which are bound to become more acute once this crisis will be over. In any case, the political compromises that are needed to build such a net are made problematic by the fact that no actor here can negotiate under the veil of ignorance. The awareness that, without a more steady foundation, the euro can be soon seriously at risk may help reaching these compromises.

2. MONETARY-FISCAL INTERACTIONS AND THE EURO AREA: A CONCEPTUAL FRAMEWORK

2.1. The surge of monetary policy dilemmas and the crisis of narrow mandates

Monetary and fiscal policy, the two main arms of macroeconomic policy, belong to the same body, the State. Nevertheless, in advanced democratic countries, they are assigned to different institutions. Fiscal policy is directly enacted by governments expressed by elected representatives of popular will, whereas monetary policy is delegated to an independent authority managed by a techno-structure. This institutional separation between the fiscal and the monetary domain that we observe nowadays is the outcome of a long history of "trials and errors", and of the advent of economic doctrines advocating the subtraction of "money", namely the preservation of its purchasing power, from the direct control of political power.² In this perspective, legal independence is fundamental, though "*legal central-bank independence does not confer functional independence*" (Canzoneri et al., 2002), i.e. its ability to pursue its priority mandate when due. However tight the institutional separation may be, monetary and fiscal policy remain deeply intertwined because they exert reciprocal side effects. Even conceptually, let alone down to the ground, it is hard to draw a clear-cut dividing line (or wall).

On the one hand, the central bank does need a solvent fiscal authority to achieve its objectives, as it would not manage to stir interest rates and manage liquidity, and ultimately affect price developments, could it not count on well-functioning markets, safe assets and a fiscal backup for the commercial banking system. On the other hand, fiscal policy can be jeopardised during liquidity and banking crises, as well as in the face of vicious loops of self-fulfilling expectations, could it not count on a lender of last resort for commercial banks and a market stabiliser endowed with potentially unlimited resources. Even in normal times, fiscal and monetary policy affect each other, directly and indirectly, the former having potential consequences on central bank independence, and the latter exhibiting non-negligible quasi-fiscal effects.

The euro area presents further layers of complexity. First, the euro is "money without a State". The single central monetary authority faces nineteen fiscal sovereigns, whereas these cannot issue their own fiat money – a distinctive sign of national power. Second, by statute, the ECB can only aim at aggregate euro area targets, in the first place the inflation rate of "close to but below 2% per year", but no equivalent euro area fiscal authority exists. Third, as regards business cycles stabilisation, the division of labour between central bank (common monetary policy) and Member States' governments (national fiscal policies), wants the former committed to accommodating euro area-wide "symmetric" shocks, and the latter taking care of local "asymmetric" shocks. However, as a consequence of structural differences among member countries, monetary policy inevitably suffers from the "one-size-does-not-fit-all" problem, thus becoming itself a source of asymmetric shocks. Fourth, the theory of "optimal currency areas" also prescribes that governments should enjoy as much fiscal space as necessary. By contrast, the euro area legal framework sets limits to governments' fiscal space, both in terms of yearly borrowing and of debt accumulation, in addition to exposing them to market discipline with no safety net. Thus, *de facto*, as the ECB assigns high priority to the euro area inflation target, governments are pressed to assign high priority to national debt stability (if not reduction) (Corsetti et al., 2017; Jarocinski and Mackowiak, 2017; Losada, 2020).

² Indeed, this idea goes back to the XIX century, or even earlier, when it was put forward by tying money supply to the reserve of gold.

This arrangement of the monetary-fiscal nexus in the euro area owes much to the economic, political, and doctrinarian climate at its conception. In the early 1990s, the western world was entering in the long wave later dubbed Great Moderation (Stock and Watson, 2002). In this perspective, where price stability and sound public finances were seen as the sole effective contributions that public (macro)policies could give to growth and employment (e.g. ECB, 1999, pp. 39-ff.; Lucas, 2003),³ the majority of scholars was convergent to conclude that the euro area setup appeared anomalous for the good, since it seemed apt to grant ultra-protection to central bank independence and "dominance" in pursuing inflation targeting in a context of limited activism on the fiscal side (see e.g. Beetsma and Giuliodori, 2010, for the review of the relevant literature). *"The euro has been built on the principle of monetary dominance"* (Schnabel, 2020, p. 1). However, doubts and criticisms were continuously raised, with particular regard to risks of procyclical national fiscal policies, endemic inability to counteract recessions, and eventually threats to the integrity of the euro area.

When the euro was born at the turn of the century, the age of Great Moderation was fading away. The 9/11 2001 terrorist attack in New York threw the world into a recession with significant repercussions on the euro area economies, paving the way to the first open breach, and call for reform, of the Stability and Growth Pact (SGP) by France and Germany. The result was a technical complexification of the Pact with a view to depurate budgetary figures from cyclical components, and grant governments larger fiscal space in downturns. Sovereign debt levels received limited attention in the reform of the SGP (Canzoneri et al., 2002), probably because outstanding debts were taken as a legacy from the pre-euro periods that economic growth and fiscal discipline (whether induced by rules or market pressure) would have gradually reabsorbed.

However, the "climate change" was much deeper than it appeared. By the end of the decade, the Great Moderation turned into the Great Recession, the worst global crisis ever since 1929. Greece's failure to abide by the fiscal rules after admission to the euro area, and the turmoil in global financial markets, brought debt sustainability at the centre of attention. This led, amid the crisis, to another reform of the SGP to strengthen the rules regarding sovereign debt and to address macroeconomic imbalances and needed structural reforms. Yet, the results of such reforms were not entirely convincing with respect to previous criticism (European Fiscal Board, 2019; Eyraud et al., 2017; Pisani-Ferry, 2019). One decade later, COVID-19 caught the world, and the euro area in particular, still muddling through the consequences of the previous crisis, again with countries exhibiting high levels of public debts and poor growth prospects, and a background of low inflation and negative interest rates on the few financial assets considered as safe. The consensus *agenda* of policymaking – in the Latin meaning of "what has to be done" – changed profoundly, first under the pressure of events and then in their systematisation within a new conceptual framework (see e.g. Blanchard et al., 2010, among many others). The latter now seeks to accommodate the following stylised facts.

Large crises, though relatively infrequent, are possible. They do not necessarily erupt because of political misdoings, and they may be rapidly magnified by self-enforcing and self-fulfilling expectations fed, in the euro area, by the recognition of the incomplete and politically contentious framework of economic governance. In these events, conventional monetary policy (i.e. management of the money market rates) may quickly become ineffective as the policy rate falls to its zero lower bound (ZLB) with little relief for the economy. Next come "unconventional" monetary policies, an array of tools that, by and large i) increase liquidity supply to the banking sector and, indirectly or directly, to the private sector, and ii) contain the risks of overshooting in financial markets due to self-fulfilling expectations. Going further, re-activation of the fiscal arm, possibly in coordination with the monetary one, is

³ A complementary contribution might be necessary at the "micro" or "structural" level in order to bring markets as close as possible to the free competition ideal.

contemplated, particularly because of the low interest rate environment (Christiano et al., 2011; Bonam et al., 2020; Gali, 2020; Miyamoto et al., 2018; Roulleau-Pasdeloup, 2018).

Coordination between the two arms of economic policy has two dimensions. One is due to the fact that in deep recessions, in particular when demand-driven, monetary and fiscal policy are synergic activation of both reduces the extent of use of each. The other is that, in order to maximise synergy, the public sector is eligible as recipient of quantitative easing measures of the central bank, which in practice means monetary financing of budgetary deficits and refinancing of maturing debt at very favourable terms. Notably, the reasons that in the previous age warned against trespassing the threshold of conventional monetary policy have not been forgotten. Yet, they are now set in a broader framework and weighed against the urgency, need and benefit of restoring economic activity first.⁴ As mentioned, in the end, no “pure” monetary policy can be conducted when the economy is in shutters, sovereign solvency is at jeopardy because of the size of the economic recession, and the very concerns for an inactive monetary policy exacerbate the financial turmoil.

In the aftermath of the Great Recession, major advanced countries such as the United States, the United Kingdom and Japan saw their policy authorities swiftly covering all the way from conventional monetary policy to monetary-fiscal coordination. This was not the case with the euro area, where the ECB engaged itself in some unconventional programmes only after 2012 and in quantitative easing in 2015, while the frame of national fiscal policies was tightened and tilted towards debt consolidation first. Some scholars argue that this divarication of the policy *agenda* in the euro area from the evolution undertaken in the other countries is to some extent responsible for the divarication in its macroeconomic performance too (e.g. (De Grauwe, 2015; Corsetti et al., 2017; Jarocinski and Mackowiak, 2017). “*Precisely at a time when the central bank's policy rates are expected to stay at or close to the lower bound for an extended period of time, monetary and fiscal policy together can have a sizeable impact on the economy. [...] Achieving and maintaining an accommodative fiscal policy stance has proved difficult in the EA, in the current institutional arrangements*” Corsetti et al., 2017, pp. 4, 7).⁵ Notwithstanding such consensus, “the battle of ideas” (Brunnermeier et al., 2016) was not over, as a number of scholars raised concerns that the ECB’s sovereign bond purchase programme and the creation of the European Stability Mechanism (ESM) could risk removing the incentives for national authorities to undertake the structural reforms needed to restart growth, especially in the vulnerable countries (Benassy-Quere et al., 2018; Sinn, 2018). As pointed out by Coeuré (2017), “*convergence is also a political prerequisite to engage in a discussion on any new public risk-sharing mechanisms*”.

A first, more tangible, turn of the euro area monetary-fiscal policy setup towards the new consensus outlined above is now taking place under the scourge of COVID-19, with a new wave of asset purchasing programmes by the ECB (APP and PEPP), the temporary suspension of the national budgetary rules, and the creation of an entirely new, truly common fiscal arm with the NGEU (as to the relationship between the pandemic and these policy measures see Bonatti et al., 2020). These extraordinary measures aim at addressing several concerns: allowing the national fiscal authorities to finance the large current deficits necessary to stabilise the economy, while preserving debt sustainability and preventing self-defeating capital flights within the euro area; fostering structural reforms and economic growth in the medium term; ensuring the transmission of the monetary stimulus to all economic agents and jurisdictions. Clearly, in this setting, the sustainability of the

⁴ An example of this balancing exercise for the euro area is provided by our previous Monetary Dialogue paper, Bonatti et al. (2020).

⁵ Such a position gained consensus also because of the strong backing of several economists at the IMF (IMF, 2017; Cottarelli, 2016). Berger et al. (2018), for instance, argued that the weak credibility of the no bailout rule was due to a time-consistency problem that greater fiscal risk sharing could ameliorate, if accompanied by regulatory reforms aimed to avoid sovereign-bank spirals (Mody and Sandri, 2012; Obstfeld, 2013).

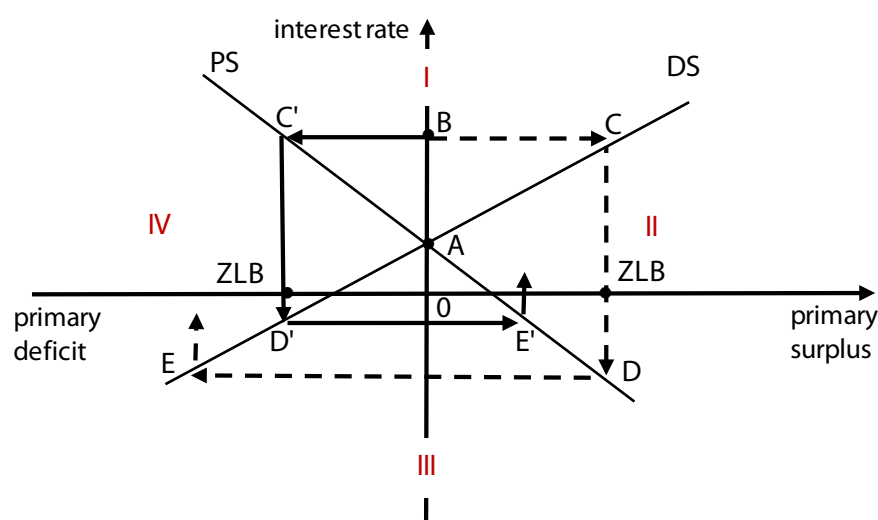
sovereign debt becomes an *ex ante* condition for effective fiscal and monetary stimuli, more than an *ex post* evaluation in an exercise of multilateral surveillance, such as the European Semester and the IMF consultations. If debt sustainability becomes a constraint for effective policymaking, it indirectly becomes, especially in bad times, one of the objectives to achieve with all the instruments and tools at hand, monetary as well, when fiscal consolidation is impossible and counter-productive (McManus et al., 2019).

Before focusing on the actual and prospective monetary-fiscal interactions in this new economic and political context, it may be useful to provide some simple conceptual tools.

2.2. A guide to monetary-fiscal interactions

As said above, the essential policy challenge of the euro area after the legacies of the crisis of the 2010s, and to a greater extent of the pandemic, can be seen in securing both **price stability** and **debt stability** (European Parliament, 2020). While little disagreement exists that both are important for welfare, problems arise when pursuing one goal is in conflict with the other, that is when the so-called **policy trade-offs** arise. In general, this is due to the fact that each policy affects both objectives creating **negative spillovers**, i.e. what is good for one objective may be bad for the other. Ignoring this fact may lead to largely suboptimal outcomes. How can these situations be addressed? What is the best solution, if any? What role has to be played by the policymakers?

Figure 2: Four scenarios of monetary-fiscal interactions around price stability (PS) and debt stability (DS)



Source: authors' elaborations on Mason and Jayadev (2018).

Note: Fiscal variables are expressed as GDP ratios. Scenarios: I) rising debt and falling inflation; II) falling debt and falling inflation; III) falling debt and rising inflation; and IV) rising debt and rising inflation.

In order to organise ideas, let us first think about the euro area as a single sovereign country, whereas its peculiarities will be addressed subsequently.⁶ The central bank sets the monetary interest rate, and the government is responsible for the budget of the public sector or, more precisely, the primary budget net of interest payments on outstanding debt, which are taken as given by the government.

⁶ One may think of the ECB *vis-à-vis* identical Member States aggregated in a single representative unit.

Monetary-fiscal policy interactions are reproduced diagrammatically in Figure 2, where the fiscal variables are thought of as ratios to GDP (our re-elaboration drawn on Mason and Jayadev, 2018).

According to basic macroeconomic principles, the interest rate set by the central bank ("the" interest rate for short), providing the risk-free floor on which the whole array of market interest rates is based, affects the inflation rate through its influence on interest-sensitive aggregate demand, for a given production capacity, as well as the interest payments in the public budget. At the same time, public budget imbalances affect the evolution of public debt as well as aggregate demand, and hence also the inflation rate. Consequently, a fiscal stimulus (a primary budget deficit) may boost aggregate demand above GDP potential (or the level consistent with the central bank's inflation target), so that the central bank reacts with a monetary restriction (an increase in the interest rate) to realign inflation to the target. Hence the goal of price stability entails a **negative relationship** between the two policy tools (the PS schedule in Figure 2). On the other hand, as the central bank increases the interest rate to control inflation with respect to its target, the debt service increases, too, so that the government should create a primary surplus to keep debt under control. Thus, the goal of debt stability creates a **positive relationship** between the two policy tools (the DS schedule in Figure 2). The two policy tools *may* meet at an ideal equilibrium of the economy where the primary budget is in balance and the interest rate is at the level consistent with the inflation target – or "neutral" interest rate – implying that also GDP is at its potential level (point A in Figure 2). What is then the best policy conduct in order to realise both objectives when the economy is out the ideal equilibrium?

There are no univocal and once-and-for-all answers to these questions. The best solution depends on i) the **nature and magnitude of the shock**, ii) the **dynamic and interactive** nature of the system, and iii) the **institutional setup** in which the policy authorities operate.

As can be seen in our diagram, the economy may lie in four scenarios when cast away from the ideal equilibrium (in clockwise order): I) *rising debt and falling inflation*, II) *falling debt and falling inflation*, III) *falling debt and rising inflation*, and IV) *rising debt and rising inflation*. The path subsequently taken by the economy depends on the institutional design of the policy authorities, their mandates and scope of action. As remarked by Claudio Borio, "*purchasing government securities is part and parcel of standard monetary policy implementation. The meaningful economic dividing line between monetary and non-monetary financing has to do with who is in control and the reasons for the actions taken*" (Borio, 2020, p.10). There are two objectives and two tools available, which is a well-known necessary condition for a solution to exist (Tinbergen, 1952), but since both tools affect both objectives, a preliminary step is the so-called **policy assignment** – or who takes care of what. In the second place, the two policymakers may interact in **independent**, or **non-coordinated**, mode, i.e. each pursues its own objective upon taking the action of the other as given. Alternatively, they may operate in **coordinated** mode, i.e. they "solve the problem" of reaching the new equilibrium together and move in tandem.⁷ As we shall see, these features of the institutional design may or may not be conducive to reaching the new equilibrium, depending on specific conditions.

Now let us consider a real shock, or a real-financial compound shock, so that the economy finds itself in scenario I, with rising debt and falling inflation (point B), which fits well the consequences of the 2008-09 recession as well as of the current pandemic. The euro area "orthodox" policy assignment

⁷ The earlier strand of literature mentioned at the beginning focused on the additional problem that may arise when the policy authorities disagree about the ideal equilibrium point. At the centre of analysis was the classic conflict between a "hawkish" central bank aiming at a low inflation equilibrium (with higher unemployment than desired by the government), and a "dovish" government aiming at a low unemployment equilibrium (with higher inflation than desired by the central bank). In consideration of this problem, as said above the consensus was sceptical, if not adverse, towards policy coordination, and in favour of "monetary dominance" as embedded into the euro area institutional design (Dixit, 2001 and Dixit and Lambertini, 2001, are paradigmatic examples).

recalled above wants a) monetary policy targeted to price stability, and fiscal policy targeted to debt stability, with b) the two authorities acting independently. This means (follow the dotted arrows in Figure 2) that the government takes the initial interest rate as given and creates the primary surplus necessary to stabilise debt (point C). This move, however, worsens output and deflation. To close these gaps, the central bank should cut the interest rate (point D). This move grants more fiscal space to the government, which may relax its primary surplus.⁸

As said above, the magnitude of the shock (the vertical shift from point A) is also critical. Suppose, as in Figure 2, that the shock is so large that point D would require a **negative interest rate**.⁹ The consequence is the well-known problem of the ZLB, owing to which the central bank is unable to regain the target inflation rate, with the economy settling down in scenario II (debt is falling thanks to the lower interest rate, but inflation (with GDP) is still deviating from target). Thus, the diagram offers an intuitive explanation why the pursuit of price stability by the central bank may necessitate direct quantitative stimulus of economic activity.¹⁰ To the extent that this stimulus flows into the government budget, the pursuit of debt stability will allow for a relaxation of the fiscal stance as explained above.

Looking at the euro area, it is suggestive to compare the path from B to C with the early post-recession phase 2010-12, with monetary policy substantially passive and the national fiscal policies engaged in debt consolidation. The path from C to D (down to the ZLB) is instead resembling the activation of the subsequent accommodative monetary policy, with quantitative easing and asset purchases after 2015. Apart from these historical analogies, the general question now is whether the "orthodox" policy assignment is conducive to restoring the economy at its desired equilibrium A.

Note that, at this junction, the system moves into scenario III, where inflation picks up and hence the debt/GDP ratio falls further. This phase is critical for two reasons. The first one is that the central bank should tolerate the right quantum of inflation acceleration in order to converge to the target. The second is that the government may be tempted to exploit its larger fiscal space (debt is *below* target), i.e. from primary surplus to deficit (point E), creating too much inflationary pressure.¹¹ This, in turn, would trigger a monetary restriction (up to the target on the PS schedule). Therefore, the monetary-fiscal interaction would take the form of a spiral with both debt and inflation on the rise (scenario IV). Will the economy converge to the new equilibrium (point A)?

Mason and Jayadev (2018) show that the answer is affirmative (provided that the ZLB is not binding) if the initial (target) debt-to-GDP stock is *below* a certain critical threshold.¹² Of course, this is an empirical matter, but the message is that the "orthodox" policy assignment seems appropriate as long as national debts are not too high. This sounds consistent with the general conception of the euro area rules. However, the shock makes national debts higher (point B) to begin with, and they may remain higher for a considerable time. The euro area average debt-to-GDP ratio was 65.9% in 2007 and 86% in 2019.¹³

⁸ This alternate sequence of moves mimics the notion of un-coordinated policies.

⁹ An even worse problem, that we do not consider here, is that the new equilibrium A has fallen below zero, which means a negative neutral rate. This is a phenomenon largely discussed in the macroeconomic literature after the Great Recession (with regard to the euro area see e.g. Lane, 2020, and Bonatti et al. 2020, sec. 5).

¹⁰ Geometrically, the extent of the quantitative stimulus is the "missing" segment between the ZLB and point D.

¹¹ Notably this scenario did not materialise in the euro area, where monetary quantitative easing was followed by a relaxation of the primary fiscal stances by several governments, without, however, generalised rushes to deficits. The structural primary balance of the whole euro area remained in positive territory, from the peak at 1.6% of GDP in 2014 to 0.55% in 2019 (with only Estonia, France, Spain, Latvia and Slovakia going into deficit by more than 1% of GDP). On the price front, inflation remained steadily below its target.

¹² Convergence to point A depends on the dynamic properties of the system. Basically, whether the PS schedule is flatter (convergence) or steeper (divergence) than the DS schedule. Figure 1 exemplifies the case when PS is steeper so that the system diverges from point A.

¹³ In a similar exercise, Jarociński and Kackowiak (2017) argue that a larger and quicker reabsorption of the 2008-09 shock would have required the introduction of a share of non-defaultable euro debt. The same idea is endorsed and developed by Corsetti et al. (2017).

Now let us examine the alternative assignment, the one where fiscal policy targets (output and) price stability¹⁴ and monetary policy targets debt stability (follow the solid arrows in Figure 2 starting again at point *B*). Therefore, the government runs a primary deficit to stabilise output and prices (point *C'*). In order to keep the debt stable, the central bank responds by lowering the interest rate (point *D'*).¹⁵ According to the Mason and Jayadev model, this path is *always* convergent (provided that the ZLB is not binding), and it is certainly appropriate when the debt is high. However, as in the previous case, Figure 2 shows that the adjustment path may be interrupted by the ZLB of the interest rate. As already explained, the missing adjustment should be engineered by means of unconventional tools. A resemblance may be seen here with the course of actions undertaken in the Great Recession by major sovereign countries in the world (though debt stocks were relatively small, except in Japan). A similarity may also be seen with the euro area today, where the anti-pandemic joint packages of NGEU + more fiscal space to governments aim at restoring the economies, and the ECB's extended purchases of assets aim at stabilising the sovereign debt market.

If this analogy is broadly correct, the conceptual framework encapsulated in the diagram of Figure 2 prompts some further considerations. Once the debt is stabilised and the economy is being sustained by the joint monetary and fiscal stimuli (point *D'*), the final transition to the new equilibrium is critical, as largely discussed in the current literature (e.g. European Parliament, 2020). The suggestion of our analysis is that the path that will be taken has an **institutional determinant**, in the sense of what task is assigned to each policy actor. If they remain in un-coordinated mode, and fiscal policy remains in charge of price stability, *to the extent that* the economy is accelerating the government(s) may be willing to engage in fiscal retrenchment (from point *D'* to *E'*). This move will add momentum to push debt below target, allowing "monetary space" for the central bank to raise the interest rate while maintaining debt on target. As in the previous assignment, the adjustment path is a (counter-clockwise) spiral around the new equilibrium, with the difference that, according to Mason and Jayadev (2018), this path is convergent to equilibrium regardless of the level of debt.

An alternative is to switch the assignment back to "orthodoxy". The central bank will therefore move first by raising the interest rate to achieve price stability (from *D'* to *C'*), debt will be destabilised, and government(s) will be forced to consolidate (from *C'* to *C*). Luk and Vines (2015) show that, when debt is high, this fiscal restriction is a necessary component on the way towards equilibrium, but, as already said, if debt is high, this (clockwise) path may not lead to equilibrium at all (as exemplified in Figure 2).

Finally, a third institutional option is the **coordination mode**, where the unwinding of the monetary and fiscal stimuli proceeds in tandem along the "knife edge" path of debt stability conditions up to the achievement of price stability too (see also Codogno and Corsetti, 2020).¹⁶ Essential is that timing and pace of adjustment be tuned carefully so that debt does remain stable and economic activity is not cooled down too much, too early. With independent fiscal sovereigns and no central fiscal authority, with possibly asymmetric macroeconomic positions across countries, the coordinated transition to the new equilibrium would also require coordination of national fiscal policies.¹⁷ In this perspective, the (re)activation of the balanced-budget rule may help coordination. Yet, more ambitious forms of coordination may turn out to be desirable, like the repeated quest for a central fiscal "visible hand" capable of directing national fiscal policies towards a **common fiscal stance** of the euro area as a whole

¹⁴ Governments are typically portrayed as being more concerned with economic activity than with price stability, but we are in a scenario in which the variables move in tandem and there is no conflict between the two objectives.

¹⁵ This move may include, and generally it does, monetary financing of the budget deficit.

¹⁶ The "knife edge" path is exemplified in Figure 2 by the movement from point *D'* along the DS schedule up to point A.

¹⁷ For instance, Saraceno and Tamborini (2019) treat this point in a two-country model of monetary union with quantitative easing by the central bank. See also Landmann (2020).

vis-à-vis the ECB's monetary stance (Draghi 2014a, 2014b; Boone and Buti, 2019), if not a full-fledged "Economic and Finance Minister" endowed with own resources and powers (see e.g. Asatryan et al, 2018, for a recent discussion of the issue).

Of course, our diagram is too simple a guide to the choice of the right solution, and many important empirical "details" ought to be considered. Nevertheless, it may be argued that the establishment of a new framework for monetary-fiscal policy coordination in the euro area may be desirable as a complement to the innovative anti-pandemic measures under way, being aware that the **political economy of the euro area** is not conducive to policy coordination, and it has proved resistant to modifications in the course of the crisis of 2010s.

The foregoing reasoning does not entail that, even in a context of improved coordination between fiscal and monetary authorities, any degree of greater fiscal activism can be supported. Barthelemy et al. (2019), for instance, show that, in the face of a large negative fiscal shock, and a large demand for safe assets, the central bank's ability not to be dominated by the fiscal authority while this latter "relaxes" its intertemporal budget constraint ultimately depends on the private demand for the central bank's liabilities (i.e. currency and reserves). Government debt, in other words, can be expanded thanks to the support of an accommodative monetary policy without triggering serious problems of fiscal dominance to the extent that the private demand for public liquidity is sufficiently high and stable. The credibility of the overall system of economic governance, thus, remains of fundamental importance and the independence of the central bank remains an essential ingredient of any successful coordination effort. Again, the current framework of coordination in the multicountry euro area, whereby different viewpoints among the Member States hinder the adoption of clear-cut common decisions, does not seem to contribute in this direction. As we shall argue again in section 4, fixing the euro area's institutional framework may thus strengthen the independence and the credibility of the ECB, paradoxically exactly when it coordinates with the fiscal authorities and deliberately supports their activism.

3. SOVEREIGN RISK PREMIA, FINANCIAL STABILITY, AND MONETARY-FISCAL POLICY COORDINATION

The discussion in section 2 deliberately neglects two important aspects: one characterises any economy and one only the euro area. The first aspect to consider is the possibility that the actual interest rates differ from the risk-free policy rates that the monetary authorities manipulate to contribute to economic stabilisation. Private investors may demand **large and volatile credit premia** to finance and refinance the sovereign, thereby creating a wedge between the policy and the market interest rates. This aspect broadens that spectrum of monetary policy “secondary” concerns and trade-offs from public debt stability to financial stability at large.¹⁸ Second, specific to the euro area is the existence of **large differentials in such premia across the Member States**. These latter reflect the differences in the outstanding level and structure of public debts, the current borrowing needs of each country, the expected rates of GDP growth in the future, the health conditions of the domestic banking sector, the features of macroeconomic imbalances, the risk appetite of the international investors, and the perceived political ability of the authorities to carry out stabilisation and consolidation policies, respectively, in bad and in good times. It is worth noticing that while central banks can exploit their independence to commit to their future conduct, governments lack such commitment over future policies: investors may be sceptical that, after raising new debt, they will not eventually decide to default (Cole and Kehoe, 2000).

Panic in financial markets may thus lead the sovereign yields to stray from what would be consistent with the fundamentals (Bocola and Dovis, 2019). In the first case, it is possible to end up in a bad equilibrium, whereby the very expectations of insolvency create the premises for an unsustainable situation. In such circumstances, debt consolidation is incompatible with socially acceptable conditions, whereas countercyclical expansionary fiscal policies cannot be undertaken due to the refinancing problems.¹⁹

Although distinguishing self-fulfilling debt crises from fundamental-driven debt dynamics is difficult, common wisdom is that unless all evidence points to debt unsustainability, the central bank (as well as international institutions, such as the IMF, and individual foreign countries) may help the sovereign to overcome liquidity crises and paroxysmal market reactions. However, the central bank cannot be the ultimate unconditional guarantor of the national fiscal authorities: in such a case, it would be entirely dominated and would lose both independence and credibility. This implies a sort of special form of coordination among the authorities, whereby the central bank provides only conditional and temporary liquidity support in the secondary markets when and if non-fundamental related crises emerge.

While the discussion in section 2 shows that, under certain conditions, there exists a case for an explicit and transparent form of fiscal and monetary coordination with a view to dampening the fluctuations of prices and output around the optimal targets, further considerations in this section reveal that debt sustainability concerns and investors’ expectations may further exacerbate the trade-off between credible pursuit of price stability when due, and preservation of financial market conditions that are consistent with the fundamentals, conducive to a smooth functioning of the economy, and enabling the effective transmission of the economic policy stimuli. This has not much to do with the fiscal and

¹⁸ This is indeed a long standing issue dating back, to say the least, to the 1990s when “narrow” objective functions of central banks became recommended. The early consensus against financial stability as a target (e.g. Bernanke and Gertler, 2001) was substantially impaired in the run-up of global financial imbalances leading to the 2007-08 collapse: Borio and Lowe (2002); White (2006)

¹⁹ Lorenzoni and Werning (2013), Tamborini (2015) and Ayres et al. (2018) show how multiple equilibria can arise when a change in investors’ beliefs may increase borrowing costs for the government and move the economy on a path of debt accumulation that raises the risk of a default, thus validating the initial change in beliefs.

monetary coordination directed to stabilisation goals that we outlined in section 2, but it represents an additional venue of the multifaceted monetary-fiscal nexus. In sum, if *financial* stability becomes *de facto* an additional secondary objective of central banks and the sovereign debt represents the main source of uncertainty and risks in the financial markets, the life of central banks and fiscal authorities can become very complicated in several respects.

A further issue to notice is associated with central banks' sovereign bond purchasing programmes to control the yield curve in times of financial distress, and it has to do with the **long-term consequences of the stocks of sovereign assets** acquired during the programme. First, there exists a level of stocks beyond which the financial implications of a domestic sovereign default may wipe out the capital of the central bank, which would paradoxically need a capital injection from the very fiscal authorities the bank is trying to support.²⁰ Second, central banks appear to struggle, when they try to unwind previous quantitative easing programmes (i.e., the so-called tapering) once the economic and financial conditions improve, because financial markets react in a disorderly manner to the announcements of such policy switches. Central banks' temporary purchase programmes may, to a certain extent, lock them in also in the future. It follows that the independence of a central bank from the domestic fiscal authorities could then be *de facto* reduced by the reluctance of the investors to reabsorb risky sovereign debt, and this would be more likely the larger the share and the level of sovereign debt held by the central bank. The ability of the central bank to preserve its independence in the long term, thus, depends on its ability to avoid being locked-in by, on the one hand, the investors' unwillingness to take on sovereign risks and, on the other, the unabated need of support by the government. An equilibrium that may set the limit of where the monetary-fiscal policy nexus can feasibly go. Such a situation would be particularly difficult if the economy, once the crisis will be over, will be characterised by low growth and high inflation. As suggested by Charles Goodhart (2020): "*Only when indebtedness has been restored to viable levels can an assault on inflation be mounted*".

What is important to notice for our purposes, at this point, is that all these considerations are particularly controversial in a currency union among sovereign states that lacks a common fiscal authority. On the one hand, the ECB should act as the central bank of a sovereign state for the reasons explained in section 2 and for the reasons above, but on the other hand, it holds an allegiance with more than one country: unless the interests of each Member State are perfectly aligned with those of the others, the ECB has to reach consensus through negotiations. Let us consider the case of a non-fundamental-related increase in sovereign yields. The monetary and fiscal authorities in the monetary union have to decide, both at the technical and political level, whether the turmoil is due to some wrongdoings by certain fiscal authorities, who will ultimately bear the possible costs of temporary financial assistance, and what is the probability that the provision of liquidity and temporary support may undermine, rather than increase, the sustainability of the assisted countries' sovereign debt. Evaluations and negotiations require time and may raise serious political controversies, whose ultimate impact, even in the rosier scenario, bears heavily on the effectiveness and the adequacy of the measures. In the heart of the European debt crisis, a massive sell-off of peripheral bonds risked jeopardising the integrity of the euro area until the then President of the ECB, Mario Draghi, addressed the market with the famous "whatever it takes" commitment. This has happened again with the diffusion of COVID-19, but the ECB's engagement was not enough: this time both the fiscal authorities and the ECB had to make simultaneous commitments to support the economies of the euro area, and

²⁰ Since central banks do not have liabilities except fiat money that they can issue freely, the relevance of capital losses for central banks is a matter of debate. See e.g. De Grauwe and Ji (2013); Sinn (2018).

in particular those considered as most vulnerable to the virus and to possible excesses in financial markets (see Bonatti et al. 2020).

Ultimately, this represents the very reason why, in the past, European governments decided to externalise the provision of financial assistance to sovereign states to the European Stability Mechanism (ESM), imposing *ex post* conditionality, and running a debt sustainability exercise before deciding upon conceding loans to a sovereign. Yet, the current COVID-19 crisis has shown that, as the ultimate motives of disagreement among the Member States have not been solved, the ESM has been so far redundant and the burden of intervention has shifted again on the ECB. A burden that, as we shall discuss in section 4, can be alleviated only by a fundamental reform of the framework for financial assistance in the euro area; until then, the ECB will likely face trade-offs connected with this sort of “financial dominance”.

4. BUTTRESSING THE EUROPEAN UNION AND ITS MONETARY INSTITUTIONS

4.1. Tapering shocks, political risks and monetary policy

By June 2021, the Eurosystem is projected to own assets close to 40% of the euro area GDP as a result of purchases made under the PEPP and its other asset purchase programmes. Although – as seen above with regard to the PEPP – *“reinvestment will be maintained until at least the end of 2022”*, one cannot rule out that, in the future, the monetary policy stance judged appropriate by the ECB will require not only the reduction of its net purchase of assets but even the reduction of the size of the Eurosystem balance sheet. As shown in section 2, the transition from the (successful) phase of monetary-fiscal joint stimuli to a new equilibrium with price and debt stability, and ordinary policy conditions, will require a careful calibration of “tapering” on both sides. Otherwise, this **“tapering shock”** might destabilise the high-debt countries. In section 3, we have pointed out a number of euro area-specific features that may dramatize this trade-off thus *de facto* restricting the ECB’s policy options.

In order to have a wider view of the conditions within which the ECB will operate, and devise appropriate interventions to buttress the euro area and its monetary institutions, we now wish to draw attention to two important **political-economic facets**, already emerged in the EU during the last decade. What we are going to consider projects the post-pandemic challenges beyond the competences and boundaries of the ECB, and even of the euro area, to reach out to the EU itself.

The first consideration, a consequence of the growing fraction of government debts that is held by official holder, is that any future financial market tensions, due to concerns about Member States’ debt sustainability, is going to have, more than in the past, immediate **repercussions on the relationships among governments and EU institutions**. Conversely, political developments and events (e.g. elections) across EU countries will have a greater impact on market assessments of government securities. Moreover, as noticed by Bulow and Rogoff (2015), *“because private creditors care strictly about getting their money and official creditors have broader goals, countries are better off when official creditors hold their debts”*. Geo-political factors, for instance, can condition negotiations among official entities and governments to restructure the sovereign debts of countries in troubles, or to obtain new loans and grants to their benefits, generally providing them with additional levers for achieving better terms, as recently happened with the approval of the NGEU (see Bonatti and Fracasso, 2020). Selective (partial) default may become an issue, with the possible attempts by debtor countries to extract debt relief concessions in one form or another from EU institutions and creditor countries, without undermining their access to private capital markets. Under these circumstances, it is difficult to think that the ECB, as the holder – directly or indirectly through national central banks – of a substantial chunk of the euro area countries’ debt, will not be involved in this intrinsically political game.

The second facet to be considered is the growing influence in many EU countries of the so-called **sovereignists/euro-sceptics (or populists)**. In the so-called euro area core countries, sovereignists tendentially oppose any risk sharing and intercountry transfers in favour of the so-called peripheral countries, and symmetrically their counterparts operating in the latter ask – when they are not openly in favour of leaving the euro area – for complete risk mutualisation and unconditional ECB support for their country’s debt, while pretending to keep full national sovereignty over fiscal policy. What unites core countries’ sovereignists and their peripheral counterparts is their common hostility towards the EU establishment. In the period preceding the COVID-19 pandemic, tensions associated with the growing sovereignist influence has been at the origin of many episodes in which sovereign bond yield spreads widened in the euro area, especially in the case of the spikes in Italy’s sovereign spreads, which

were closely linked to the confrontational attitude displayed by Italian populists towards EU institutions and major EU Member States.²¹ As a matter of fact, in that period neither financial shocks nor shocks to economic fundamentals have been the main drivers of the volatility of high-debt countries' sovereign yields in the EU, but rather the doubts concerning the willingness of these countries' political elites to preserve public debt sustainability, and thus remain in the euro, in a context of anaemic growth.

In the environment described above, the government of a very high-debt country whose economy is hit by a recessionary shock, or simply tends to stagnate, may prefer to redirect resources toward spending or to cut taxes rather than repaying debt held by official entities or foreign investors. A lower debt level could make this outcome less likely (thus reinforcing the argument in favour of a substantial reduction of the national debts by transferring them to the ESM). This conclusion is consistent with the recent literature on sovereign default.²² Such literature accounts for the fact that, in a monetary union, the costs incurred by a country to exit the union are extremely high and larger than the costs associated with a default on its debt, thus making partial default without leaving the monetary union more realistic. Furthermore, it shows that, if the collateral costs (due to contagion and other negative spillovers) that a country's default inflicts on its partners are large enough, it is rational for the latter to bail out the former. It follows in this case that any strict no bail-out rule ends up being time-inconsistent, and therefore it is not credible. Finally, to avert the default, fiscal transfers in favour of the high-debt country on the part of its partners are more efficient than debt monetisation on the part of the Union's central bank because of the distortionary cost associated with higher inflation. However, in the euro area it is envisaged that the ECB can buy the bonds of a country in trouble through the outright monetary transactions (OMT) programme, avoiding any inflation cost by sterilising these purchases through the sales of some other assets.

Although, according to the literature mentioned above, it is rational for countries that incur serious losses in case of default of their EU partners to make fiscal transfers in favour of them in order to avoid their default, it is far from sure that this solution would be politically viable in case of need once the COVID-19 emergency will be over. The insistence whereby political leaders of Germany and the so-called "Frugal Four" stressed the temporary and exceptional nature of the NGEU seems to rule out this possibility. At the same time, the political and social climate of the most vulnerable EMU countries – Italy in particular – raises doubts about the acceptance by these countries of the typical mix of fiscal consolidation and structural reforms that would be required to get financial assistance under the OMT programme. In this post-pandemic scenario, the ECB would be forced to make politically sensitive choices, in the presence of opposite pressures such as those pushing for a quick return to a strict adherence to the capital key in the purchases of sovereign assets, on the one hand, and those calling the ECB to act unconditionally as lender of last resort in favour of the countries in trouble, on the other hand. Hence, the ECB would implicitly assume political responsibilities that are not appropriate for a technocratic institution, and its credibility and independence would be questioned.

Making this scenario less likely and the euro area less fragile entails not only the reduction of government debt that will be discussed below, but also the rapid completion of the Banking Union, with the creation of a European deposit insurance and the final approval of the ESM reform, whose elements were agreed in principle by the Eurogroup in December 2019. In particular, completion of the Banking Union is urgent to prevent the possible repetition of the "doom loop" between sovereign risk and bank risk that took place in the euro area periphery in 2011-12.

²¹ The contribution of redenomination risk in the determination of Italy's sovereign spreads is quantified by Gros (2018) and Minenna (2019).

²² See Aguiar et al. (2015); de Ferra and Romei (2018); Bianchi and Mondragon (2018); Bianchi et al. (2019); Gourinchas et al. (2020).

However, it is exactly the large holdings of domestic government bonds by the southern European banks that raises the perplexities of the euro area core countries towards the completion of the Banking Union, revealing in particular their strong doubts about the will of the Italian political class to pursue a responsible fiscal policy and avoid a debt crisis that would have immediate consequences for its domestic banks. Actually, southern European populists seem to validate these fears, for instance by their aggressive opposition to the ESM reform, in particular to the extent that in the event of a crisis it facilitates an orderly restructuring of the debt in the hands of the private sector.²³ In fact, this opposition signals to the market, as well as to other countries, that, if in power, they will not give priority to debt sustainability, since – in case of crisis – they will seek to offload a substantial part of its costs on the taxpayers of the rest of Europe, while safeguarding domestic private holders of national debt.

Therefore, it is necessary to create the conditions for a courageous political compromise among the countries of the euro area, overcoming their mutual mistrust and proceeding quickly on the path of a concomitant risk reduction and risk sharing, so as to create a solid safety net to protect the EU, the integrity of the euro area, and of its central bank.

4.2. Breaking the doom loops between sovereigns, markets and the ECB

Some proposals have been put forward that aim at the goal indicated above. They share two key ideas that, taking stock of the innovation represented by the financial engineering of the NGEU programme, differentiate them from the past unfruitful debate about the mutualisation of *existing* sovereign debts. The first idea is that the preservation of a sound ECB requires a **peer supranational fiscal authority** (see also section 2.2 above). For the purposes at stake here, the new institution's mandate is to manage sovereign debt(s), endowed with political legitimacy and financial capacity. The second idea is that the sovereign debt eligible to be entrusted to this authority is not the whole of past sovereign debts, marked by past national responsibilities, but the debts newly created for the certified pandemic necessities, such as the debt purchased by the Eurosystem under the PEPP.²⁴

Before the pandemic, Corsetti et al. (2017, pp. 10-ff.) envisaged, as a means to enhance the joint monetary-fiscal stabilisation capacity of the euro area, the creation of "**undefaultable bonds**" issued directly by the ESM or a similar institution, in addition to being ready to purchase sovereign debts making them undefaultable too.²⁵ Key to this instrument is the principle of conditional eligibility, mentioned above, according to which the activation of the mechanism in either form would be the result of a collective green light of Member States.

At the outbreak of the pandemic, drawing on the war finance analogy, Giavazzi and Tabellini (2020) have advocated the issuance of **irredeemable bonds**, either by single sovereigns or by some EU institution (see also Boitani and Tamborini, 2020). In their original idea, these "consols" should be backed by the ECB thus enjoying very low interest rate and the status of (almost) risk-free asset.

²³ The reform of the ESM has been quite controversial in Italy, even among economists that are not close to the populist parties (see Galli, 2020). Their main objection makes reference to the violent market reactions that followed the so-called "Deauville walk", namely the agreement between Chancellor Merkel and President Sarkozy according to which, in the future, sovereign bailouts from the ESM would require that losses be imposed on private creditors. However, market reactions were violent because market participants were surprised by that announcement, since before it the equal treatment of all euro area sovereigns envisaged by the ECB collateral rules and the prudential provisions for banks and asset management companies had convinced them of the safe status of all sovereigns. This will not be the case when the ESM reform will be implemented: the possibility of losses in case of default of a bond will be priced by the markets from the instant of its issuance. Moreover, there is no mechanism of automatic debt restructuring for the countries that ask for financial assistance from the ESM.

²⁴ One reason that underpins the eligibility of this newly created debt to be considered a "collective liability" is that granting each country a fiscal "whatever it takes" to fight the pandemic and sustain the economy generates positive spillovers for all (while too strict fiscal constraints would do the opposite).

²⁵ "By 'non-defaultable' we mean that the fund and the ECB would ensure that maturing Eurobonds would be convertible into currency at par, analogously to maturing reserve deposits at the ECB" (Corsetti et al., 2017, p.10).

According to Micossi (2020), however, the ECB could gain more degrees of freedom in the conduct of its monetary policy by gradually selling some of its stock of sovereign bonds to the ESM, in accordance with each country's capital key and without any transfer of default risk, which would continue to fall on national central banks. The ESM could go on buying these sovereigns up to 20% of the euro area's GDP. By rolling over the securities purchased from the Eurosystem *"rather than seeking reimbursement from the issuers, the ESM would make them equivalent to irredeemable bonds"* (Micossi, 2020). In its turn, the ESM could finance these purchases by issuing its own securities in capital markets. Together with the bonds that the EU is going to issue to finance NGEU and the other EU programmes, these ESM securities could be the risk-free instruments comparable to US government securities that Europe would strongly need to underpin a fully integrated capital market.

Micossi, like Corsetti et al. (2017), does not motivate his proposal as a way to relieve the ECB from the constraint represented by the need to roll over the government assets of the high-debt countries, but rather as a way to protect the latter from the consequences of a financial shock. Indeed, as recalled in section 3, when a country's public debt exceeds a certain threshold, there may exist multiple fiscal equilibria, one being a "bad" equilibrium that materialises if investors are convinced that there is a significant probability that the government will default on its debt. A financial shock may push the economy towards the bad equilibrium, thus spreading contagion to other Member States and exerting pressure on the ECB to bail out the countries in trouble.

One may also think that this substantial transformation of government securities into ESM irredeemable-undefaultable bonds, for an amount that is close to what the member governments have to spend for tackling the COVID-19 emergency, should not arouse the political opposition of those who are usually concerned with the moral hazard implications of debt mutualisation.

While these are certainly not the only available solutions, they have the merit of making it clear the relationship between the risks of financial, not only fiscal, dominance for the ECB and the necessity to develop a new governance framework capable of dealing with the legacy of the two decades of profound economic crises. As similar reforms to this framework would be anyway necessary to create a credible and resilient European Banking Union, there exists a window of opportunity to strengthen the euro area banking and financial systems, while restoring greater independence of the ECB from market instability.

5. CONCLUSION

The pandemic and the measures against the diffusion of the virus have worsened considerably the economic and social fabric of most euro area countries. While the ECB has intervened to support financial markets with ample liquidity provisions, the Member States have implemented a massive fiscal response that will increase the outstanding sovereign debts for many years ahead.

These circumstances have modified the monetary-fiscal nexus in the euro area so profoundly that the ECB might face various trade-offs in the future. In particular, monetary policy in the euro area risks being dominated by concerns that are at odds with price stability. This is most evident in an economic environment characterised by high outstanding debts and large fiscal deficits. We have shown that three sources of such risks are prominent in the euro area: **inflation, financial dominance, and tapering**.

If inflation will grow, the ECB's policy reaction may be constrained by the effects of monetary tightening on national debts sustainability. A different, though connected, trade-off unique to the euro area is associated with what we have called "financial dominance". Indeed, the expectation that some Member States choose to default on their debts and/or exit the EMU (the two scenarios might not be equivalent) can create massive portfolio rebalancing and "flight to safety" phenomena within the euro area. When such expectations are not motivated by fundamentals and trigger a self-enforcing process that threatens the integrity of the euro area, the ECB must intervene. At some point of normalisation, the monetary policy stance judged appropriate by the ECB will require the reduction of the assets purchased through the APP and PEPP programmes. This tapering can create problems for the highly indebted countries that need to roll over their government debts. Moreover, in a post-COVID environment where a large fraction of government debts will be held by official holders (the Eurosystem and other EU institutions), the threat of selective partial defaults could be used by the highly indebted countries to extract concessions from EU institutions and partner countries, thus implicating the ECB into a highly politicised game concerning financial assistance and debt restructuring.

These risks impinge upon the functional independence of the ECB, and the transition from the phase of monetary-fiscal joint stimuli to a new equilibrium with price and debt stability, and ordinary policy conditions. Most of them could be reduced by a **revision of the euro area governance framework**, aimed at breaking the doom loops among sovereign governments, markets and the ECB, and at creating conditions for careful calibration of tapering on both the monetary and fiscal side. Key to this aim will be the removal of a considerable amount of sovereign assets from the Eurosystem's balance sheet by means of the creation of a **peer supranational fiscal authority** as aggregator and manager of the EU sovereign debt created for certified pandemic necessities, endowed with political legitimacy and financial capacity.

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The Euro Area after COVID-19

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Abstract

The COVID-19 pandemic will leave the euro area economy quite weak. It will be essential that both fiscal and monetary policies remain mobilised to achieve a sustainable recovery. Having indirectly financed a large share of new public debts, the ECB will have to tread a fine line between its price stability mandate and the need to avoid disrupting debt markets. The solution for the ECB is to use its announced strategy review to provide more clarity, both to its objectives and to its procedures. This includes adopting average inflation targeting, a formal relationship with member governments and the issuance of its own debt instruments.

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LIST OF ABBREVIATIONS

AIT	Average inflation targeting
APP	Asset purchase programme
ECB	European Central Bank
EP	European Parliament
EU	European Union
GDP	Gross domestic product
HICP	Harmonised Index of Consumer Prices
LTRO	Long term refinancing operation
PEPP	Pandemic emergency purchase programme
QE	Quantitative easing

EXECUTIVE SUMMARY

- **The European economy after COVID-19 will be very different from what it used to be.** Most obviously, national public debts will have increased by some 15-30% of GDP. A larger proportion of these debts will be held by the ECB than has been the case so far.
- **It is very likely that the post-crisis rebound will not be followed automatically by a sustainable recovery.** Macroeconomic policies will have to shift seamlessly from containing the impact of the pandemic to putting the economy on to a lasting growth path.
- **The ECB will face a complex situation.** Now in negative territory, its interest rate instrument is no longer available, at least not enough to make a difference. Instead, it has been using its balance sheet instrument, which implies buying very large amounts of public debts.
- **Large holdings of public debts create proximity between the ECB and its member governments.** A particular concern is fiscal dominance, whereby monetary policy decisions become heavily influenced by this proximity.
- **This paper takes the view that these risks exist but they can be managed if the ECB makes early preparations to that effect.** These risks should be a central concern of the strategy review currently under way at the ECB. The existing strategy may remain reasonably well-adapted to normal times, the strategy review must deal with unusual times, most of which are unpredictable.
- **The ECB should adopt the average inflation targeting strategy, as recently adopted by the US Federal Reserve.** By committing to overshoot its inflation target for about as many years as it previously undershot it, the strategy will allow the ECB to strengthen the post-Covid recovery, it will lift inflation expectations up and provide leeway to bring interest rates into positive territory.
- **An additional benefit of the average inflation targeting strategy is that it will allow to continue to indirectly finance the fiscal policy effort without triggering fears of fiscal dominance.** While there is no threat of a loss of formal independence, the appearance of fiscal dominance may sustain the perception that, informally, the ECB is not as independent as it is supposed to be.
- **Financial stability is now acknowledged by the ECB as a key policy objective.** Having been given the responsibility for banking supervision, its next step is to work out formal arrangements with governments regarding rules of engagement and financing of losses.
- **The ECB should also seek to improve relations with member governments.** This enhanced form of mutual information should cover the sharing analysis of the situation, exchanges of views regarding planned action and a better understanding by the ECB of national circumstances
- **The ECB should issue its own debt instruments.** This would make it possible escape the numerous difficulties associated with the use of national debt instruments for standard and nonstandard policy interventions.

1. INTRODUCTION AND PREVIEW

The European economy after COVID-19 will be very different from what it used to be. Most obviously, national public debts will have increased by some 15-30% of GDP. A larger proportion of these debts will be held by the European Central Bank (ECB) than has been the case so far. Most, if not all, countries will have seen a number of firms leave business and unemployment will be higher. Some financial institutions may be weak. All of that suggests that it is very likely that the post-crisis rebound will not be followed automatically by a sustainable recovery. Macroeconomic policies will have to shift seamlessly from containing the impact of the pandemic to putting the economy on to a lasting growth path.

Unfortunately, the scars of the crisis that we are currently undergoing will create a daunting challenge. Public debts are increasing fast, the interest rate is at, or very close to, its effective lower bound, unemployment currently kept in check by fiscal support will build up fast, myriads of firms will have gone into bankruptcies. In addition, fighting climate change is likely to emerge as the new priority. It will require deep transformations that will eat into growth as we replace exclusive emphasis on economic efficiency with carbon mitigation objectives.

Meeting these challenges cannot be entirely delegated to the central bank. Much as governments and the ECB have joined forces during the pandemic, they will have to continue doing so in post-COVID times. In normal times, fiscal-monetary coordination is rare, in fact more the exception than the rule.¹ In crisis times, it is even more needed but not guaranteed, as we saw during the European debt crisis. It is therefore very important to start the discussion now.

The ECB will face a complex situation. Now in negative territory, its interest rate instrument is no longer available, at least not enough to make a difference. Instead, it has been using its balance sheet instrument (longer-term refinancing operations [LTRO], asset purchase programme [APP], pandemic emergency purchase programme [PEPP]), which implies buying very large amounts of public debts. But large holdings of public debts create proximity between the ECB and its member governments, which generates a host of questions. In particular, are we witnessing a case of fiscal dominance, whereby monetary policy decisions become heavily influenced by this proximity? Will the ECB be able to pursue its core mandate of price stability if doing so stands to fragilize public debts?

This paper takes the view that these risks exist but they can be managed if the ECB makes early preparations to that effect. These risks should be a central concern of the strategy review currently under way at the ECB. The previous strategy was set in the late 1990s, and marginally adjusted during the previous review in 2003. Already, the debt crisis revealed the limits of this strategy, essentially built for quiet times, moderate public debt levels and positive interest rates. The historical situation created by COVID-19 lies even further out from the logic of the 1990s. The existing strategy may remain reasonably well-adapted to normal times, the strategy review must deal with unusual times, most of which are unpredictable.

In order to confront its inability to raise inflation to its target for about a decade, the ECB should adopt the average inflation targeting strategy, as recently adopted by the US Federal Reserve. By committing to overshoot its inflation target for about as many years as it previously undershot it, the strategy will allow the ECB to strengthen the post-COVID recovery, it will lift up inflation expectations and provide leeway to bring interest rates into positive territory.

¹ For recent evidence, see Bartsch et al. (2021).

An additional benefit of the average inflation targeting strategy is that it will allow to continue to indirectly finance the fiscal policy effort without triggering fears of fiscal dominance. While there is no threat of a loss of formal independence, the appearance of fiscal dominance may sustain the perception that, informally, the ECB is not as independent as it is supposed to be.

Financial stability is now acknowledged by the ECB as a key policy objective. For a long time, the ECB has resisted taking on this responsibility but the Great Financial Crisis has made it clear that it is unavoidable. Yet, this task is fraught with difficulties, including the risks that it implies and the division of tasks between the ECB and its member governments. Having been given the responsibility for banking supervision, its next step is work out formal arrangements with governments regarding rules of engagement and financing of losses.

The ECB, now a mature central bank, is also in a better position to improve its relations with member governments. Formal contacts at the highest level, which would supplement ample contacts at the technical levels, stand to improve the functioning of the euro area. This enhanced form of mutual information should cover the sharing analysis of the situation, exchanges of views regarding planned action and a better understanding by the ECB of national circumstances.

Finally, the ECB should escape the numerous difficulties associated with using national debt instruments for its standard and nonstandard policy interventions. The solution is to issue its own debt instruments, which would progressively replace on its balance sheet national instruments.

2. THE ECONOMIC LEGACY OF COVID-19

As we are currently discovering with the second wave of the pandemic that swirls through all of Europe, it is far too early to take stock of the situation. Economic forecasts have flourished in large numbers over the last few months, only to be deeply revised soon after being produced. The current level of uncertainty in the face of a historical event is unprecedented. Yet it is possible to envisage some key characteristics of the legacy of the pandemic.

The first source of uncertainty is when the pandemic will end. The optimistic view is that some vaccines will be validated around the end of 2020 and early 2021. It will then take about one year to vaccinate enough people around the world to achieve herd immunity, hopefully by late 2021. More pessimistic views would push out the date. The next uncertainty concerns the number of waves yet to come, along with the need to repeatedly impose again strong distancing measures that disturb the economic activity and require fiscal support.

The second source of uncertainty is the economic impact of one wave of pandemic. Table 1 shows the Commission forecasts as of July 2020, i.e. after the first wave. GDP growth in the euro area was then expected to decline by 10% in 2020 relative to 2019 (9.8% for the EU). With the second wave, the outcome is likely to be much worse, even though the Q3 recovery seems to have been stronger than expected. It is possible that we learnt how to better deal with a wave following the first one so, in the following, I optimistically assume that the cost of one further wave is a decline of 5% to 8% of GDP. If we assume that there will be three waves before a vaccine is widely adopted by end of 2021, this would imply a cumulative GDP decline of 14% to 22%. With four waves, the range is 18% to 28%. These are guesses, of course, but they clearly indicate that the crisis is massive proportions.

Table 1: GDP growth forecasts (% per year)

	Summer 2020			Spring 2020		
	2019	2020	2021	2019	2020	2021
Euro Area	1.3	-8.7	6.1	1.2	-7.7	6.3
EU	1.5	-8.3	5.8	1.5	-7.4	6.1

Source: European Commission, Interim 2020 Summer Forecasts.

According to the Commission (AMECO online), presumably due to the first wave and its follow-up, the total of public debts of euro area member countries is expected to increase by close to 12% over 2020, raising the debt/GDP ratio by 16% of GDP.² Three waves would imply a 48% increase in the debt/GDP ratio, to about 134% of the euro area GDP. Of course, national evolutions are likely to be very different, an issue taken up below in Section 3.3.

The image that emerges from these rough and uncertain calculations shows a euro area in deep depression. This is not what the public is, and will be, seeing, though. Massive public policy interventions have largely preserved incomes of much of the population and made it possible for most firms to survive and to avoid resorting to large-scale labour dismissals. As a whole, the euro area will have been borrowing its way out of the depression. High borrowing, in turn, is made possible by large scale purchases of public debt by the ECB and, in the case of previously largely indebted countries by

² This is not quite consistent with the forecasts in Table 1, but I ignore this issue.

the creation of the European Recovery Fund. This combined effort is creating a virtuous cycle, which prevents the considerably worse deterioration that would have occurred in the presence of large dismissals and deep income losses.

At the same time, the ECB is likely to indirectly finance a large share of newly issued public debts through its quantitative easing (QE) programs. Through the public sector section of the asset purchase program (APP), the ECB plans to acquire about EUR 420 billion of debts through December 2021. Under the pandemic emergency purchase programme (PEPP), until at least June 2021, the ECB is committed to spend EUR 1,350 billion on public and private assets, with the bulk concerning public debts. The numbers shown in Table 2 are not exactly comparable since the debt issued by member governments is a forecast to end of 2020 while the announced ECB numbers concern purchases that will extend to 2021. With the second wave under way, it is now clear that public debts will increase in 2020 by more than indicated and it is quite plausible that they will continue to rise in 2021 at a similar rhythm. But the ECB is also expected to raise its asset purchase programmes. Still, it seems safe to interpret Table 2 as indicating that the ECB intends to indirectly acquire the bulk, or even more, of newly issued public debts.

Table 2: Forecasts of new public debt and ECB purchases (EUR billion)

Newly issued public debt in 2020	ECB purchases under PEPP (2020-21)	ECB purchases under APP (2020-21)
1,200	1,220*	420**

Sources: Debt: European Commission (AMECO online); ECB purchases: ECB and author's calculation.

Notes: (*) PEEP purchases, to a total of EUR 1,350 billion concern public sector and private securities. As off end of September 2020, 90% of purchases concerned public securities, hence the EUR 1,220 billion estimate.

** In September 2019 the ECB restarted APP with net monthly purchases of EUR 20 billion. In March, it decided an additional envelope of EUR 120 billion for 2020, hence a total of EUR 600 billion for 2020-21. With about 70% of these purchases concerning public sector assets, APP will purchase about EUR 420 billion worth of such assets.

3. POST COVID-19 CHALLENGES

3.1. The central issue: sustainable recovery

The previous section suggests that, by end 2021 when the coronavirus could have been contained, the euro area will be in a historically bad economic shape. While any forecast is impossible, a plausible view is that GDP will have declined by some 20% to 25% relative to the 2019 level. The debt/GDP ratio indebtedness will have risen by some 50% of GDP. Again, the situation will differ from country to country.

Thanks to the measures taken by the governments and the ECB, most citizens and businesses will not feel a pain that corresponds to these dramatic numbers. Public borrowing will have sustained standards of living. Corporate borrowing, some of which is guaranteed by governments, will permit most firms to survive. Public debts, while nominally much larger, will be safely parked in the Eurosystem's balance sheet, away from financial markets. This is how it should be. Time-honoured principles indicate that borrowing is the best way to face unexpected adverse shocks³ and that the government should borrow on behalf of those who cannot⁴. In a way, public policies during the pandemic are straightforward and, indeed, it is striking that all governments in the euro area have adopted broadly similar actions.

The hard part will come afterwards, after the pandemic. The recovery must then start without delay, for several reasons:

- As the pandemic support programmes are removed, numerous firms are likely to face bankruptcies and unemployment stands to soar.
- Many bankruptcies will concern viable firms. Bankruptcies are costly as they destroy know-how, commercial assets and some physical capital.
- Similarly, lasting spells of unemployment destroy human capital and create social pain, with dangerous political implications.
- Bankruptcies and unemployment result in non-reimbursed borrowings, which fragilizes the financial sector and can trigger a financial crisis.

Will the recovery start spontaneously? Mechanically, it will, but only partly. The end of distancing measures, which prevent normal economic activity, will play an important role. Both consumers and producers will be eager to return to normality. But the new normal will be different. Once overall consumption rises, productive investment will have to play a crucial role to keep the economy going in a sustainable way. A new uncertainty, however, will set in: after nearly two years during which public policies have frozen the pre-existing situation, the changes that did not take place will come into play. Several industries are likely to never return to their previous levels of activity. In addition, exchange rates with trading partners will have changed, reflecting different experiences with the pandemic, further changing the landscape. All of this may well slow productive investment down.

3.2. The good news

During the first lockdown period, European households have more than doubled their savings rate, as shown in Figure 1. (The 12% of GDP cut in spending fits well with a GDP fall of some 8% given

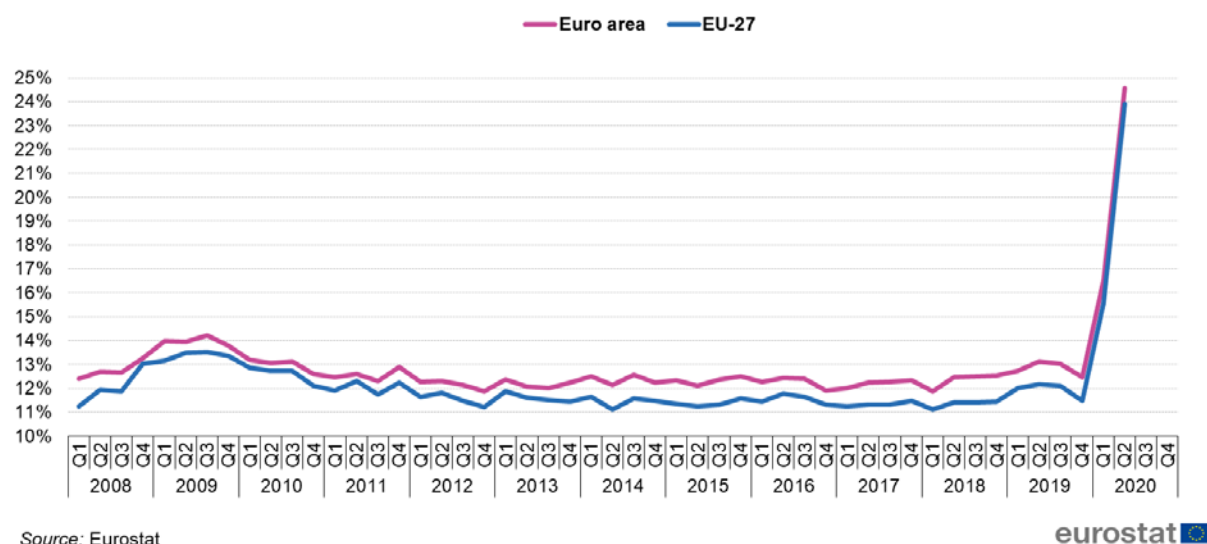
³ This principle goes back at least to Milton Friedman's permanent income hypothesis (Friedman, 1957).

⁴ A classic reference is Blanchard and Gali (2005).

expansionary fiscal policies.) Available information⁵ is that these savings have started to be run down after the lockdown, fuelling a sharp economic growth rebound. Much the same is likely to happen again after the next waves. This is the automatic part of the recovery.

Figure 1: Household saving rates (% of GDP)

Household gross saving rate, seasonally adjusted



Source: Eurostat

eurostat

3.3. The bad news

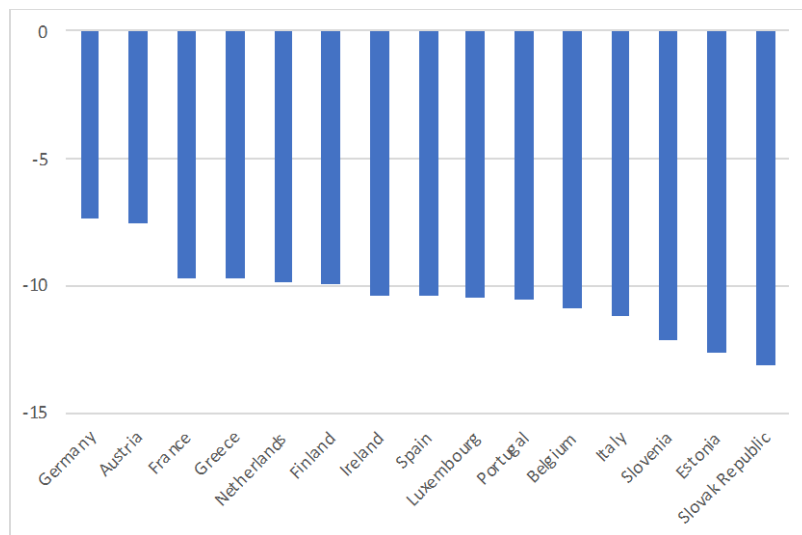
The overhang of the pandemic, described in Section 3.1, predicts that the recovery will be partial and weak, unless something is done about that. This is the first bad news.

A second bad news is the second wave, which makes the possibility of further waves in 2021 quite plausible.

A third source of concern is the disparity of effects within the euro area. So far, this paper has looked at the overall euro area. Figure 2 looks at growth rates in individual member countries. It is based on estimates produced by the Organisation for Economic Co-operation and Development (OECD) in June 2020. Interestingly, the OECD has looked at the impact of a second wave at end-2020. The figure plots the estimated growth rates for 2020. The impact ranges for a 7.3% decline in Germany to 13.1% in the Slovak Republic. Such a difference, or asymmetry, stands to complicate the recovery in several ways. First, it will call for much more policy support in some countries. This concerns fiscal policies, and therefore public borrowing, but also the common monetary policy, which is ill-adapted to asymmetric shocks.

⁵ The latest data displayed in Figure 1 are from 28 October 2020.

Figure 2: OECD estimates of GDP growth in 2020 in the euro area (double-hit scenario)

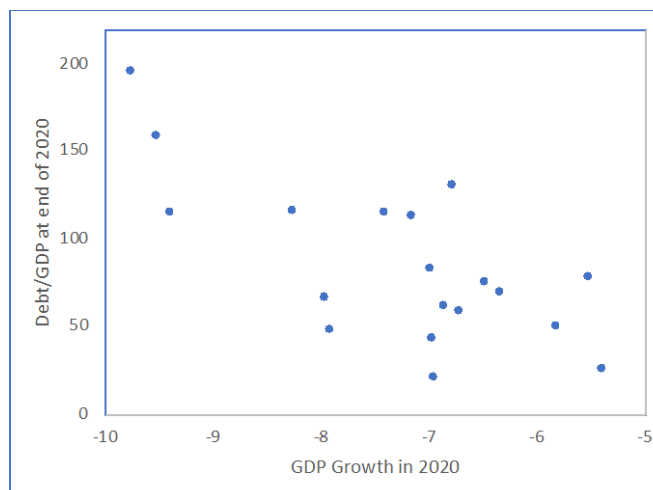


Source: OECD Economic Outlook No. 107, June 2020, and author's calculation.

Note: The OECD assumes a "double-hit" scenario whereby a second wave occurs in October-November, but a weaker one than the first wave. It also assumes that there is no further wave.

Regarding fiscal policies, Figure 3 compares the growth declines over 2020 in individual countries and their public debts at the end of that same year. The forecasts are those of the European Commission as available from AMECO online. In contrast to the OECD, they have not yet factored a second wave, so they differ from those presented in Figure 2. The figure strongly suggests that the countries worst hit by the pandemic typically are also those where public debts are highest. The Recovery Fund is meant to address this double asymmetry, but the orders of magnitude are not commensurate with the asymmetry displayed in this figure.

Figure 3: Growth and public debts in the euro area at the end of 2020



Source: European Commission, AMECO online.

3.4. Three big policy issues

3.4.1. No premature retrenchment of fiscal policies

Saddled with significantly higher debts, many governments will be tempted to declare victory once the pandemic is under control and quickly bring their large budget deficits down. This would be a major policy mistake, an echo of what happened after the Great Financial Crisis a decade ago. Indeed, the previous analysis argues that the quick resumption of growth made possible by large accumulated household savings will not last due to several headwinds. Fiscal policy will have to remain expansionary, probably for a couple of years, until the recovery is broad-based and driven by corporate investment, which will only occur when private consumption is strong.

The downside of continuing fiscal policy support will be the further accumulation of public debts following the large increases during the pandemic period. To make matters worse, Figure 3 shows that the continuing debt build-up will likely be larger among the initially highly indebted countries. It is easy to foresee increasing pressure to cut deficits and indeed aim at bringing debts down. This is where the ECB enters the picture.

The reason why fiscal policy will have to bear the brunt of post-COVID expansionary macroeconomic policies is that, despite its oft-repeated assertions, the ECB has all but exhausted its ability to raise the activity level on its own. It may, however, play a crucial supporting role. In fact, this is what it has been doing since the breakout of the pandemic. As shown in Table 2, the ECB has been indirectly financing a large part of new debt issues by its member governments and it will have to do so until expansionary fiscal policies are not needed anymore.

3.4.2. Monetary financing of budget deficits

One major reason for this indirect financing of budget deficits to continue is to alleviate justified fears about these deficits. Such fears can be based on principles, namely that lasting deficits are bad per se. This view is not valid at times of economic hardship. Indeed, governments and the Commission deserve praise for having discarded such a view at the outset of the pandemic. Another reason to fear continuously large deficits is that the financial markets stand to be spooked by high and rising public debts. After all, in 2010-11 several euro area countries were drawn into crisis at debt levels much lower than those that are likely to be reached by end of 2021 (as the calculations in Section 2 suggest). The ECB can go a long way to quelling these fears. It did so in 2012 with the celebrated “whatever it takes” statement by its President. It did so again earlier this year with the announcements of its asset purchase programmes (APP and PEPP)⁶.

Monetary financing of budget deficits, in turn, raises another fear that it unavoidably leads to high inflation. This has been historically the case, but under different situations, when money created by a central bank quickly ended up in consumer hands. This has not been the case since the Great Financial Crisis and, indeed, the massive amounts of money created by QE have been met by lower, not higher inflation.

3.4.3. Raising inflation

In fact, since 2008, many central banks have continuously undershot their inflation targets. It not yet fully understood why, even though many potential explanations have been advanced. Among them is the presence of a vicious circle: low inflation becomes entrenched when it lasts, because expectations

⁶ The early misstatement of the President, that she was not responsible for interest spreads, is another proof, *a contrario* this time, of the power of the ECB in this matter.

that it will continue result in slower wage and price adjustments. Central banks have tried to raise expectations through communication, but statements that are not followed by results soon lack credibility. When inflationary expectations remain low, nominal interest rates decline and can hit the effective lower bound at zero or below. At that stage, the central bank loses its classic tool, the interest rate, and resorts to nonstandard instruments, mostly QE, which have not been powerful enough to raise inflation. Arguably, this circle has played a role in the euro area.

Another reason for stubbornly low inflation is that economic fluctuations now have limited effects on the inflation rate. This is often defined as a flattening of the Phillips curve, which describes this effect. There is indeed evidence that the Phillips curve has become flatter, but not absolutely flat.⁷ This means that a strong enough increase in the level of activity will eventually raise inflation, and therefore inflationary expectations. Under this interpretation, inflation has been too low in the euro area because growth has been subdued, in spite of ECB's best efforts, because fiscal policy has been too restrictive, shifting from austerity to neutrality.

Since the pandemic outbreak, fiscal and monetary policies have been both expansionary. This rare policy alignment has so far succeeded in preventing an economic collapse. Inflation has declined, but not much in view of the negative growth rates, which is likely to also be the result of the alignment of fiscal and monetary policies. This observation further strengthens the argumentation in favour of a continuation of this alignment throughout the recovery phase. It will not only firm the recovery up but also make it possible to finally raise the inflation rate to its target.

⁷ For recent evidence and a review of research, see Del Negro (2020).

4. FISCAL DOMINANCE AND CENTRAL BANK INDEPENDENCE

4.1. Is fiscal dominance a threat to central bank independence?

Fiscal dominance is usually seen as the main threat to central bank independence. Fiscal dominance occurs when a government, formally or informally, forces the central bank to finance its deficits. When this occurs, monetary policy is hijacked: the interest rate and money creation are driven by budgetary needs, not by the usual commitment to price stability. This arrangement initially makes deficits painless, which creates an incentive for governments to provide ever more public goods and services without raising taxes, or even while lowering taxes. This is indeed what lies behind all hyperinflation episodes, and even more moderate inflation episodes. These episodes only come to an end when the central bank is given formal independence along with a clear mandate to achieve price stability.

This lesson from history lies at the heart of the Maastricht Treaty. The ECB is formally very independent and its mandate sets price stability as its overriding objective. Any change to either independence or the mandate would require a Treaty change, which must be approved by all member countries. It is most unlikely that such a change will ever be agreed upon. The independence of the ECB is seen as rock-solid.

Why then is the issue surfacing at this stage? The reason lies in the distinction between formal and informal arrangements. The previous section has argued that, once the pandemic is over, fiscal policies will have to remain strongly expansionary and the ECB should keep indirectly financing the resulting budget deficits for as long as needed. This is not a statement about formal independence, but it can be seen as a signal of fiscal dominance as the ECB goes along on its own free will. The result would be that a strongly independent ECB accepts to act in a way that looks like the much-feared fiscal dominance, informally giving up its independence. It would seem easy to reject this possibility, but it is not quite the case.

First, consider the case against any informal threat to independence. The argument for joint expansionary fiscal and monetary policies rests on the need to lift the euro area economy after it emerges deeply wounded from the pandemic, unable to achieve a sustainable recovery without strong policy support. An independent ECB will always be able to continuously evaluate the relevance of this argument. When it considers that the argument is no longer relevant, it will be perfectly free to change its policy stance. In particular, it will be driven by its price stability mandate when it determines that the policy stance contradicts that mandate. For a while, it might look like it has abandoned its price stability mandate but this can only last as long as inflation is below target. In effect, all along, the ECB will remain in full control of its policy stance, even if that means generously financing indirectly the budget deficits of its member countries.

Things are subtler, however. Imagine the case when some countries need to pursue their expansionary fiscal policies for longer than initially expected. Again, Figure 3 suggests that it will be the case of the most highly indebted countries, while the others may already have achieved a sustainable recovery. Inflation will still be subdued in the high-debt level countries but rising in the low-debt countries. As the overall euro area inflation rises, the ECB will want to raise the interest rate and to discontinue its asset purchase programs. This would have two dangerous effects on the high-debt countries. A higher interest rate will raise their borrowing costs and debt service, and the latter would deepen their budget deficits. In this increasingly fragile situation, the end of indirect deficit financing could well trigger a new debt crisis and endanger the stability of the financial system. Even though it is fully independent, the ECB might conclude that a debt crisis would lead to yet another recession, which would reduce inflation. Or, as in 2012, it could fear a breakup of the euro area, nimbly called a risk of currency

redenomination. Both prospects could very well lead the ECB to keep interest rates low and to continue to indirectly finance budget deficits. If it successfully manages to prevent a new debt crisis, inflation will rise in the low-debt countries, quite possibly bringing the overall euro area rate above target. In effect, the ECB would become hostage to the high-debt, large-deficit countries. Whether it is a formal or an informal hostage makes little difference. The ECB would be formally independent but informally dependent and subject to fiscal dominance.

This example shows that fiscal dominance cannot be ruled out, even for a central bank that is formally highly independent. Yet, an independent central bank can always carry out its chosen policies. In the example, the ECB has the choice between carrying out a policy that looks like driven by fiscal dominance – keep supporting fiscal policies that are in need for support – or refusing to appear as such and adopt a policy that is risky, possibly opposite to what it prefers – take the risk of a debt crisis.

A safe conclusion is that an independent central bank can take the risk of appearing subject to fiscal dominance. Yet, appearances matter in monetary policy matters. It shapes expectations of future policies, crucially regarding inflation and financial stability. The next section considers what the ECB can do to shape expectations in a stabilising way.

4.2. The ECB needs to update its strategy

The relationship with member governments should be a central concern of the strategy review currently under way at the ECB. The previous strategy was adopted in the late 1990s, and marginally adjusted during the previous review in 2003. The debt crisis has revealed the limits of this strategy, essentially built for quiet times, moderate public debt levels and positive interest rates. The historical situation created by COVID-19 lies even further away from the logic of the 1990s. The existing strategy may remain reasonably well-adapted to normal times, but the strategy review must also deal with unusual times, most of which are unpredictable.

Understandably, political sensitivities have prevented a precise discussion of the ECB's relationship with member governments. Yet, the ECB is unique in that it faces several governments, which it cannot simply follow other central banks' experience. In practice, the ECB has vowed to not look at individual countries, even if some are in crisis, focusing instead at overall euro area information. In order to avoid the appearance of fiscal dominance, it has shunned formal exchanges with member governments and, until the pandemic, it has continuously made statements that call for lower deficits.

Ideally, governments and central banks should coordinate their macroeconomics to achieve their goals. In practice, they rarely do so for all sorts of reasons (Bartsch et al, 2021). It is incumbent on the ECB to adopt a strategy that is reasonable, transparent and widely understandable. Here are a few suggestions.

4.2.1. The inflation target

The “close to but below two” inflation rate target has been criticised over and over again for being vague, asymmetric, narrow and too frequently unmet. Hopefully, this definition of price stability will be changed to alleviate these concerns. The debt and pandemic crises raise more complex issues, though.

The crises have shown that it is important for a central bank to be able to use its interest rate instrument, which is more potent than the new nonstandard ones. The effective lower bound, which disables the interest rate instrument, is likely to be reached more often when the inflation rate is low in non-crisis times. There have been proposals to raise the inflation target to modest levels such as 3% or 4%. Central banks have nearly rejected these proposals for good and bad reasons.

Recently, the Federal Reserve has adopted an average inflation targeting (AIT) strategy. The Fed will now aim to reach its target not year after year but on average over several years. Thus, periods of inflation above target will alternate with periods below target.⁸ The new Fed strategy reflects concerns about the current situation. Like the ECB and several other central banks, in recent years the Fed has failed to achieve its target and, after the outbreak, it has brought its interest rate to zero. It has indicated that it does not intend to prematurely withdraw its currently accommodating stance, including the indirect financing of federal budget deficits, as suggested in Section 3.4. This is precisely a situation where it might appear to be subject to fiscal dominance. The adoption of the AIT strategy aims at several objectives:

- Bring inflation up. Since inflation has been below target for a while, it now will have to keep it above target for a substantial period of time.
- This, in turn, should make it possible to raise the interest rate away from the lower bound.
- All along, avoid the appearance of fiscal dominance since the strategy does not refer to fiscal policy.

The announced AIT has been criticised for being too vague (in particular, it does not specify over which period the average is to be met) and poorly communicated. As a novel experiment, it stands to be refined and improved, but its objectives well match both normal times and the current crisis situation. The ECB could be well inspired to adopt its own variant of AIT. It would put to rest decades-old criticisms of its target definition and allow it to deal with recovery period.

4.2.2. Financial stability

It has taken some time for the ECB to accept responsibility for financial (markets and banks) stability. Yet, this is an unavoidable responsibility because, when crises erupt, the central bank is the only institution that can instantly mobilise virtually infinite resources by creating money. The ECB has been reluctant to get there for many reasons:

- It does not want financial institutions to bet on being saved from excessive risk taking.
- Inasmuch as institutions from different countries may face different risks, its interventions may end up concerning more some countries than others, which would raise questions of fairness and incentives.
- Since these interventions are inherently risky, the ECB may occasionally suffer deep losses. Indeed, some countries have seen their central banks lose all their capital during dramatic events. How to react to such deep losses and how to recapitalise the central bank would be decided by governments, which could hurt the ECB's independence. Equally concerning is the possibility that the losses would be the result of one country's difficulties and yet they would end up being financed by the other countries.

In many countries, there exist formal agreements between the government and its central bank. These agreements usually set the rules for interventions in financial markets during periods of turmoil, including the terms designed to not encourage risk taking by financial institutions, the respective responsibilities of the government and of the central bank and who will bear potential losses. Such agreements do not limit the central bank independence and they remove the risk of fiscal dominance.

During the financial crisis, in the absence of such an agreement, the ECB did not intervene, leaving the task instead to governments, which had to hurriedly borrow vast sums of money. This has led directly

⁸ AIT has long been debated. A recent contribution is Budianto (2020).

to the debt crisis in Cyprus, Ireland and Spain. The fact that there exist more than one government in the euro area does not prevent such a formal agreement, even though it could be more difficult to design. Yet, it is a natural next step after the transfer of the responsibility of bank supervision to the ECB. Such an agreement could take the form of an improvement of the existing bank resolution regime and of the financial market oversight framework.

4.2.3. Relationship with member governments

Even if coordination between fiscal and monetary policies is unlikely to be reached, there is much to be gained from exchanges of information between the ECB and its member governments. It concerns sharing analyses of the economic situation at the highest level (there already are many exchanges at technical levels) and exchange of views on impending policy choices. In the past, the ECB has been reluctant to hold formal meetings with governments for fear that it would be seen a limit to its independence. Two decades down the road, the ECB has established its independence and such fears are no longer warranted.

It is already the case that the ECB President frequently attends high level meetings with governments. Undoubtedly, they must discuss several issues, but these exchanges are informal. Formal meetings (composition, frequency, agendas are not discussed here) have several advantages:

- Difficult issues are not ignored when they are inconvenient, which means when they are important.
- While no policy decisions should be made during such consultations, if only to preserve the independence of the ECB, future decisions can be evaluated with a view of improving them.
- They require detailed preparation at technical and political levels, thus ensuring that all parties have evaluated all issues of collective importance.
- They would allow the ECB to gain a better understanding of national circumstances.

4.3. The ECB needs to issue its own debt instruments

For its monetary operations, standard and nonstandard alike, the ECB buys or sells high-quality assets against money in exchanges with financial institutions. These assets can be government or private debt instruments, but public assets represent the largest part of trades. There are a number of problems associated with ECB purchases of public debt instruments:

- The fact that the ECB stands ready to purchase large quantities of these instruments has long eliminated spreads among debts issued by different countries, irrespective of the riskiness of these debts. After the financial crisis, spreads have started to emerge, leading to the debt crisis. Various interventions by the ECB have followed to eliminate what it called the currency denomination risk. In this way, the ECB has been drawn into specific countries debt risks, opening up the issue of fiscal dominance.
- In order to avoid supporting some country debts more than others, the ECB buys (via the national central banks) country debt instruments in the proportion of each country's share ownership of the ECB. Since national debts considerably vary in size, it is conceivable that the ECB faces the possibility that some countries' instruments are in short supply. This is a serious possibility for the PEPP programme.
- By holding public debts, the ECB faces the risk that a government could default. In that case, as shareholders of the ECB, all other member countries would suffer losses. This consideration has long hampered the management of the Greek crisis.

A simple way-out is for the ECB is to refrain from using national public debt instruments. A solution is for the ECB to issue its own debt instruments, which would become truly European safe assets. It would remove any potential aspect of fiscal dominance and any risk of losses due to national fiscal policies.⁹ The down side of this substitution is that the ECB would forfeit its ability to indirectly finance budget deficits, a procedure that has played a significant stabilising role over recent crises. The creation of the Recovery Fund, which allows for the collective mutual support of member governments, is an alternative arrangement, which has the merit of breaking, again, the risk of fiscal dominance. Emergency financing of the Recovery Fund by the ECB could be included in the financial stability agreement suggested above.

Replacing public debt instruments with the ECB's own debt can only be a long-drawn-out process. Indeed, rapid sales of public debt instruments could depress their values, possibly even threatening financial stability. In addition, this is not the time to do it while the ECB is conducting large scale purchases of public debts. Yet, the strategy review is a good time to evaluate this possibility, which would be phased in gradually when normalcy will have returned.

⁹ Eichengreen and Gros (2020) make a similar proposal.

5. CONCLUSIONS

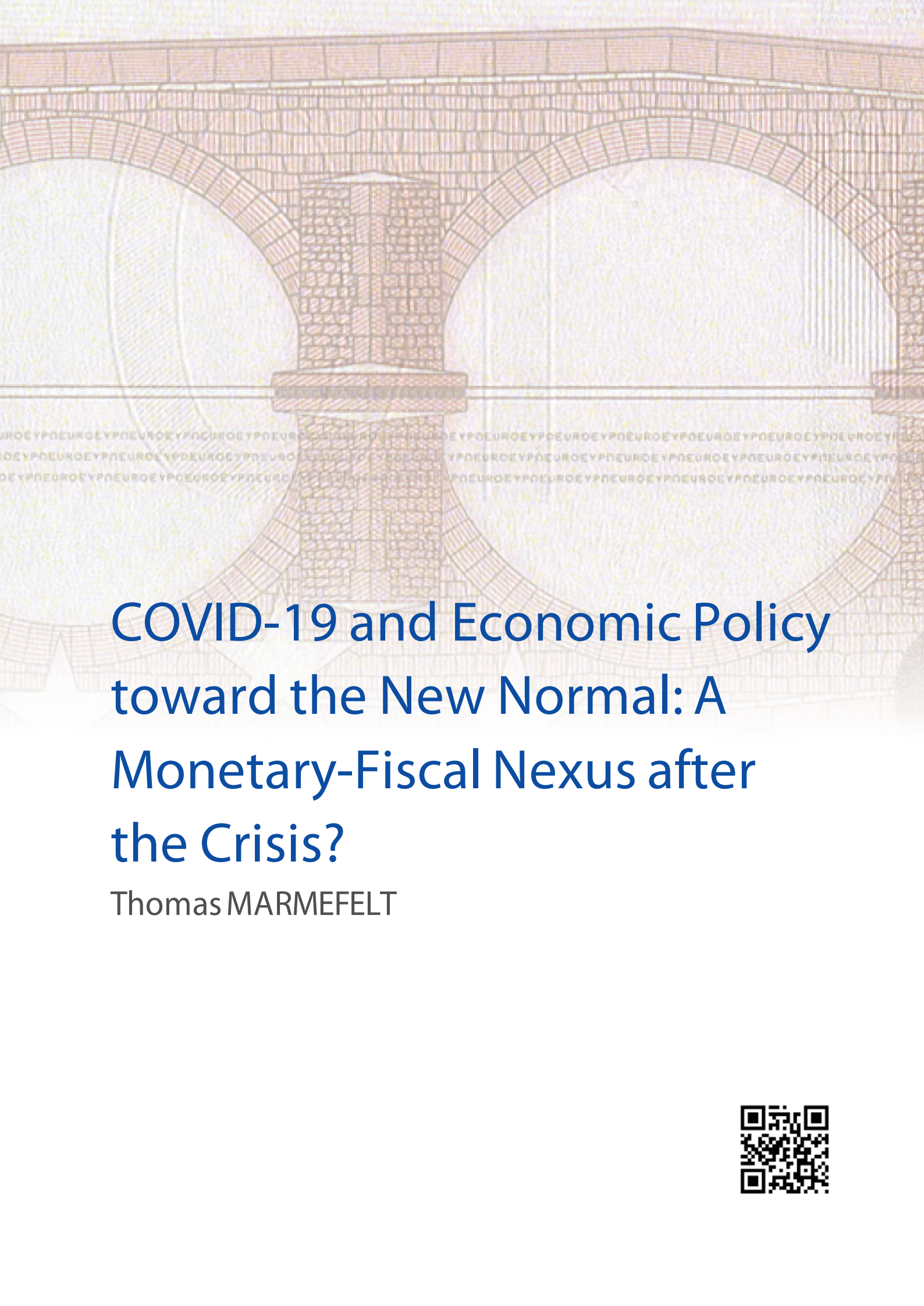
The COVID-19 pandemic will leave the euro area economy quite weak. It will be essential that both fiscal and monetary policies remain mobilised to achieve a sustainable recovery. The risk is that governments feel the need to promptly reduce their indebtedness and, maybe, that the ECB quickly attempts to return to normalcy, ending its asset purchases programmes and lifting its interest rate from negative territory, and bringing the inflation rate to its target.

The ECB will have to confront some implications of its very active and welcome actions during the pandemic. Having indirectly financed a large share of new public debts by its member governments, it will have to tread a fine line between its price stability mandate and the need to avoid disrupting debt markets, which could lead to fiscal dominance and, some fear, a loss of independence.

The solution for the ECB is to use its announced strategy review to provide more clarity, both to its objectives and to its procedures. Average inflation targeting stands to help out, particularly at this juncture but in normal times as well. Other proposals concern the need to develop its relationship with member governments and the issuance of its own debt instruments.

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COVID-19 and Economic Policy toward the New Normal: A Monetary-Fiscal Nexus after the Crisis?

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Abstract

Current developments during the COVID-19 pandemic involve strongly complementary monetary and fiscal policy, but both as responses to COVID-19 and not the outcome of an emergent monetary-fiscal nexus. Therefore, the ECB maintains its independence by using unconventional monetary policy measures to reach price stability, according to its mandate.

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LIST OF ABBREVIATIONS

ABC	Austrian business cycle theory
ABM	Agent-based model
APP	Asset purchase programme
BIS	Bank for International Settlements
CLM	Community Loan Mechanism
DSGE	Dynamically stochastic general equilibrium
ECB	European Central Bank
EIB	European Investment Bank
EP	European Parliament
ESCB	European System of Central Banks
ESM	European Stability Mechanism
EU	European Union
FC	Fiscal Compact
FIH	Financial instability hypothesis
GDP	Gross domestic product
ICT	Information and communication technology
MFF	Multiannual Financial Framework
MFI	Monetary financial institution
NGDPLT	Nominal GDP level targeting
NGEU	Next Generation EU instrument
NPL	Non-performing loans
PEPP	Pandemic emergency purchase programme
PSPP	Public sector purchase programme

QE	Quantitative easing
RFF	Recovery and Resilience Facility
SDC	Sovereign debt crisis
SGP	European Stability and Growth Pact
TLTRO	Targeted longer-term refinancing operations
TFEU	Treaty on the Functioning of the European Union
ZLB	Zero lower bound

EXECUTIVE SUMMARY

- **The European Union has responded to the COVID-19 crisis with expansionary fiscal and monetary policy.** The fiscal policy includes a recovery fund under Next Generation EU, which focuses on the green and digital transitions. The monetary policy includes unconventional policy measures, in particular asset purchases under the pandemic emergency purchase programme and targeted longer-term refinancing operations to support bank lending to businesses and households, but that is consistent with independent central banking.
- **A sharp decline in GDP has been met with a growing money supply, raising concerns of future non-performing loans.** This can be understood in terms of financial instability and malinvestment due to credit creation, warranting consideration of the production structure.
- **A disequilibrium approach to output-inflation dynamics considers monetary-fiscal policy interactions with production as a process in time, involving interactions among heterogeneous agents.** Coordination differs among industrial sectors. The supply of credit is not always met by the same demand for credit due to expectations and financialisation. Unconventional monetary policy needs to be combined with fiscal policy for growth. Production occurs in several stages, involving a capital structure based on technological complementarities and an asset structure, involving reshuffling. Structural change matters.
- **Experimental studies for monetary-fiscal policy interactions in an evolutionary, complex economy suggest that fiscal rules are destructive to stability and growth and that a dual-mandate monetary policy is preferred.** Macroeconomic outcomes emerge out of interactions among heterogeneous agents coordinating through adaptation. One study suggests that unconstrained fiscal policy and a monetary policy targeting both price and employment stability would achieve lower GDP volatility and a lower likelihood of crises without increasing inflation and public debt to GDP.
- **The common European fiscal response (Next Generation EU), which aims at green and digital transitions, is crucial to recovery.** Next Generation EU is seen as strongly complementary to the pandemic emergency purchase programme and the targeted longer-term refinancing operations by the European Central Bank. Public investment provides an important instrument for the green and digital transitions, providing suitable infrastructure. National recovery and resilience plans need continual evaluation to avoid public malinvestment.
- **The monetary policy measures have injected liquidity into the banking system and supported lending by banks.** In contrast to other proposals, such as helicopter money and zero-coupon perpetuities, debt monetisation has been avoided while providing adequate liquidity preventing deflation. Liquidity injections need to be controlled.
- **The strong complementarity between monetary and fiscal policy is related to the pandemic, but not a monetary-fiscal nexus threatening central bank independence.** Fiscal and monetary policy have responded to COVID-19 and monetary policy has focused on price stability, according to the given mandate. There is no monetary-fiscal nexus threatening central bank independence, but the new normal will have high private and public debt burdens to address through debt restructuring.

1. INTRODUCTION

To address the socioeconomic consequences of the coronavirus (COVID-19) pandemic, the European Union (EU) has developed a fiscal expansion package for the period 2021-2027, which aims at sustainable and resilient recovery through massive public and private investments, while meeting its targets for green and digital transitions. The European Council agreed in a Special Meeting on 17-21 July 2020 to a comprehensive package of EUR 1,824.3 billion. This package combines the multiannual financial framework (MFF) 2021-2027 and an extraordinary recovery effort under the Next Generation EU (NGEU) instrument to build long-term recovery and resilience. NGEU and MFF work together by putting the recovery within the framework of long-term budget policies involving the green and digital transitions (European Council, 2020). The European Council explicitly combines fiscal measures aimed at recovery from COVID-19 with measures aimed at supporting the green transitions within the MFF framework. First, a climate target of 30% will apply to the total amount of expenditure from the MFF and NGEU, in accordance with the objective of EU climate neutrality by 2050, the new 2030 climate targets of the EU, and the Paris Agreement. Second, the MFF for the period 2021-2027 involves the provision of adequate capital to the European Investment Bank (EIB) to support MFF and NGEU instruments and EIB activity to fight climate change and to digitalise the EU economy. Although all items of EU financing are to be included in the MFF, the rapidly changing situation of the COVID-19 pandemic warrants special instruments outside MFF ceilings. Third, within the MFF, digital transformation is supported through the instruments Digital Europe, the Connecting Europe Facility, and Horizon Europe. The Recovery Fund NGEU provides the EU with the necessary means to address the challenges posed by the COVID-19 pandemic. This allows the Commission to borrow up to EUR 750 billion on the markets, out of which EUR 672.5 billion is earmarked to the Recovery and Resilience Facility (RFF), which provides funds to the countries and sectors most affected by the crisis for 2021-2023 requiring Member States to develop national recovery and resilience plans that contribute to green and digital transitions (European Council, 2020). Hence, EU fiscal policy puts the recovery of European economies from the negative socioeconomic consequences of the COVID-19 pandemic within the context of the green and digital transformation of European economies.

The European Central Bank (ECB) has continued to pursue an accommodative monetary policy. On 10 September 2020, its Governing Council reconfirmed its accommodative policy measures, considering a robust convergence of inflation to its target in the medium term: keeping ECB interests unchanged, continuing its purchases under the pandemic emergency purchase programme (PEPP, with a total envelope of EUR 1,350 billion at least to the end of June 2021 or when the Governing Council considers the COVID-19 crisis phase to be over), and continuing purchases under the asset purchase programme (APP), at a monthly pace of EUR 20 billion together with purchases under the additional EUR 120 billion temporary envelope until the end of the year, while providing ample liquidity through its refinancing operations, in particular targeted longer-term refinancing operations (TLTRO) (ECB, 2020a). Both the APP – purchasing private and public sector securities – and TLTRO – supporting bank lending to businesses and households – belong to the non-standard monetary policy measures that the ECB introduced during the global financial crisis (GFC) and the subsequent sovereign debt crisis (SDC) as a second phase of the GFC (ECB, 2020b). The response to COVID-19 adds more of these, such as the PEPP. This expansionary accommodative monetary policy may nevertheless be consistent with an independent monetary policy based on convergence to an inflation target.

As a consequence of COVID-19, real gross domestic product (GDP) declined by 11.8% during the second quarter 2020 and is estimated by ECB staff to decline by 8% for 2020, turning to a growth of 5% in 2021 and 3.2% in 2022. The annual growth rate of broad money (M3) is 10.2% by July 2020 due to domestic credit creation, asset purchases, and higher liquidity preference in the money-holding sector.

ECB staff estimate inflation rates of 0.3% in 2020, 1% in 2021, and 1.3% in 2022 (ECB, 2020a). Hence, as inflation is estimated to be below target for the period 2020-2022, an expansionary accommodative monetary policy is consistent with what an independent central bank with a price stability mandate would pursue. However, M3 includes bank money – the deposits banks create when they extend credit – so M3 reflects credit creation in the economy. In a crisis, there is a precautionary motive for holding money, but credit creation in a declining economy means a substantial increase in the liquidity of the economy, which opens the door for financial instability (causing debt-deflation) and malinvestments (causing liquidation) in the future, when the production structure is considered. Consumers have increased their saving due to COVID-19, but more due to being forced as a consequence of lockdown measures than for precautionary measures (ECB, 2020a).

The COVID-19 crisis, like the GFC, raises concerns about non-performing loans (NPL), which occur as the economy sharply declines. The annual growth rate of loans to non-financial firms is 7.0% by July 2020 (ECB, 2020a). Although the COVID-19 crisis is not a banking crisis caused by credit expansion, it made the economy come to a halt, and the economic recovery will depend on the NPL resolution (Ari et al., 2020). NPL may be understood as financial instability, which is a consequence of the complexity of the financial structure.

According to Minsky's (1986, 1992) financial instability hypothesis (FIH), the economy, whose financial structure is complex, involves both stable and unstable financial regimes, and prolonged prosperity may transform financial relations from stable to unstable, which may cause debt-deflation. Hedge finance is stable, as the cash flow from operations cover contractual payments, while a speculative finance unit requires the unit to issue new debt to cover for the principle while it pays the interest from its cash flows. The Ponzi finance unit fails to cover both payment of the principle and interest, reducing equity through the sale of assets and new loans. The unstable financial relations – speculative finance and Ponzi finance – would increase the likelihood of NPLs. Hence, a stable recovery may become unstable, as some firms take too much debt early.

NPL may also be understood in terms of malinvestment caused by credit expansion. According to Austrian business cycle theory (ABC) (see e.g. Mises [1912] 1924; 1928; Hayek [1929] 1976/2016; [1931] 1976/2016; Huerta de Soto 2006), credit creation causes economic cycles by creating an artificial boom that leads to a bust, because it injects liquidity into the real economy beyond what is backed by voluntary saving, thus distorting the production structure. Rather than being a random event, ABC explains recessions by a wedge between saving and investment due to credit creation causing an unsustainable increase in aggregate demand, while the FIH explains them by stable expansion making firms overleveraged, because firms underestimate the variance of expected profits, thus making these two perspectives complementary, since both find expansion to be the cause of the contraction (Mulligan, 2013). In a banking crisis caused by too high a liquidity, excessive credit creation leads to malinvestments, as high profit expectations during expansion increase leveraging, which gives financial instability as those profit opportunities will not be met when the expansion ceases. Injecting liquidity to recover from a crisis involves risks of creating too optimistic profit opportunities again, given the uncertainty around COVID-19.

Expansionary monetary policy is seen as a cause of credit creation, giving unsustainable growth according to ABC (Garrison, 2001), while it will not increase investment if current and anticipated profits are low according to FIH (Minsky, 1986). Hence, the production structure must be considered.

Although unconventional monetary policies helped banks and other financial institutions recover from the GFC and prevented the interest rates on government from rising during the SDC, they have not stimulated economic growth, unless combined with expansionary fiscal policy, warranting a disequilibrium approach to the analysis of output-inflation dynamics rather than a general equilibrium

one, which focuses only on some aggregate interactions in order to correct distortions due to price rigidity (Gaffard et al., 2018). This explains the expansionary fiscal policy for recovery from the COVID-19 crisis. However, a disequilibrium approach has implications. Monetary policy cannot simply control inflation by changing interest rates because agents and markets are heterogeneous. When considering the economy as a complex, evolving system rather than a general equilibrium system, price turbulence – high price volatility – rather than friction is a problem, and that turbulence of relative prices during high inflations causes intertemporal markets to disappear due to short-memory/short-foresight adaptation (Leijonhufvud, 1997).

Coordination in markets relies on price signals, but inflation disturbs price signalling by changing relative prices, which causes distortions in the capital structure of the economy (Horwitz, 2000). When markets are in disequilibrium, price rigidity may contribute to market coordination and the evolution of imbalances among markets must be assessed, so there are no systematic links between persistent low interest rates and inflation (Gaffard et al., 2018). Coordination operates differently between various sectors in the economy. Fiscal rules can be asymmetric and aggravate fluctuations, bringing in the temporal distribution of excess supply and excess demand for consideration in the policy mix, where quantitative easing (QE) would shape banks' leveraging, which is the mechanism for how money is created today (Gaffard et al., 2018). When interests are at or close to zero, QE provides a means for central banks to increase the liquidity of banks by buying long-term securities, including government and corporate debt, with newly created bank reserves, in order to stimulate investment and economic growth. As most money today is credit money, created by banks, QE would stimulate the growth of credit money. However, investments depend on expected profit opportunities. As Gaffard et al. (2018) argue, the increased supply of credit due to QE has not been matched by a corresponding demand for credit, partly due to the low demand expectations of firms and households (further depressed by fiscal austerity policies) and partly because of the increasing financialisation in recent decades. Battiston et al. (2018) point out that due to financialisation, both the liquidity remaining in the financial sector and the financial activities of non-financial firms have increased. Hence, more liquidity does not necessarily lead to new investment in the real economy, thus being excess liquidity. QE is reversible and offers the opportunity to reduce liquidity.

For new investment to happen, restoration of confidence is crucial to create demand for investible funds. First, structural maladjustments matter. Haberler ([1937] 2011) points out that maladjustments in the structure of production may turn expansion into contraction, since bottlenecks may arise in both the consumption goods industries and capital goods industries, while no interest rate would lead to revival when the demand for investible funds is low, and there may be a flight to liquidity keeping the supply of investible funds low too, but when liquidity is high enough, money will become available at the capital market when confidence is restored. Hence, while expansion involves the seeds of its own destruction, along FIH and ABC, high liquidity is insufficient for recovery unless confidence is restored.

Second, financialisation – the growth of the financial sector relative to the real economy and the greater involvement of non-financial firms in financial activities not directly related to production – is destabilising. Empirical results suggest that financialisation has increased in the euro area during the last two decades and could be obstructive to the EU 2030 agenda, because excessive financialisation hampers economic growth, reduces innovation, contributes to inequality, and may cause financial instability (Battiston et al., 2018). Concerning economic growth and financial instability, the arguments resemble those of ABC for unsustainable economic growth due to malinvestment and FIH for financial instability.

According to Battiston et al. (2018), economic growth is hampered because a larger proportion of credit is directed to unfruitful investment projects and financial instability arises from the increasing

leveraging of interconnected financial institutions and the risk of the mispricing of assets, while innovation suffers from the separation of risk-taking and rent-extraction and inequality increases as top earners' bargaining power becomes stronger and public budgets give support to financial institutions in times of crisis. However, credit yields innovation, according to Schumpeter (1911), while ABC considers credit a harmful injection effect. Combining these two perspectives, a monetary regime must keep the credit creation sufficient to meet the financing requirements of innovation, while avoiding cycles caused by excessive credit creation (Marmefelt, 2018). Such a monetary regime would need to prevent excessive financialisation.

What would this mean to the future policy after the crisis in the new normal we do not know? The massive coordinated monetary and fiscal expansion to prevent serious socioeconomic problems in case of an economic collapse and to secure future economic growth will increase the public deficit and public debt, while central banks have resorted to purchases of government bonds to maintain monetary transmission, as interest rates are close to the zero lower bound (ZLB). Is there an emerging monetary-fiscal nexus? May fiscal policy dominate? What policy trade-offs does the ECB face? How could an ECB that lacks a fiscal counterpart maintain its monetary independence? This paper reviews the literature to make conjectures of the new normal.

2. HETEROGENEITY, TIME, AND MONETARY-FISCAL POLICY INTERACTIONS

In order to analyse the emergence of a monetary-fiscal nexus and policy trade-offs, we should consider monetary-fiscal policy interactions and the production process together. This means an economy, where production is a process in time, involving heterogeneous agents.

Production involves several stages. Lundberg (1937) develops sequence analysis, in which he considers production time and expenditure periods, observing sequences of payments in time, expressed in the velocity of circulation of money that in a well-developed credit system through bank clearing reduces the quantity of money required. Using Wicksell's ([1906] 1966) cumulative process and pure credit economy, Lundberg effectively allows for heterogeneous money, where bills of exchange are private monies and commercial banks create credit money, which is endogenous, demand-driven money reflecting the capital structure (Marmefelt, 2018). According to Lachmann ([1956] 1978), capital is a heterogenous structure, whose composition changes over time, based upon technological complementarities among entrepreneurial plans, and an underlying asset structure, in which capital goods and money are operating assets, but the composition of capital may change through reshuffling capital without money, but the regroupings of capital between firms may be inconsistent, thus requiring money, which would be needed when correcting for mistakes requiring substantial reshuffling. Successful capital reshuffling funds itself to some extent through profits increasing net capital value, while failed capital reshuffling contributes to losses, suggesting multiple monies adapted to the financing needs of the capital reshuffling process rather than just more money (Marmefelt, 2018).

Making sure that money goes to productive investments is key in order to avoid the crucial problems with excessive financialisation observed by Battiston et al. (2018) who find that economic growth is hampered because a larger proportion of credit is directed to unfruitful investment projects and financial instability arises from the increasing leveraging of interconnected financial institutions and the risk of mispricing of assets. It makes sense to consider the complexity of production as well as disequilibrium market processes.

2.1. Macroeconomics for complex, evolving economies

Heterogeneity matters when markets are in disequilibrium and coordination involves sequential processes, while financial interlinkages matter to the formation of asset prices, the origin of crises, and the difficulty of recovery, suggesting another approach to understand the monetary transmission mechanism than the New Keynesian dynamically stochastic general equilibrium (DSGE) one (Gaffard and Napoletano, 2018). Prior to the GFC, representative-agent models were the dominant paradigm, but a more disaggregated approach is necessary to understand key aspects of the Great Recession, studying the effects of firm and household heterogeneity might help us better account for the severity of the slow recovery as well as to understand the effects of monetary and fiscal policy on aggregate demand when monetary transmission involves more channels (Yellen, 2016). In addition, there is heterogeneity in the effects on various sectors of the COVID-19 pandemic (Becker et al., 2020).

Heterogeneity implies complexity and disequilibrium processes rather than general equilibrium. The disequilibrium nature of market processes, heterogeneous agents interacting in markets in disequilibrium, and financial interlinkages generating contagion phenomena matter when structural change and innovation create radical uncertainty in markets, so heterogeneous agents coordinate in disequilibrium markets subject to structural and technological change, according to Gaffard and Napoletano (2018), which is an experimental process rather than an intertemporal optimisation problem. Haldane and Turrell (2018) argue that in epidemics and crises, the economy is damaged

because people change their behaviours, while the digital transformation improves matching processes, reduces information asymmetry, promises to identify new risk factors, and offers substantial gains in productivity and climate change has non-linear effects on productivity, growth, and financial stability, and more fundamentally, heterogeneity at the micro-level yields non-linear responses and emergent outcomes at the macro-level.

In 1987, the Santa Fe Institute started the exploration of the economy as a complex, evolving system, accounting for process and emergence and applying nonlinear dynamics to economics, developing the Santa Fe approach, called the complexity perspective, the Santa Fe perspective, or the process-and-emergence perspective, which constitutes a dynamical systems approach, defining economies as adaptive nonlinear networks, or complex, evolving systems with the following characteristics (Arthur et al., 1997):

- **dispersed interaction:** parallel interaction among many dispersed agents;
- **no global controller:** controls by competition and coordination;
- **cross-cutting hierarchical interaction:** many levels of interaction with tangled interactions across levels;
- **continual adaptation:** agents revise their strategies as they accumulate experience;
- **perpetual novelty:** niches are continually created by new markets, new technologies, and new institutions;
- **out-of-equilibrium dynamics:** because new niches are continually created, the economy operates far from equilibrium.

This means that agents use various cognitive structures to make sense of their economic environment and interact within network structures, guided by institutions in a recursive way. Inflation is a monetary disequilibrium which alters relative prices and thereby induces producers to adapt their capital in a way that makes the capital structure inconsistent (Horwitz, 2000). Unemployment is a disequilibrium phenomenon, where adjustment is an out-of-equilibrium process, including coordination through constrain-decisions-constraints sequences where excessive financial asset prices may crowd out real investments which hurts productive capacity, and phases of construction and utilisation of productive capacity are no longer consistent with each other due to coordination failures in production (Amendola and Gaffard, 2010). This involves the coordination of multiple agents through continuous adaptation, where macroeconomic outcomes emerge (Axtell, 2006), focusing on the complexity of interactions (Colander, 2006). This approach uses a bottom-up approach to coordination through interaction, using an agent-based model (ABM). The important feature of ABMs is that they explain the overall evolution of a system by simulating the behaviour of each individual agent within it and then explicitly combining their micro-level behaviours to give a macro-level picture, adding most value when problems revolve around heterogeneity, complexity, non-linearity, emergence, heuristics, and detailed rules (Haldane and Turrell, 2018). ABMs can be used to study the effects of various combinations of monetary and fiscal policy with heterogeneous banks and firms.

2.2. Monetary-fiscal policy interactions in complex, evolving economies

Monetary-fiscal policy interactions in complex, evolving economies may be analysed using an ABM. Dosi et al. (2015) develop an ABM to analyse combinations of monetary and fiscal policies that yield the possibility of persistent fluctuations, recessions, and banking crises, acknowledging that dysfunctional financial markets and the emergence of the zero lower bound put a constraint on monetary policy (Eggertsson and Krugman, 2012), while financial crises put a constraint on fiscal policy (Reinhart and

Rogoff, 2009), which QE may relieve. Rather than relying on a representative agent, Eggertsson and Krugman (2012) distinguish between creditors and bankers, and they point out the importance that fiscal stimulus is effective to the extent debt-constrained agents benefit. Reinhart and Rogoff (2009) find that financial crises tend to increase public debt considerably, which they attribute to cuts in tax revenue and increased spending to address the recession. Dosi et al. (2015) consider the effect of austerity and euro area fiscal rules for a complex, evolving economy, where macroeconomic phenomena emerge out of interaction among heterogeneous agents. Their model has heterogeneous banks, providing credit, and firms, the latter being either capital-producing, using labour and investing in R&D to produce heterogeneous machine tools, or consumption-goods firms, using labour and investing in machine-tools to produce a homogeneous consumption good. Consumption-good production is funded either through internal funds or bank credit, a central bank setting the baseline interest rate, and a public sector issuing bonds and taxing the profits of firms and banks to pay unemployment benefits. Note that although capital is heterogeneous, because of heterogeneous machine tools, there is no capital structure based on technological complementarities in several stages of production because there is only one capital-good production stage and one consumption-good production stage with matching between capital-production firms and consumption-good production firms. Thus, value-added chains with more stages of production than two are excluded. Hence, the model does not account for possible coordination problems in the production structure that may arise due to excessive credit creation.

When it comes to monetary and fiscal rules, Dosi et al. (2015) consider a Taylor rule that is either standard, adjusting only to inflation, or dual-mandate, adjusting to both inflation and the unemployment gap, while the fiscal rules consist of the European Stability and Growth Pact (SGP): the 3% deficit to GDP rule, and the Fiscal Compact (FC): the 60% public deficit to GDP rule, which is represented by a deficit-reduction rule that reduces public debt annually with 5% of the amount exceeding 60%. Additionally, there is also a risk premium on public debt. Their results are consistent with reality, e.g. investment varying more and consumption less than GDP, while firm financial health evolves according to Minsky (1986). Recall that according to the FIH, prolonged prosperity tends to increase financial instability, which the ABC would attribute to malinvestment due to credit creation.

Dosi et al. (2015) run several policy experiments, having no fiscal rule constraint (*no rule*) and the standard Taylor rule targeting inflation as benchmark:

- **fiscal rules:** SGP and FC increase unemployment, output volatility, and the risk of economic crises which reduce GDP growth and increase public debt to GDP, thus making austerity policies self-defeating;
- **fiscal rules with escape clauses:** suspension of the implementation of SGP and FC in exceptional circumstances made the GDP growth rate close to the benchmark *no-rule*, but unemployment, output volatility, the risk of economic crises, and public debt to GDP were still higher than the benchmark *no-rule*;
- **fiscal rules under bond spend adjustment:** even when adding a risk premium to the interest rate on sovereign debt for all fiscal rules, the benchmark *no-rule* outperforms the other *fiscal rules*, SGP and FC without and with escape clauses;
- **alternative monetary rules:** a dual-mandate Taylor rule gives lower GDP volatility, unemployment, risk of crises, and public debt to GDP than a standard Taylor rule for the benchmark *no-rule*, and it alleviates the pains of fiscal consolidation and improves public debt to GDP for all *fiscal rules*, which is due to the interaction between the dual Taylor rule and the Basel rule that

makes credit dependent on banks' capital because a higher interest rate during expansion allows banks to build buffers.

These findings suggest that fiscal rules are destructive to economic performance, although escape clauses less so, while a dual-mandate Taylor rule gives better economic performance both for the benchmark *no rule* and fiscal rules (SGP and FC without and with escape clauses). Dosi et al. (2015) stress the bank and balance-sheet transmission channels of monetary policy, where capital adequacy and capital buffer adjustment have a combined effect¹, so a dual-mandate monetary policy rule stabilises the economy better than a standard Taylor rule focusing on inflation only, because the dual-mandate Taylor rule makes more investment being financed and implemented at a lower rate of bank failure, while fiscal rules depress the economy without improving the ratio of sovereign debt to GDP.

However, there is no explicit dual-mandate monetary policy specified within the Treaty on the Functioning of the European Union (TFEU), Articles 119 and 127, which state that the main objective of monetary policy and the European System of Central Banks (ESCB) is price stability, but also to support general economic policies without harming price stability. This opens for consideration of aspects other than price stability, such as GDP volatility, risk of crises, unemployment, and public debt to GDP. According to Dosi et al. (2015), the best policy mix for stabilisation would be an unconstrained fiscal policy and a monetary policy targeting both price and employment stability, achieving lower GDP volatility and a lower likelihood of crises without increasing inflation and public debt to GDP. This suggests that price stability can be achieved together with other economic policy objectives with an unconstrained fiscal policy and a monetary policy targeting both price and employment stability, thus giving price stability while supporting general economic policies.

There are limitations to the model. First, it operates by having the central bank conducting monetary policy through the interest rate, thus neglecting both the ZLB and QE as a means to achieve monetary transmission. Second, it does not consider financialisation that may lead money into unproductive investments, too much financial assets relative to real assets. Third, banks and firms are heterogeneous, but not households, who are workers and consumers only, thus neglecting household debt as well as the intertemporal preferences of consumers. Fourth, production is only in two stages, thus neglecting mismatching between producers at various stages and malinvestment in capital goods production.

Nevertheless, the lessons are that fiscal rules are destructive as austerity mechanisms, while a dual-mandate monetary policy reduces the procyclical effects of the Basel II macroprudential rule. The massive fiscal and monetary response of the EU to COVID-19 will mean much higher public debt. Financial crises cause asset markets collapse, output and employment decline considerably, and government debts explode as tax revenue declines with output and countercyclical fiscal policies increase public spending (Reinhart and Rogoff, 2009). The GFC was followed by the SDC, where QE was a reasonable response. However, QE gives freedom in terms of fiscal policy, while it may tie monetary policy to fiscal policy.

Popoyan et al. (2017) develop an ABM considering the economy as a complex, evolving system where macroeconomic outcomes emerge out of interaction among heterogeneous agents in order to study the impact on macroeconomic dynamics of alternative macroprudential regulations and their possible interactions with different monetary policy rules, having a triple-mandate monetary policy rule where prudential rules constrain the endogenous creation of credit in the economy. First, they consider the

¹ Capital adequacy rules constrain credit which, in turn, makes firms invest less, thus reducing aggregate demand, and less credit reduces technological progress, thus reducing long-term growth.

balance sheet of banks and let banks lend according to the '6C'² analysis, as well as the financial wealth of workers, shop owners, and bank owners, where consumption is out of current wealth, a fiscal policy where the tax rate is adjusted to the difference between the actual and target debt to GDP ratio. Second, they analyse monetary policy having a dual-mandate Taylor rule of inflation and an output gap as benchmark. Third, they add a triple-mandate Taylor rule considering the credit growth rate, explicitly connecting monetary and macroprudential policies, the latter guided by the global capital framework (Basel II and Basel III), the minimum static capital requirement, the counter-cyclical capital buffer, and the leverage requirement as well as the liquidity coverage ratio, accounting for the Basel III frameworks, the global capital framework and the global liquidity requirements. Popoyan et al. (2017) explore possible interactions between different macro-prudential policies, starting with Basel II, adding different levers of Basel III, alternative monetary rules, on a range of target variables. These include output gap, output gap volatility, inflation, unemployment, likelihood of economic crises (a drop of GDP higher than 3%), and bank failure rate. They find that the Basel III agreement appears to stabilise the banking sector and to improve the performance of the economy: the output gap and its volatility, average unemployment, the likelihood of economic crises, and the bank failure rates are significantly lower with Basel III than with Basel II, where the joint adoption of minimum static capital requirement and counter-cyclical capital buffer is the major driver of the improved performance of the economy under the Basel III framework. Furthermore, having these two or Basel III is complementary to their dual-mandate benchmark monetary policy, but a triple mandate monetary policy performs the best in different aspects. According to Popoyan et al. (2017), the joint adoption of the Basel III regulation and a triple-mandate would smooth credit fluctuations, which thereby increases the resilience of the banking sector and tames financial and macroeconomic instability.

Popoyan et al. (2017) use a fiscal rule with a target public debt to GDP, which seems more in line with the FC, which Dosi et al. (2015) find destructive, but it is more flexible as this target could be adjusted. Furthermore, they use a sales tax and let tax revenue be allocated to recapitalise banks. Nevertheless, central banks may benefit from taking financial stability into account by adjusting monetary policy to the credit growth rate, which would hamper financialisation. Both Dosi et al. (2015) and Popoyan et al. (2017) rely on conventional monetary policy, using the interest rate, but the latter mention the inclusion of an interbank market that could account for QE as a possible extension. However, Teglio et al. (2015) develop an ABM, which considers QE, having affinity with Dosi et al. (2015), but more focused on short-term fluctuations than long-term growth.

In their ABM, Teglio et al. (2019) develop a consumption market, where demand and supply are entirely endogenous and a financial market where households can invest their savings, having SGE and FC as baseline scenarios. First, they add an unemployment escape clause that suspends them by not raising tax rates even if they are above their thresholds when unemployment is sufficiently high. Second, they consider QE, where the central bank buys bonds on the financial market to sustain bond prices and then facilitates government debt financing in times of decreasing fiscal revenues. Third, they add a fiscal accommodation as complement to the unemployment clause and QE through a tax reduction. Like Dosi et al. (2015), Teglio et al. (2019) argue against fiscal austerity, pointing out that the potential loss to GDP is greater than the increase in the public deficit or public debt. According to Teglio et al. (2019), the unemployment clause (suspending SGP and FC when unemployment is very high) has a

² The '6C' analysis is to provide a positive answer to the following questions about a shop demanding a loan (Popoyan et al. (2017): (i) can the shop pay its loan? (capacity check); (ii) does the shop have enough liquidity to pay its loan if a period of adversity arises? (capital check); (iii) will the bank be protected if the shop fails to repay the loan? (collateral check); (iv) did the shop pay back its loans in the past? (credit reputation check); (v) are there some known factors that could adversely affect the shop's ability to pay back its loan? (credit conditions check); (vi) does the shop owner demonstrate the ability to make wise decisions? (common sense check), considering the three objectives, (i)-(iii).

positive effect, increasing real GDP growth and decreasing unemployment, but when adding QE (allowing the central bank to buy government bonds in the financial market) to the unemployment clause worsens the real GDP growth rate and unemployment and government bond yield becomes lower, while both real GDP growth and unemployment improve when QE is supplemented with fiscal accommodation (reducing taxes when unemployment is high), which also leads to fewer crises with shorter duration. Consequently, we may conclude that QE is complementary to fiscal expansion, involving both increased public spending and tax cuts. This suggests that fiscal policy leads recovery, while monetary policy decreases the yield curve.

To summarise, these three studies using ABM for a complex, evolving economy shows that fiscal rules are destructive to macroeconomic growth (Dosi et al., 2015; Teglio et al., 2019) and stability (Dosi et al., 2015; Popoyan et al., 2017; Teglio et al., 2019), while monetary policy could benefit from a broader mandate considering inflation and unemployment (Dosi et al., 2015; Teglio et al., 2019), or inflation, the output gap, and credit growth, when considering the link between monetary and macroprudential policy (Popoyan et al., 2017). In monetary-fiscal policy interaction, monetary policy is accommodative, using a broader monetary policy mandate, while monetary-macroprudential policy interactions induce the central bank to consider credit growth to avoid excessive credit creation, but this is not necessarily the same as fiscal dominance, although fiscal policy would have a crucial role for recovery.

3. COVID-19 AND MONETARY-FISCAL POLICY INTERACTIONS

The EU response to COVID-19 involves a massive fiscal expansion to achieve a sustainable and resilient recovery through massive public and private investments, including green and digital transformations of the economy. The ECB is pursuing an accommodative monetary policy by means of unconventional monetary policy, such as QE through APP, now supplemented with PEPP, and providing liquidity long-term refinancing through TLTRO. The ECB was proactive, providing a series of measures guided at providing liquidity to the corporate sector, even relaxing banking regulations to make banks lend, while due to the lack of a fiscal EU counterpart, there has been less monetary-fiscal coordination, PEPP being a substitute to a fiscal response at the euro area level (Bénassy-Quéré and Weder di Mauro, 2020). Nevertheless, a fiscal policy having a long-term perspective has emerged, the MFF 2021-2027 and NGEU, where the green and digital transitions are key elements, which is acknowledged as crucial by the ECB. Christine Lagarde, President of the ECB, stresses the critical importance of the NGEU for a coordinated euro area recovery: “not only can it help support demand [...] it can also increase the structural resilience and growth potential of the entire area. [...] [NGEU] has the potential to significantly support the regions and sectors hardest hit by the pandemic, strengthen the Single Market and build a lasting and even recovery.” About the NGEU agreement, Lagarde (2020) states that it, together with bold national measures, shows “that Europe can react forcefully” and with it “there is a great opportunity to strengthen economic resilience and convergence of Member States.” This suggests that the fiscal response NGEU is the core of the EU recovery strategy and therefore also of a monetary-fiscal nexus emerging around COVID-19, which illustrates monetary-fiscal interdependence due to COVID-19 rather than an emerging monetary-fiscal nexus threatening central bank independence. In addition, under COVID-19, the ECB has a fiscal counterpart through the NGEU, which provides for structural change in the economy through green and digital transitions.

3.1. Stability and growth with green and digital transitions

When the economy is in crisis, public spending may support technological transitions, so when the green and digital transformations of the economy receive public investment, in e.g. appropriate infrastructure, it creates an incentive to invest in those technologies, such as information and communication technology (ICT). As pointed out earlier, an expansionary fiscal policy with an accommodative monetary policy may contribute to stability and growth, but the funding has to be allocated properly in the production structure of the economy. Considering the green and digital transformations, Lagarde (2020) states: “the national support measures should be temporary and targeted to ensure that only structurally sound firms are supported. This allows the structure of our economies to adjust where needed, so that capital and labour flow to the most productive companies in the economy. This is particularly important now, with the digital and green transformations of our economies underway.”

The crisis provides an incentive to innovate and room for government support to technological transformations. COVID-19 is seen as offering great value to 5G, as expressed in Nokia’s 5G Readiness Report (Nokia, 2020): “COVID-19 has greatly accelerated the need for physical industries to digitally augment. Mature digital industries, such as online retail, media and banking, have been the immediate beneficiaries of COVID-induced demand shifts. [...] We expect physical industries to increase their ICT investment and adopt end-to-end 5G technologies extensively in the next decade, thus transforming themselves into augmented physical industries.” Fiscal expansion for economic recovery from COVID-19 includes public investment to support digitalisation. According to Nokia (2020): “As we head towards the ‘great re-set’ in the wake of COVID-19, national recovery budgets need to foresee adequate

financing for improving connectivity where needed for 5G and very high capacity fixed networks (fiber)."

Hence, in times of crisis, fiscal expansion, involving public expenditures to the digital transformation (like the green one, along the lines of the EU response), would benefit from a fiscal policy not constrained by rules and an accommodative monetary policy providing sufficient liquidity to the economy. Nevertheless, maintaining financial stability is crucial to innovation and growth.

As de Haan and Eijffinger (2016) argue, the GFC meant that central banks had to intervene to maintain financial stability, involving coordination between monetary and fiscal policy as well as too low inflation, while the Great Recession made the interest rates useless as a policy instrument, inducing central banks to pursue unconventional monetary policies, such as QE, involving large-scale asset purchases. However, as Bénassy-Quéré and Weder di Mauro (2020) point out, this has not been the case at the euro area level, since the ECB does not have a fiscal counterpart to coordinate with, while the ECB has enabled national governments to focus on short-term unemployment and keeping firms alive, purchasing mainly national government bonds.

As the EU, including the euro area, has a highly heterogeneous political structure and the ECB lacks a fiscal counterpart, it would strengthen central bank independence by interacting with various national governments. Heterogeneous political structures have stronger central bank independence because it offers an incentive to delegate monetary authority to prevent conflicts (de Haan and Eijffinger, 2016). Hence, the emergence of a more coordinated EU fiscal policy could weaken the independence of the ECB. On the other hand, the independence of the ECB might be undermined because it mainly purchases the national government bonds of Member States. According to Hall and Reis (2015), the ECB faces a default risk on holdings of sovereign bonds in the periphery – a risk that has increased as the ECB has expanded its balance sheet and shifted to direct holdings of bonds, such as the QE with the public sector purchase programme (PSPP), increasing the risk of instability. As the balance sheet of central banks expand to very high levels, their financial risk increases, while fiscal authorities may push monetary authorities to use monetary policy to reduce debt through inflation (de Haan and Eijffinger, 2016).

Expansion of the balance sheets of central banks means money creation that adds liquidity to the economy, which allows productive investments in the economy. However, Gaffard et al. (2018) point out that the increased supply of credit due to QE has not been matched by a corresponding demand for credit, partly due to the low demand expectations of firms and households (further depressed by fiscal austerity policies) and partly because of the increasing financialisation in recent decades. Excessive financialisation hampers economic growth, reduces innovation, contributes to inequality, and may cause financial instability (Battiston et al., 2018). Broad money growth – the growth rate of M3 – reflects the growth of credit in the economy, as it includes credit money created by banks. Table 1 shows the increase in M3 growth due to COVID-19 (i.e. the injection of liquidity into the economy to promote recovery), comparing the period March to August 2020 with three preceding periods.

Table 1: M3 growth rates

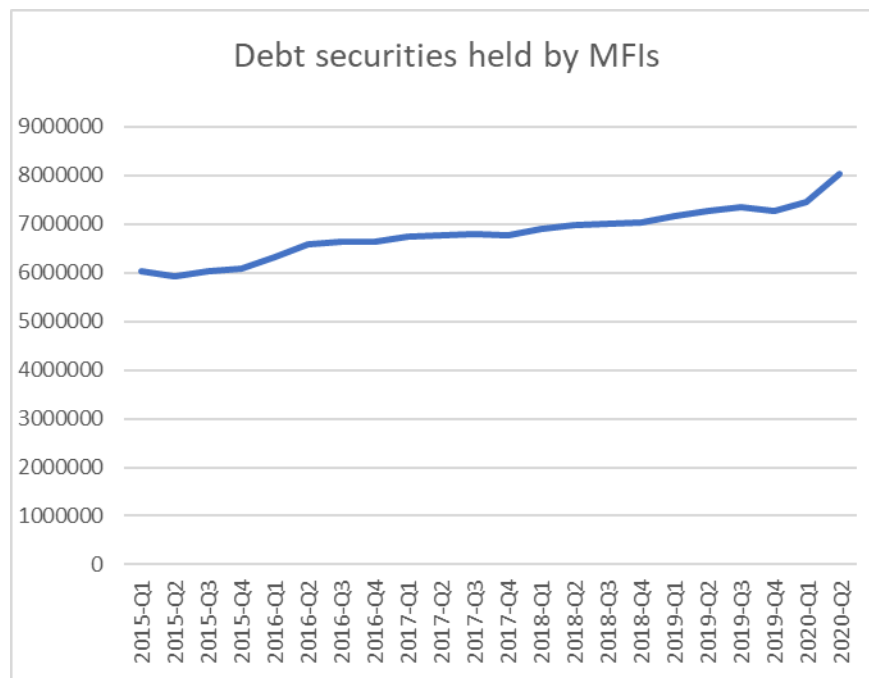
	March 2020 to August 2020	July 2019 to February 2020	January 2019 to June 2019	January 2018 to December 2018
Average	8.92%	5.45%	4.50%	3.97%
Maximum	10.1%	5.8%	4.8%	4.6%
Minimum	7.5%	4.9%	3.8%	3.5%

Source: ECB Statistical Data Warehouse.

Note: M3 growth rates for euro area for the COVID-19 period from March to August 2020 and three preceding periods.

However, financial stability may decrease when the ECB balance sheet expands due to unconventional policy instruments. The balance sheets of monetary financial institutions (MFIs)³ should expand given QE. Figure 1 shows there is expansion in the holdings of debt securities of MFIs, especially for the two first quarters of 2020 before the major monetary measures, such as PEPP, were announced.

Figure 1: Debt securities as long-term assets of MFIs



Source: ECB Statistical Data Warehouse.

Unconventional monetary policy instruments include refinancing operations as well as QE. However, there seems to exist a refinancing channel from QE to refinancing improving credit availability and lowering interest rates from affected households (Di Maggio et al., 2020). We may consider the unconventional monetary policies as a whole.

³ MFIs include credit institutions, money market funds, euro area national central banks, and the ECB.

Box 1 shows the unconventional monetary policy instruments used by the ECB: pandemic emergency longer-term refinancing operations (PELTRO) and longer-term refinancing operations (LTRO) as well as TLTRO, APP, and PEPP which were mentioned earlier. While LTRO provides liquidity, TLTRO is targeted to induce banks to lend to the real economy. PELTRO and PEPP are directly linked to COVID-19, PELTRO being a refinancing operation like LTRO, while PEPP is an asset purchase programme. Hence, there will be more unconventional measures expanding the ECB balance sheet which could increase the exposure of long-term commitments. However, PEPP is supposed to be rolled over to avoid interference with monetary policy in the future, and there are high liquidity injections in the refinancing operations supporting bank lending to households and firms within TLTRO, but monetary policy measures since March 2020 are subject to adjustment to make sure inflation moves towards its target (ECB, 2020a). This is in line with the main objective of the ECB to support price stability to safeguard the value of the euro, as specified in the TFEU, Articles 119 and 127, which, together with Article 123 that prohibits overdraft and credit facilities to the government as well as the direct purchase of government bonds from the government, provide a legal foundation also for the unconventional monetary policy.

Box 1: ECB unconventional monetary policy measures

LTRO: In recent years, regular operations have been complemented by two liquidity-providing long-term refinancing operations in euro with a three-year maturity (maturing on 29 January 2015 and on 26 February 2015) as well as by US dollar liquidity-providing operations.

PELTRO: On 30 April 2020, the ECB's Governing Council decided to conduct a series of seven PELTROs to provide liquidity support to the euro area financial system and ensure smooth money market conditions during the pandemic period.

TLTRO: These are Eurosystem operations that provide financing to credit institutions for periods of up to four years. They offer long-term funding at attractive conditions to banks in order to further ease private sector credit conditions and stimulate bank lending to the real economy.

APP: Since 2009, several programmes of outright asset purchases have been implemented with the objective of sustaining growth across the euro area and in consistency with the aim of achieving inflation rates below, but close to, 2 percent over the medium term.

PEPP: On 18 March 2020, the ECB's Governing Council announced a new pandemic emergency purchase programme with an envelope of EUR 750 billion. The temporary programme was designed as a response to the coronavirus emergency to address the unprecedented situation faced by the monetary union.

Source: ECB.

Although a central bank creates digital money through QE with the aim of increasing spending in the real economy, there is a crucial difference between QE and debt monetisation, as the former only gives a temporary increase of the monetary base, which would increase money supply only if banks also increase their lending, while the latter gives a permanent increase in the monetary base to fund the government. Under QE, government bonds eventually mature and have to be paid back according to bond maturity. Hence, the duration of the temporary increase in the monetary base with QE depends on what maturities the bonds have. These must be kept short to avoid excessive liquidity. Longer maturity, which gives a more durable increase in the monetary base, seems to cause volatility. According to Hollmayr and Kühn (2019), monetary-fiscal interactions with longer average maturities

give higher volatility to the economy because the portfolio rebalancing effect in the banking sector following from government bond purchases is more elaborated, so yields must fall more to induce banks to sell their government bondholdings.

Unconventional monetary policy may have shifted the monetary-fiscal policy interaction from monetary dominance with independent central banks to fiscal dominance, where the central bank is forced to support fiscal policy and where fiscal dominance is measured by the fraction of government debt that needs to be backed by monetary policy (de Haan and Eijffinger, 2016). Under fiscal dominance, QE puts downward pressure on inflation due to a reduction of household wealth, but under monetary dominance, QE increases inflation as short-term interests are decisive (Hollmayr and Kühl, 2019). However, QE in itself does not imply fiscal dominance. A central bank may pursue a monetary policy, in which QE is an instrument, that is consistent with fiscal policy without formally being dictated by it, expanding the balance sheets of central banks with increasing holdings of government bonds, as long as the motive is to address monetary transmission problems.

Regarding the concerns that QE would be monetisation of public debt due to fiscal dominance, Isabel Schnabel (2020a), a Member of the Executive Board of the ECB, states that the ECB “is not keeping interest rates low to make it easier for governments to finance their debt [...] The euro has been built on the principle of ‘monetary dominance’ [...] The public debt ratio in the euro area is notably lower than it would have been in the absence of the bond purchases.” About the fiscal policy response to COVID-19, Schnabel (2020a) argues that it “strengthens the effectiveness of monetary policy and mitigates the long-term costs of the pandemic”, while with “targeted, forward-looking investment, not least under the umbrella of the EU Recovery Fund, governments can foster sustainable growth, increase long-term competitiveness and facilitate the necessary reduction of the debt ratio once the crisis has been overcome.”

Hence, during the COVID-19 crisis, there is a strong complementarity between fiscal policy, using NGEU, and monetary policy, using PEPP and TLTRO. However, the ECB remains committed to its price stability mandate, while using QE, acknowledging the importance of targeted investments for sustainable growth. Does a strong complementarity suggest fiscal dominance or a monetary-fiscal nexus? Not necessarily, because the COVID-19 crisis is something both monetary and fiscal policy need to address, so what seems like a nexus are monetary and fiscal responses to the COVID-19 crisis. In a complex, evolving economy, considering the production structure, complementarity between monetary and fiscal policy is essential to economic performance. Schnabel (2020b) points out that “in a low interest rate environment, there are strong complementarities between fiscal and monetary policy that can help lift the euro area economy out of the current low-growth, low-inflation trap.” Behind the decline in the interest rate that equals saving to investment, Schnabel (2020b) sees “lower trend productivity growth, an ageing society and global excess savings”, which means that “ever-lower interest rates are needed to stimulate growth and investment” and that “that years of weak aggregate demand and price pressures have forced central banks worldwide to find additional instruments that could provide policy accommodation when their main policy rates were approaching zero.” This is an adaptation to structural change. Provided the NGEU promotes innovation through the green and digital transitions, making fruitful public investments that would crowd in private investment, it would be reasonable to expect future productivity growth, absorbing the liquidity injected. However, public debt as well as private debt will increase through liquidity injections and need to be addressed.

As a monetary response to COVID-19, Schnabel (2020b) points out in particular PEPP and TLTRO, which “prevented the health crisis from turning into a full-blown financial crisis at a time when markets started to panic and price action became highly destabilising”, but a fiscal response was necessary, “[f]iscal expansion is then indispensable in order to sustain demand and mitigate the long-term costs of the

crisis.” In times of uncertainty, quality public investment can increase GDP growth and employment, crowding in private investment, particularly in industries critical to resolve the health crisis and to promote recovery, giving new investment in healthcare, social housing, digitalisation, and environmental protection (IMF, 2020). Crowding in of private investments due to public investment is supported by Dosi et al. (2015). Using fiscal and structural policies wisely may support price stability and central bank independence, such as the NGEU on green and digital investments (Schnabel, 2020b).

As Reinhart and Rogoff (2009) point out, crises increase public debt considerably, but that does not necessarily threaten central bank independence. Schnabel (2020a) points out that “[t]here is no evidence of a systematic feedback loop from sovereign debt developments to monetary policy decisions.” Furthermore, Schnabel (2020b) states that a sustainable growth path must be reached before public debt is addressed, arguing for a reform of the European fiscal framework: “fiscal rules are too complicated, hard to enforce and procyclical.” The procyclical effect of fiscal rules have been pointed out by Dosi et al. (2015) in an evolutionary context with heterogeneous agents and Gaffard et al. (2018) when the economy is viewed as a sequence of disequilibrium sequences. More specifically, Gaffard et al. (2018) point out that budget deficits are not always a problem and the question is for how long and for how much before public spending can be relayed by the recovery of private expenditure. In addition, price stability is crucial to the coordination of markets over time in their disequilibrium process framework.

However, Dosi et al. (2015) find that a dual-mandate monetary policy, a dual-mandate Taylor rule focusing on both price and employment stability, makes the economy perform better, compared to the standard one, focusing only on price stability, especially when there are fiscal rules, but yet the dual-mandate Taylor rule keeps inflation low and stable. Rather than a dual-mandate Taylor rule, Beckworth (2020) proposes a radical change, using nominal GDP level targeting (NGDPLT) rather than inflation targeting to stabilise growth of total spending and thereby growth of income, involving a two-rule monetary policy, one for positive interest rates and one for zero or negative interest rates, and a facility with government securities deposited in the central bank for rule-based helicopter drops, i.e. direct money transfers to households. Rather than using short-term interests or QE to influence the yield curve, this proposal defines an interest rule for positive interest rates and a monetary base rule otherwise. More specifically, Beckworth (2020) uses the nominal GDP gap, which is the percentage gap between the forecasted and target growth rates of nominal GDP, so that if nominal GDP is expected to rise above its target, the central bank should increase its interest rate if interest rates are positive or decrease the growth rate of the monetary base otherwise. The idea of using helicopter money – providing money to households directly – has also been discussed in a European context, but with money transfers to government fiscal transfers related to COVID-19.

3.2. European monetary choices

As noted above, the fiscal response NGEU and the monetary responses PEPP and TLTRO are complementary, but various ideas have been discussed, such as Coronabonds and helicopter money. Beck (2020) argues for Coronabonds as a means for debt mutualisation, a sign of solidarity, but also to prevent either too little stimulus in countries most affected hampering recovery in the Single Market or too much fiscal stimulus increasing sovereign debt. Horn et al. (2020) point out that the history of Coronabonds goes back to European Community bonds within the Community Loan Mechanism (CLM) of 1975, where loans obtained by the European Commission were transferred to the oil crisis hit countries through the Bank for International Settlements (BIS), the lesson for today being the importance of the EU budget for European bond guarantee schemes, that the loans were repaid in full and on time, so guarantees were never activated, and that European governments have repeatedly shown willingness to provide rescue funds with substantial guarantees to other members in need.

Today, addressing the challenges posed by COVID-19, the NGEU is doing what the European bonds did, allowing the Commission to borrow up to EUR 750 billion on the markets to be paid back by 2058, out of which EUR 672.5 billion is allocated to the RFF to provide funds to the countries and sectors most affected by the crisis for 2021-2023 and requires Member States to develop national recovery and resilience plans that contribute to green and digital transitions. To what extent NGEU, using a Eurobond-like financial approach, will succeed remains to be seen.

Developing national recovery and resilience plans is no guarantee to make sure that those liquidity injections are properly allocated, thereby avoiding malinvestment along ABC and financial instability along FIH. Furthermore, the demand for investible funds may remain low in spite of an increased supply of them, while there may exist structural maladjustments, following Haberler ([1937] 2011). National plans need continual evaluation, thus preventing funds from being directed to unfruitful investment projects, to aim at green and digital innovation. Allocation of resources is a bottom-up procedure, where entrepreneurial activity is coordinated through the price mechanism. National plans may disturb the market by imposing allocations, which are harmful for the green and digital transitions, as the capital structure may become inconsistent, while public goods, such as infrastructure, may not be adequately provided. Public investments need to be fruitful and public malinvestment is possible. However, if properly done, there may be crowding in of private firms' investment, as Dosi et al. (2015) find when fiscal policy increases aggregate demand in times of recession.

The NGEU will operate for 2021-2023, and more time may be needed to recover from the crisis, but it takes away the burden from monetary policy. As Bénassy-Quéré et al. (2020) point out, PEPP is a complement to long-term refinancing through TLTRO and PEPP's envelope is substantial and may be adjusted if necessary, but in addition they suggest a long-term credit line through the European Stability Mechanism (ESM). PEPP started with an envelope of EUR 750 billion in March until December 2020, but in June PEPP was adjusted to EUR 1,350 billion until June 2021, while TLTRO III conditions were eased twice in March and April (Lane, 2020). While PEPP solves liquidity problems and prevents immediate runs on public debt, more needs to be done, according to Giavazzi and Tabellini (2020), who suggest irredeemable or very long maturity Eurobonds to fund the very large fiscal support required to counter the effects of COVID-19. Very long maturities would make QE more durable in time, blurring the difference between QE and monetisation, especially when perpetuities are considered. Such bonds would need to be backed by tax capacity. Giavazzi and Tabellini (2020) argue that the very long maturity COVID Eurobonds to be bought by the ECB be backed by the joint tax capacity of Member States. However, very long maturity involves some degree of monetisation, especially if those Eurobonds would be perpetual. Giavazzi and Tabellini (2020) consider monetisation as part of the optimal policy response, since the danger is deflation, while the ECB would maintain its independence if inflation should arise, as the ECB would remain free to reduce its balance sheet if necessary. Consequently, they suggest a monetary policy restricting the ECB's independence through the monetisation of public debt in deflation, while the ECB maintains its independence in times of inflation. This would be worse than the policy the ECB pursues.

The monetisation of public debt accumulated during COVID-19 could be achieved through helicopter money, as suggested by Galí (2020), Kapoor and Buiter (2020), and Yashiv (2020). According to Galí (2020), the central bank would purchase of government debt, to immediately write it off, so it would no longer have any impact on the government's effective debt liabilities, a monetary financing measure strictly restricted to the duration of the emergency measures linked to the COVID-19 crisis. Yashiv (2020) agrees with Galí's idea, arguing that as debt-financed plans are less effective and constitute tax-deferral they are less suitable to meet the COVID-19 shock, emergency legislation allowing central banks to use helicopter money for a limited time of 90 days, that could be extended for another 90-day

period if requested by the central bank. They both stress that it is an emergency procedure, not a rule, which illustrates that they are aware that it would be potentially dangerous, submitting monetary policy to fiscal policy.

Would this violate central bank independence? Yashiv (2020) is very keen to maintain central bank independence, while targeting fiscal expenditures to address crucial COVID-19 problems. In addition of the extension having to be requested by the central bank, a COVID-19 policy committee would be set up to make sure it is an emergency procedure only, thus preserving central bank independence, while targeting fiscal measures to support the budget of health care systems as well as assistance to households, firms, and to maintain the functioning of markets (Yashiv, 2020). Hence, this helicopter money would function strictly as an emergency procedure and may not put central bank independence into jeopardy, but the COVID-19 policy committee would institutionalise a monetary-fiscal nexus, although with external experts as well.

As GDP crumbles and deficits increase, the debt-to-GDP ratios would dramatically increase, leading to counterproductive austerity due to SGP and FC, leaving one way out, the creation of new money through a one-off helicopter drop, cash transfers to the government around 20-30% of GDP to cover public expenditures related to COVID-19 (Kapoor and Buiter, 2020). It makes sense to decrease government debt through a one-time monetisation, as public debt to GDP would otherwise become very high. However, TFEU, Article 123 is usually seen as a prohibition against monetisation of public debt, but Kapoor and Buiter (2020) argue that it only bans credit and overdraft facilities, not helicopter drops, transfers or an extraordinary dividend payment. The ECB cannot buy government bonds directly from the government at any level, but transfers are not mentioned. Nevertheless, in Galí's (2020) helicopter drop proposal, he states that it would be equivalent to the central bank purchasing government debt, to immediately write it off. Hence, the legality is questionable.

Beckworth's (2020) NGDPLT proposal is different, as direct money transfers are to be made to the households and that the central bank should have a facility to make direct transfers at ZLB, following a monetary rule. Such an arrangement would be more likely to preserve an independent central bank. The helicopter drops proposals as temporary COVID-19 measures express concern for central bank independence, and through this temporary monetisation of fiscal COVID-19 transfers, further increase of public debt leading to austerity after the crisis would be prevented (Galí, 2020; Kapoor and Buiter, 2020; Yashiv, 2020). However, public debt reduction will not be addressed until the economy has recovered and shows stable growth. Nevertheless, the objective is public debt conversion. Vihriälä (2020) proposes another debt conversion approach, although closely related, namely to convert a fraction of public debt held by the ECB, or preferably the ESCB, into zero-coupon perpetuities to decrease the public debt burden instantaneously, which constitutes monetary financing. Such experiments could be highly inflationary and undermine central bank independence.

However, the increased debt burden due to unconventional monetary policy is a crucial problem that needs to be resolved. The ECB combines TLTRO and PEPP to lend to affected firms through countercyclical capital buffers and extended facilities to purchase government and corporate debt (Becker et al., 2020). As Baldwin and Weder di Mauro (2020) argue, COVID-19 requires that we do what it takes, and while the medical shock is transitory, the economic damage may be persistent, and as the shock comes from the real economy, fiscal policy must take the lead and the monetary policy must accommodate. This is achieved through PEPP and TLTRO as major monetary response, while the forward-looking NGEU provides the major fiscal response, in addition to the expansion in MFF for 2021-2027. Miles (2020) argues that while QE is not helicopter money, it is useful. Gaffard et al. (2018) consider QE as a useful tool to shape the supply of credit to the real sector, even in normal times. Hence, QE could have a role to play in the new normal. QE through PEPP and refinancing through TLTRO seem

to have contributed considerably to the growth of M3 in July (ECB, 2020a). The public deficit and public debt will increase, and the public debt burden needs to be resolved. ECB staff estimate the deficit ratio to be 8.8% in 2020 and then to decline to 4.9% in 2021 and 3.6% in 2022, while the public debt-to-GDP is estimated to become 100.7% of GDP in 2020, to decrease slightly to 98.9% by the end of 2022 in the euro area (ECB, 2020a).

The high public debt levels have been developed since the GFC and SDC, causing concerns for future solvency problems, but in addition, corporations and households have not deleveraged substantially since the GFC and SDC, and the corporate debt burdens threaten the economic recovery from COVID-19 (Becker et al., 2020). The new normal will include very high private and public debt initially. There is need for debt restructuring in the future, both in the private sector and the public sector.

Looking at the achievements so far, there has been a strong recovery, although it will take some time and a resurgence of the virus infection rates creates uncertainty. ECB staff estimate that the euro area economy will have recovered half of the decline from the beginning of the pandemic by the third quarter this year and that full recovery will be achieved by the end of 2022, i.e. a fall of 8% this year and a growth of 5% in 2021 and 3.2% in 2022 (Mersch, 2020). The main policy responses are TLTRO and PEPP, for monetary policy and NGEU for fiscal policy. Through TLTRO, the supply of credit has been supported, causing credit growth meeting the demand for liquidity of firms, but also causing prices on financial assets and real estate to increase, and the net injection of liquidity of TLTRO III in June and September was EUR 706 billion (gross nearly EUR 1.5 trillion) while PEPP has helped return inflation closer to the ECB definition of price stability, with fiscal measures, like the NGEU, have been a crucial complement (Mersch, 2020). What can be observed is a strong complementarity between monetary and fiscal policy, but even if that is seen as a nexus, it is temporary and defined by COVID-19. However, the increasing prices of financial assets and real estate suggest that the demand for credit has been saturated and financialisation effects. Credit-creation causing malinvestment along the ABC and financial instability along the FIH become more likely, while firms and households become more highly leveraged, so the liquidity injection should adjust.

As Gaffard et al. (2018) argue, monetary policy must consider disequilibrium market coordination and structural change. However, due to liquidity injections through unconventional monetary policy measures, both private and public debt will be very high in the new normal, after the economy has recovered, and there will be a need for debt restructuring. However, as Dosi et al. (2015) argue, having no fiscal rules with a dual-mandate monetary policy aiming at both price and output stability would be stabilising in the short-run and give economic growth in the long run. Nevertheless, this does not mean a monetary-fiscal nexus and central bank independence remains, as long as the central bank pursues its mandate. However, the debt burden needs to be resolved.

4. CONCLUSION

As a response to the COVID-19 pandemic, the ECB has responded with a very expansionary monetary policy, especially through PEPP and TLTRO, which inject liquidity into euro area economies in order to stabilise them, while focusing on its price stability target. The European Council has added a complementary common fiscal response, especially through the NGEU which focuses on the structural change of EU economies to make green and digital transformations. The growing broad money supply reflects this injection of liquidity, which is meant to avoid severe deflation, but this raises concerns about non-performing loans, reflecting malinvestment and financial instability. Given the uncertainty around COVID-19, very strong liquidity injections may cause too optimistic expectations of profit opportunities. A disequilibrium approach of output-inflation dynamics, which focuses on the production structure, is warranted, as unconventional monetary policies, such as the PEPP and TLTRO, help banks and other financial institutions recover, while expansionary fiscal policies, such as the NGEU, are necessary to achieve economic growth. As well as being a fiscal policy, the NGEU is a structural policy to achieve green and digital transitions. A disequilibrium approach to output inflation dynamics involves sequences of coordination among heterogeneous agents and markets with imbalances across markets changing over time. Increasing the liquidity of the banking system would meet a demand for credit during a pandemic up to a point, but the expectations of firms and households matter and liquidity may remain in the financial system due to financialisation.

Production as sequences in stages includes capital that is a heterogeneous structure, whose composition changes over time in a complex, evolving economy where there are many interactions among heterogeneous agents and out-of-equilibrium dynamics. Monetary-fiscal interactions within such a context, which have been considered by means of ABMs in the literature, suggest that fiscal rules are destructive to economic performance, although escape clauses less so, while a dual-mandate Taylor rule gives better economic performance in terms of short-term stability and economic growth. Three studies using ABM for a complex, evolving economy show that fiscal rules are destructive to macroeconomic growth (Dosi et al., 2015; Teglio et al., 2019) and stability (Dosi et al., 2015; Popoyan et al., 2017; Teglio et al., 2019), while monetary policy could benefit by a broader mandate considering inflation and unemployment (Dosi et al., 2015; Teglio et al., 2019), or inflation, the output gap, and credit growth, when considering the link between monetary and macroprudential policy (Popoyan et al., 2017). Fiscal policy has a crucial role, but monetary policy matters, so this does not imply fiscal dominance, but macroeconomic coordination of monetary and fiscal policy, like coordination in markets.

Turning to monetary-fiscal policy interactions during COVID-19, monetary policy in the euro area was first with PEPP and TLTRO in March, while a common fiscal response was wanted until the NGEU arrived as a common EU fiscal response in July. This left room for various proposals such as long-term credit lines through the ESM, Eurobonds, also called Coronabonds, including a zero-coupon perpetuity version, and helicopter drops with direct money transfers to targeted fiscal transfers and a closely related use of zero-coupon perpetuities as some kind of debt conversion. Financially, the NGEU is doing what the European bonds did, allowing the Commission to borrow on the markets. The ECB recognises the crucial role of the NGEU for a coordinated euro area recovery, strengthening economic resilience and convergence among Member States. The fiscal response NGEU is the core of the EU recovery strategy and therefore also of a monetary-fiscal nexus emerging around COVID-19, which illustrates monetary-fiscal interdependence due to COVID-19 rather than an emerging monetary-fiscal nexus threatening central bank independence. COVID-19 provides an incentive to innovate, e.g. in areas such as ICT, where 5G would need public investments in infrastructure. Malinvestment, both private and public, could cause a crisis, so it is important that funds are allocated to structurally sound firms in

sectors that benefit from the structural change imposed by COVID-19, such as digital industries. The NGEU will operate for 2021-2023 to contribute to green and digital transitions through national recovery and resilience plans. Developing national recovery and resilience plans is no guarantee that liquidity injections are properly allocated, thus avoiding malinvestment and financial instability, but research findings suggest that quality public investment can increase GDP growth and employment, crowding in private investment. The national plans need continual evaluation.

There is a strong complementarity between the fiscal policy, such as the NGEU, and the monetary policy, such as the PEPP and TLTRO, during the COVID-19 crisis. However, the ECB is committed to its price stability mandate, while using QE, acknowledging the importance of targeted investments for sustainable growth. Hence, as both monetary and fiscal policy respond to COVID-19, there exists a temporary monetary-fiscal nexus around COVID-19, but the ECB focuses on its price stability mandate, so there is no fiscal dominance threatening central bank independence. The fact that QE expands central bank balance sheets, including their government bond holdings, is not necessarily a sign of fiscal dominance, because QE is a way to inject liquidity with the purpose to reach price stability, defined by an inflation target, and under a dual-mandate monetary policy also output stability. So far, the PEPP and TLTRO seem to have injected liquidity, moving euro area economies closer to the inflation target, in line with the ECB's objective. However, as the ECB injects liquidity into the banking system and banks lend to firms and households – and the ECB may do so excessively causing prices on assets and real estate to increase – firms and households will become more highly leveraged, potentially creating a future problem of high private debt as well as high public debt which would lead to the need for debt restructuring in the new normal. Having no fiscal rules and a dual-mandate monetary policy focusing on both price stability and output stability would be stabilising in the short run and create economic growth in the long run, but it does not establish a monetary-fiscal nexus and central bank independence remains, as long as the central bank independently pursues its mandate. However, the debt burden needs to be resolved.

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ANNEX

Treaty on the Functioning of the European Union (TFEU)

Article 119 (ex Article 4 TEC)

"2. Concurrently with the foregoing, and as provided in the Treaties and in accordance with the procedures set out therein, these activities shall include a single currency, the euro, and the definition and conduct of a single monetary policy and exchange-rate policy the primary objective of both of which shall be to maintain price stability and, without prejudice to this objective, to support the general economic policies in the Union, in accordance with the principle of an open market economy with free competition."

Article 123 (ex Article 101 TEC)

"1. Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the Member States (hereinafter referred to as 'national central banks') in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments."

Article 127 (ex Article 105 TEC)

"1. The primary objective of the European System of Central Banks (hereinafter referred to as the ESCB) shall be to maintain price stability. Without prejudice to the objective of price stability, the ESCB shall support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union as laid down in Article 3 of the Treaty on European Union. The ESCB shall act in accordance with the principle of an open market economy with free competition, favouring an efficient allocation of resources, and in compliance with the principles set out in Article 119."

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